AECOM Environment

Prepared for:
Superfund Standby Program
NYSDEC
625 Broadway
Albany, New York 12233

Prepared by:
AECOM
Latham, New York
January 2020

Groundwater Monitoring Report
December 2018 Sampling Event
Northeast Alloys and Metals, Utica, NY
Site No. 633045
Work Assignment No. D007626-28



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1.0 Introduction

AECOM Technical Services Northeast, Inc. (AECOM) conducted a groundwater sampling event on December 10, 11 and 12, 2018 at the Northeast Alloys and Metals Site (the "Site") in Utica, Oneida County, New York (**Figure 1**). Monitoring activities were conducted in accordance with the approved scope of work for Work Assignment No. D007626-28 with the New York State Department of Environmental Conservation (NYSDEC). This report presents the results of the monitoring event and relevant historical data.

1.1 Site Description

The 3.9-acre Site, located at 2145 Dwyer Avenue in the City of Utica, New York (**Figure 2**), was a former metal fabrication/recycling facility. The primary contaminants of concern (COCs) are trichloroethene (TCE) and cis-1,2-dichlorothene (cis-1,2-DCE). A groundwater collection and treatment (GCT) system, installed in 2001, is in operation at the north end of the Site. The GCT system consists of a groundwater collection trench that discharges to a vault where groundwater is aerated to treat chlorinated volatile organic compounds (CVOCs). An average of approximately 160,000 gallons of shallow groundwater are treated monthly and discharged under permit to the Oneida County sanitary sewer system.

1.2 Site Background

Per the Record of Decision (ROD), the facility was historically used for electronics manufacturing (1950s), as a machine shop (1960s), and as a commercial laundry (1970s) prior to operation as a metals recycling facility between 1986 and 1991. In 1989, an underground fuel oil storage tank was removed from the southwestern portion of the courtyard and the initial presence of CVOC contamination at the Site was reported. Subsequent investigations resulted in the detection of CVOCs in soil and groundwater. TCE and cis-1,2-DCE were identified as COCs, although other VOCs were reported at lower levels. Later interviews reportedly alleged that a drum of TCE had been pierced in the courtyard by a forklift and had discharged to a storm drain. The Site was added to the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites as a Class 2 site (Site No. 633045) following an environmental investigation in 1994. The remedial investigation/feasibility study (RI/FS) was completed in 1997 and the ROD was issued in March 1998.

The selected remedy for the Site included: 1) installation of a groundwater collection and treatment system that discharges into the local publicly-owned treatment works (POTW), 2) installation of a soil vapor extraction (SVE) system at recovery wells RW-1 and RW-2, 3) excavation of contaminated soil in the east gate area in the vicinity of MW-9 to meet soil cleanup objectives, 4) implementation of restrictions on groundwater use until groundwater standards are attained, and 5) implementation of a site-wide operation, monitoring, and maintenance program to ensure that the remedial program is effective and that the remedial action goals are obtained.

Operation of the GCT system commenced in March 2001. An operation, monitoring, and maintenance (OM&M) program is in place for the Site. AECOM has performed groundwater sampling events since May 2005 to monitor the effectiveness of the remedy selected in the ROD.

According to the OM&M Manual (October 2001, prepared by URS Corporation), the results of the pre-design investigation (PDI) led to a ROD modification with respect to the proposed SVE system. Wells RW-1, RW-2 and RW-3 were installed between 1997 and 1999. The PDI results reportedly indicated that there was insufficient vadose zone contamination in the vicinity of the recovery wells to successfully operate an SVE system.

In 2008, AECOM completed additional investigations at the Site to evaluate potential data gaps with respect to building areas that were previously inaccessible but had been demolished by new owners. The investigation identified soil impacts on-site and beneath the former building slabs that were significantly higher than soil cleanup objectives. Additional overburden and bedrock monitoring wells were installed. Soil vapor monitoring was completed, which led to installation of a sub-slab depressurization system at the site building.

In 2011, AECOM evaluated the cost and feasibility of potential supplemental remedial alternatives, including excavation and in-situ chemical oxidation (ISCO). NYSDEC elected to pursue ISCO as a potential alternative to remediate the persistent contaminant mass. In July 2013, four new monitoring wells (MW-15, MW-16, MW-17, and MW-18) were installed in the source area to better gauge the success of the technology. These wells, along with several others, were sampled to represent baseline water quality prior to injection. Baseline results at the new wells exhibited the highest reported concentrations of VOCs to date. These results supported the conclusion that despite the low concentrations in groundwater collected in the GCT system, contaminant source material remains on-site, which is not attenuating.

In early 2014, two consecutive full-scale rounds of ISCO injection of sodium permanganate were executed at the Site. Chemical was injected at depths of 2 to 12 feet below ground surface (bgs) at an average rate of 3 gallons per minute. Overall, the low permeability and heterogeneity of site soils restricted delivery of the chemical and limited contact in some zones. Four post-injection groundwater monitoring events and one soil sampling event occurred between August 2014 and September 2015. Groundwater samples were collected using passive diffusion bags (PDBs). The results of the monitoring, which were documented in a Remedial Action Progress Report (March 2016), indicated that ISCO injections failed to reduce VOC concentrations in soil, but were successful at reducing VOC concentrations in groundwater. Laboratory results indicated that rebound did eventually occur in some wells. The greatest overall reductions occurred in the new source area wells; however, contaminant concentrations remain significantly elevated above groundwater standards.

2.0 Sampling

2.1 Sample Locations and Field Observations

Groundwater monitoring, which includes measuring and recording groundwater elevation measurements and water quality parameters, has been conducted on a periodic basis for on-site wells (**Figure 2**) since 2005, with newer wells added as they have been installed. Wells were visually inspected and the overall conditions of the wells were acceptable. It is recommended that minor modifications (e.g., lock and J-Plug replacement) be completed during routine OM&M site visits.

Prior to sampling each well, depth-to-groundwater and depth-to-bottom measurements were taken using a water level indicator. The indicator was decontaminated with a Liquinox® and spring water rinse and sprayed with distilled water before each use. Depth-to-groundwater measurements were utilized to calculate groundwater elevations (**Table 1**) and to generate a groundwater contour map for the Site (**Figure 3**). **Table 1** also contains construction details for the on-site wells.

2.2 Groundwater Sampling Methodology

Each monitoring well not sampled for emerging contaminants was purged of three water column volumes prior to sampling. Dependent upon the purge volume, either dedicated polyethylene tubing and a submersible pump or a dedicated polyethylene bailer was utilized to purge the appropriate volume of water prior to collecting each sample. The pump was decontaminated before use at each monitoring well in a Liquinox® and spring water bath and then in a distilled water bath.

Water quality parameters including temperature, conductivity, specific conductivity, dissolved oxygen (DO), oxidation-reduction potential (ORP), pH, turbidity, color, and odor were measured and recorded on the monitoring well purging/sampling forms (**Appendix A**). Except for wells purged dry (MW-3, MW-11 and MW-14) or sampled for emerging contaminants, a total of four sets of parameters were measured and recorded at each well; one for the initial discharge removed from the well and one for each of the subsequent three water column volumes removed prior to sampling. All purge water was processed through the GCT system.

Five wells (MW-1, MW-5, MW-12, MW-15, and MW-18) were sampled for 1,4-dioxane and per- and polyfluorinated alkyl substances (PFAS), emerging contaminants for which the Site has not previously been assessed. These wells were purged with a peristaltic pump, dedicated high-density polyethylene (HDPE) tubing and dedicated silicone tubing using low-flow techniques until the field parameters stabilized. The field sampling team followed AECOM protocol for the collection of samples in order to prevent cross-contamination by PFAS-containing materials during sampling. This included removal of low-density polyethylene (LDPE) tubing from well MW-1 and purging of three well volumes before low-flow sampling was performed.

All VOC samples were collected in laboratory-supplied bottle ware (40 milliliter vials preserved with hydrochloric acid) and shipped to Eurofins Spectrum Analytical Laboratory of Agawam, Massachusetts for analysis of VOCs by United States Environmental Protection Agency (US EPA) Method 624. Samples were packed in a cooler with ice and shipped under standard chain-of-custody procedures.

1,4-dioxane and PFAS samples were submitted to Con-Test Analytical Laboratory in East Longmeadow, Massachusetts. The laboratory used US EPA Method for 8270D SIM for 1,4-dioxane and US EPA Method 537 (modified) for the 21-analyte PFAS list. Samples were packed in a cooler with ice and shipped under standard chain-of-custody procedures.

3.0 Summary of Analytical Results

3.1 Volatile Organic Compounds

A cumulative summary of the analytical VOC data from the groundwater sampling events conducted between May 2005 and December 2018 is presented as **Table 2**. Results are compared to the New York State Ambient Water Quality Standards (AWQS) and Guidance Values (GV) for groundwater as a drinking water source. Analytes detected and reported above the applicable AWQS or GV are presented in bold font in a shaded cell. A copy of the laboratory report is included in **Appendix B**.

Table 2 was utilized to detect any notable trends in concentrations of VOCs in the on-site monitoring wells. Previous investigations indicated that the primary COCs for this Site are TCE and cis-1,2-DCE, although other VOCs are present. **Figure 4** depicts the analytical results from the most recent sampling event.

VOC contaminant concentrations reported for the December 2018 sampling event indicate that:

- Thirteen of the 20 monitoring wells sampled were reported to contain at least one detectable concentration of a VOC: BR-2, MW-4, MW-5, MW-6, MW-9, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17 and MW-18.

- Laboratory results from eight of the wells (MW-5, MW-6, MW-9, MW-14, MW-15, MW-16, MW-17 and MW-18) indicated exceedances of the AWQS and/or GV.

- VOCs were not detected in the groundwater samples collected from BR-1, BR-3, MW-1, MW-3, MW-7R, MW-8, or MW-10.

VOCs have never been detected in BR-1 or BR-3 since their installation in 2008, and according to all available data (i.e., May 2005 to present), they have not been detected in MW-1 either. MW-3 has had only one detection since October 2005 (acetone in September 2017). While there were no detections during the latest sampling event, acetone was not analyzed by the laboratory.

BR-2 and MW-4 contained their first VOC detections since being installed in 2008 and 2005, respectively, with no exceedances in either well. Both wells contained 1.5 micrograms per liter (µg/L) of total VOCs, consisting of cis-1,2-DCE and TCE.

Results from MW-5 exhibited 111.0 µg/L total VOCs, with four analytes (1,1-dichloroethane [1,1-DCA], cis-1,2-DCE, TCE, and vinyl chloride) exceeding the AWQS/GV. In September 2017, the groundwater sample contained 135.8 µg/L total VOCs with the same four analytes exceeding the AWQS/GV.

Groundwater collected from MW-6 during the December 2018 sampling event contained 659.3 µg/L total VOCs, with four analytes (1,1-DCA, cis-1,2-DCE, 1,1,1-trichloroethane [1,1,1-TCA] and vinyl chloride) exceeding the AWQS/GV. The prior event reported 898.4 µg/L total VOCs, with the same analytes exceeding the AWQS/GV.

Only two analytes (cis-1,2-DCE and TCE) exceeded their AWQS/GV in the sample collected from MW-9, which contained 73.9 µg/L total VOCs. The prior event reported 18.3 µg/L total VOCs, with two analytes (cis-1,2-DCE and vinyl chloride) exceeding the AWQS/GV.

MW-11, MW-12 and MW-13 each contained trace concentrations of VOCs, including benzene, chlorobenzene, cis-1,2-DCE, 1,2-dichlorobenzene, and/or TCE. These wells have generally contained no or low-level detections in recent years.

Groundwater collected from MW-14 during the December 2018 sampling event contained 327.7 µg/L total VOCs, with seven analytes (benzene, chlorobenzene, 1,2-dichlorobenzene, ethylbenzene, toluene, m&p-xylenes, and o-xylene) exceeding the AWQS/GV. In September 2017, the groundwater sample contained 202 µg/L total VOCs, with the same seven analytes exceeding the AWQS/GV.

VOC concentrations decreased in MW-15, MW-17 and MW-18 since September 2017. In December 2018, MW-15 contained 1,755 µg/L total VOCs, with four analytes (1,1,1-Trichloroethane, cis-1,2-Dichloroethene, TCE and vinyl chloride) exceeding the AWQS/GV. Groundwater collected from MW-17 during the December 2018 sampling event contained 176,570 µg/L total VOCs, with five analytes (1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, and vinyl chloride) exceeding the AWQS/GV. MW-18 contained 325.8 µg/L total VOCs in 2018, with the same two analytes as 2017 (cis-1,2-DCE and vinyl chloride) exceeding the AWQS/GV.

The total VOC concentration in the sample collected from MW-16 increased between 2017 and 2018, with 2,649 µg/L total VOCs detected. Five analytes (1,1-DCA, 1,1-DCE, cis-1,2-DCE, TCE, and vinyl chloride) exceeded the AWQS/GV.

3.2 Emerging Contaminants

Table 3 presents the laboratory results for 1,4-dioxane and PFAS compounds. Results are compared to the maximum contaminant levels (MCLs) proposed by the New York State Department of Health (NYSDOH), where applicable. Detected concentrations are shown in bold font and exceedances are shaded. **Figure 5** displays the analytical results for emerging contaminants in the wells sampled. The Category B laboratory report and data usability summary report (DUSR) for the emerging contaminants data are provided in **Appendix B**.

Of the five wells tested for 1,4-dioxane, one well, MW-5 and its duplicate sample reported a concentration greater than the 1 µg/L proposed MCL, with 4.0 µg/L detected in both samples. MW-15 contained a trace concentration of the compound at 0.56 µg/L.

Of the five wells sampled for PFAS in December 2018:

- MW-1 contained a total PFAS concentration of 2.5 nanograms per liter (ng/L), with one analyte (Perfluoropentanoic acid [PFPeA]) detected.

- MW-5 contained a concentration of 32 ng/L total PFAS, with detections of five analytes (Perfluorooctanoic acid [PFOA], Perfluorooctanesulfonic acid [PFOS], Perfluorobutanesulfonic acid [PFBS], Perfluorohexanesulfonic acid [PFHxS] and 6:2 Fluorotelomer sulfonic acid [6:2 FTS]). The PFOS concentration in the sample equaled the proposed MCL for the compound. The data validator determined that the precision of the duplicate sample results was unacceptable in comparison to the MW-5 data (refer to the DUSR in **Appendix B**).

- The groundwater sample collected from MW-12 contained 20.4 ng/L total PFAS, with five analytes (PFOA, Perfluorobutanoic acid [PFBA], PFBS, PFHxS and 6:2 FTS) detected.

- MW-15 contained a total PFAS concentration of 115.2 ng/L, with detections of three analytes (PFOA, Perfluorohexanoic acid [PFHxA] and 6:2 FTS).

- MW-18 contained a total PFAS concentration of 155.5 ng/L with nine analytes detected (PFOA, PFOS, PFBA, PFPeA, PFHxA, Perfluoroheptanoic acid [PFHpA], Perfluorononanoic acid [PFNA], PFBS and PFHxS). Both the PFOA and PFOS concentrations in the sample exceeded the proposed MCLs for the compounds.

4.0 Conclusions

The following conclusions are based on the December 2018 groundwater monitoring event and an understanding of overall Site conditions:

- Overall, total dissolved-phase VOC concentrations have decreased in a number of Site monitoring wells when compared to the 2017 sampling event, while concentrations in other wells increased.

- VOCs were detected for the first time in monitoring wells BR-2 and MW-4; however, both contained concentrations below the AWQS/GV for the detected compounds.

- Groundwater samples from the newest monitoring wells (MW-15 through MW-18), installed in the source area in 2013 as part of the injection program, contain the highest reported VOC concentrations at the Site. The December 2018 groundwater monitoring event demonstrated an increase in VOCs in one well (MW-16) and a reduction in the other three wells (MW-15, MW-17 and MW-18) when compared to the 2017 sampling event. Total VOC concentrations were an improvement over pre-injection results in all of these wells; however, groundwater quality remains significantly impacted in this portion of the Site.

- MW-6 continues to exhibit the most elevated concentration of VOCs (659.3 µg/L) among the historical monitoring wells installed during the RI, while MW-17 contains the highest concentration of VOCs (176,570 µg/L) among the newer wells. Concentrations at both wells remain lower than they were prior to the injection effort.

- In December 2018, a subset of on-site monitoring wells was tested for 1,4-dioxane and PFAS, emerging contaminants for which the Site has not previously been assessed. One or more of these compounds were detected in each sample, with 1,4-Dioxane, PFOA, and/or PFOS reported above MCLs proposed by the NYSDOH in MW-5 and MW-18. MW-15 and MW-18 contained the highest total PFAS concentrations. Further investigation is recommended by AECOM at the discretion of the NYSDEC.

- With limited data points, it can be difficult to pinpoint why certain wells show improvement between sampling events and not others. Increases could be related to rebounding after injection substrates become ineffective; mobilization and redistribution of contaminant mass as a result of the injection process; and differences in hydrogeologic and weather conditions between sampling events. Wells installed during the 2013 injection program were intentionally placed in zones of source material and contain groundwater that passes through highly-impacted heterogeneous soil; therefore, some variability would be expected from event to event. Additionally, to some degree, variability in data sets from significantly impacted wells could be affected by differences in sample dilution methods.

- Soil and groundwater contamination persist at the Site at high levels, which demonstrates an overall lack of natural attenuation. Based on the fairly low concentrations of VOCs reported in the GCT system influent since installation, this contaminant mass is not readily migrating. The mass appears to be confined to the source areas, aided by the low permeability of Site soils and the presence of overlying impervious surfaces.

5.0 Planned Activities and Recommendations

Groundwater monitoring should continue in order to document the concentration of VOCs in the groundwater at the Site. The next groundwater sampling event is due to occur in the first quarter of 2020.

Given the exceedances of the proposed NYSDOH MCLs for 1,4-dioxane, PFOA and PFOS in two of the five monitoring wells sampled, the NYSDEC should consider additional evaluation of emerging contaminant concentrations at the Site.

Minor repairs or modifications to the monitoring well network will be addressed during routine OM&M site visits.

Tables

Table 1
Monitoring Well Details and Groundwater Elevations
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Monitoring Well ID	Coordinates		Well Details				December 10-12, 2018	
	NAD83 Northing	NAD83 Easting	Well Diameter & Construction	Installation Date	Top of Casing Elevation	MPE (ft. amsl)	Depth-to-Groundwater (ft. below MPE)	Groundwater Elevation (ft. amsl)
BR-1	1129751.5343	1193769.2041	2" PVC	9/25/2008	434.27	433.98	12.59	421.39
BR-2	1129685.1948	1193884.0210	2" PVC	9/26/2008	432.20	432.05	10.02	422.03
BR-3	1129457.9890	1193502.1229	2" PVC	9/26/2008	439.05	438.74	8.30	430.44
MW-1	1129398.4727	1193649.9991	2" PVC	8/22/1989	438.84	438.75	10.00	428.75
MW-3	1129627.5648	1193796.1151	2" PVC	8/22/1989	433.94	433.85	12.56	421.29
MW-4	1129493.7668	1193811.7344	2" PVC	8/23/1989	430.75	430.49	4.21	426.28
MW-5	1129516.5034	1193697.7638	2" PVC	1/19/1993	432.11	431.54	3.02	428.52
MW-6	1129500.0868	1193720.5677	2" PVC	1/19/1993	432.08	431.96	3.56	428.40
MW-7R	1129455.3624	1193505.7054	2" PVC	6/12/2013	439.25	438.90	10.52	428.38
MW-8	1129279.5278	1193791.3563	2" PVC	2/12/1997	435.38	435.33	7.28	428.05
MW-9	1129465.2940	1193982.8086	2" PVC	8/7/1997	432.86	432.34	7.12	425.22
MW-10	1129513.3190	1194012.1169	2" PVC	8/9/1997	431.34	430.46	5.21	425.25
MW-11	1129555.0950	1193787.0401	2" PVC	4/5/1999	433.78	433.60	10.46	423.14
MW-12	1129747.7725	1193742.2722	2" PVC	4/6/1999	433.71	432.97	11.57	421.40
MW-13	1129665.1895	1193790.4688	2" PVC	8/26/2008	432.60	432.44	8.57	423.87
MW-14	1129671.4939	1193738.0248	2" PVC	8/27/2008	432.87	432.70	11.98	420.72
MW-15	1129597.7784	1193742.3768	2" PVC	6/13/2013	434.06	433.80	10.72	423.08
MW-16	1129617.6417	1193737.8144	2" PVC	6/11/2013	434.90	434.60	7.91	426.69
MW-17	1129467.4712	1193667.7635	2" PVC	6/13/2013	435.16	434.92	6.25	428.67
MW-18	1129486.0719	1193689.0916	2" PVC	6/12/2013	432.50	432.26	3.60	428.66
TR 1	1129632.6114	1193802.5344	8" PVC	1/1/2000	433.85	433.81	NM	NA
TR 2	1129610.0118	1193813.7348	8" PVC	1/1/2000	434.13	434.00	NM	NA
TR 3	1129563.0223	1193837.0730	8" PVC	1/1/2000	434.42	433.60	NM	NA

Notes:
BR - Bedrock Well
MW - Monitoring Well
TR - Trench Well
NAD83 - North American Datum of 1983
MPE - Measuring point elevation; measured at the top of the polyvinyl chloride
ft. - feet
amsl - above mean sea level
NM - Not measured
NA - Not available

Table 2
Groundwater Analytical Results -
Volatile Organic Compounds
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Sample ID		BR-1						BR-2						BR-3						MW-1						
Sampling Date		Oct-08	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	Oct-08	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	Oct-08	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	May-05	Oct-05	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18
Analyte (µg/L)	**AWQS+GV***																									
Acetone	50 (GV)	U	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	U	U	NR	NR	NR	U	NR
Acrolein	5	NR	U	U	U	NR	NR	NR	U	U	U	NR	NR	NR	U	U	U	NR	NR	NR	NR	U	U	U	NR	NR
Acrylonitrile	5	NR	U	U	U	NR	NR	NR	U	U	U	NR	NR	NR	U	U	U	NR	NR	NR	NR	U	U	U	NR	NR
Benzene	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromochloromethane	5	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Bromodichloromethane	50	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
Bromoform	50	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
Bromomethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
2-Butanone	NA	U	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
tert-Butyl Alcohol	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon disulfide	60 (GV)	U	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	U	U	NR	NR	NR	U	NR
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethyl vinyl ether	NA	NR	U	U	U	NR	NR	NR	U	U	U	NR	NR	NR	U	U	U	NR	NR	NR	NR	U	U	U	NR	NR
Chloroform	7	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
Chloromethane	NA	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
Cyclohexane	NA	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	50	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
1,2-Dibromo-3-chloropropane	0.04	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dibromoethane	5	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dichlorobenzene	3	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
1,3-Dichlorobenzene	3	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
1,4-Dichlorobenzene	3	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
Dichlorodifluoromethane	5	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-Dichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	0.37 J	U	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
Diethyl Ether	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,4-Dioxane	NA	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
2-Hexanone	50	U	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
Isopropylbenzene	5	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl Acetate	NA	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylcyclohexane	NA	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone	NA	U	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
Methyl tert-butyl Ether	10	U	NR	NR	NR	U	U	U	NR	NR	NR	U	U	U	NR	NR	NR	U	U	NR	NR	NR	NR	NR	U	U
Styrene	5	U	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
1,1,2,2-Tetrachloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
Tetrachloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
Toluene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2,3-Trichlorobenzene	5	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2,4-Trichlorobenzene	5	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	1.1	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichlorofluoromethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
1,1,2-Trichlorotrifluoroethane	5	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	2	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
m&p-Xylenes	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U
o-Xylene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U

Notes:
All data presented in micrograms per liter (µg/L).
Volatile Organic Compounds (VOCs) analysis by EPA Method 624.
AWQS - New York State Ambient Water Quality Standards (TOGs 1.1.1); GV - guidance value.
U - Analyte included in the analysis, but not detected at or above the Method Detection Limit (MDL).
J - Detected above the MDL but below the Reporting Limit (RL); therefore, result is an estimated concentration.
D - Data reported from a dilution.
NA - No standard or guidance value exists for the analyte.
NR - Not reported.
BOLD font in shaded cell indicates exceedances of AWQS or GV.
Columns separated with a double line indicate pre- and post-sodium injection sampling events.

Table 2
Groundwater Analytical Results -
Volatile Organic Compounds
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Sample ID		MW-3									MW-4							MW-5											
Sampling Date		May-05	Oct-05	Aug-07	Oct-08	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	May-05	Oct-05	Aug-07	Oct-11	Jul-13	Sep-15	Dec-18	May-05	Oct-05	Aug-07	Oct-08	Oct-11	Jul-13	Aug-14	Mar-15	Jun-15	Sep-15	Sep-17	Dec-18
Analyte (µg/L)	**AWQS+GV***																												
Acetone	50 (GV)	5.1 J	**68**	U	U	NR	NR	NR	17.8	NR	U	U	U	NR	NR	NR	NR	U	U	U	U	NR	NR	NR	NR	NR	NR	U	NR
Acrolein	5	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	U	U	U	U	U	U	NR	NR
Acrylonitrile	5	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	U	U	U	U	U	U	NR	NR
Benzene	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromochloromethane	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR
Bromodichloromethane	50	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
Bromoform	50	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
Bromomethane	5	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
2-Butanone	NA	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
tert-Butyl Alcohol	NA	U	U	U	NR	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon disulfide	60 (GV)	U	U	U	U	NR	NR	NR	U	NR	U	U	U	NR	NR	NR	NR	U	U	U	U	NR	NR	NR	NR	NR	NR	U	NR
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethyl vinyl ether	NA	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	U	U	U	U	U	U	NR	NR
Chloroform	7	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
Chloromethane	NA	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
Cyclohexane	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	50	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
1,2-Dibromo-3-chloropropane	0.04	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dibromoethane	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
Dichlorodifluoromethane	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR
1,1-Dichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**8.3**	1 J	U	1.7 J	**4.7 JD**	**17 JD**	**12 JD**	**18 JD**	2.5 J	**7.4 D**	**19**
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	0.59
cis-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	0.29 J	**5.5**	**44**	5	**11**	**10**	U	**510 D**	**240 D**	**410 D**	**41**	**101 D**	**60**
trans-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	0.42 J
1,2-Dichloropropane	1	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
Diethyl Ether	NA	U	U	U	NR	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,4-Dioxane	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	5	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
2-Hexanone	50	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
Isopropylbenzene	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR
Methyl Acetate	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR
Methylcyclohexane	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone	NA	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
Methyl tert-butyl Ether	10	NR	NR	NR	U	NR	NR	NR	U	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	U
Styrene	5	NR	NR	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
1,1,2,2-Tetrachloroethane	5	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
Toluene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2,3-Trichlorobenzene	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR
1,2,4-Trichlorobenzene	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	1.4 J	0.3 J	U	U	U	4.1 JD	U	U	U	U	0.42 J
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	1.2	U	**5.1**	0.3 J	U	2.9 J	**34 D**	U	**8.1 JD**	**23 JD**	**8.2**	**16.2 D**	**9.6**
Trichlorofluoromethane	5	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
1,1,2-Trichlorotrifluoroethane	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	2	U	0.6J	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**3.9 J**	1 J	U	U	**2.2 JD**	**140 D**	**55 D**	**65 D**	**7.6**	**11.2 D**	**21**
m&p-Xylenes	5	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U
o-Xylene	5	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	U	U	U	U	U	U

Notes:
All data presented in micrograms per liter (µg/L).
Volatile Organic Compounds (VOCs) analysis by EPA Method 624.
AWQS - New York State Ambient Water Quality Standards (TOGs 1.1.1); GV - guidance value.
U - Analyte included in the analysis, but not detected at or above the Method Detection Limit (MDL).
J - Detected above the MDL but below the Reporting Limit (RL); therefore, result is an estimated concentration.
D - Data reported from a dilution.
NA - No standard or guidance value exists for the analyte.
NR - Not reported.
BOLD font in shaded cell indicates exceedances of AWQS or GV.
Columns separated with a double line indicate pre- and post-sodium injection sampling events.

Table 2
Groundwater Analytical Results -
Volatile Organic Compounds
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Sample ID		MW-6												MW-7		MW-7R								MW-8							
Sampling Date		May-05	Oct-05	Aug-07	Oct-08	Oct-11	Jul-13	Aug-14	Mar-15	Jun-15	Sep-15	Sep-17	Dec-18	Oct-05	Aug-07	Jul-13	Aug-14	Mar-15	Jun-15	Jun-15	Sep-15	Sep-17	Dec-18	May-05	Oct-05	Aug-07	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18
Analyte (µg/L)	**AWQS+GV***																			Dup											
Acetone	50 (GV)	U	U	U	U	NR	NR	NR	NR	NR	NR	U	NR	U	U	NR	NR	NR	NR	NR	NR	U	NR	U	U	U	NR	NR	NR	U	NR
Acrolein	5	NR	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	NR	NR	U	U	U	NR	NR
Acrylonitrile	5	NR	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	NR	NR	U	U	U	NR	NR
Benzene	1	U	U	0.4 J	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromochloromethane	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Bromodichloromethane	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Bromoform	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Bromomethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
2-Butanone	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR
tert-Butyl Alcohol	NA	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR
Carbon disulfide	60 (GV)	U	U	U	U	NR	NR	NR	NR	NR	NR	U	NR	U	U	NR	NR	NR	NR	NR	NR	U	NR	U	U	U	NR	NR	NR	U	NR
Carbon tetrachloride	5	**25**	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Chloroethane	5	**40**	**36**	**25 JD**	**19**	U	U	U	U	U	U	U	4.3	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethyl vinyl ether	NA	NR	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	NR	U	U	U	U	U	U	NR	NR	NR	NR	NR	U	U	U	NR	NR
Chloroform	7	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Chloromethane	NA	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Cyclohexane	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
1,2-Dibromo-3-chloropropane	0.04	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dibromoethane	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
1,3-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
1,4-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Dichlorodifluoromethane	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-Dichloroethane	5	U	**950 D**	**450 D**	**490 JD**	**370 D**	**520 D**	**390 D**	**370 D**	**420 D**	**300 D**	**272 D**	**170**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	0.6	**0.83 J**	U	0.4 J	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	**44**	**67**	**28 JD**	**33**	**38**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	5	**3,300 D**	**7200 D**	**4100 D**	**4200 D**	**4900 D**	**2,400 D**	**90 D**	**31 D**	**44 JD**	**94 D**	**119 D**	**79**	U	U	3.6 J	U	U	U	U	U	U	U	U	1.2 J	0.8 J	U	U	U	U	U
trans-1,2-Dichloroethene	5	**9.8**	**27**	**15**	**28**	**29**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropane	1	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Diethyl Ether	NA	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR
1,4-Dioxane	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
2-Hexanone	50	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR
Isopropylbenzene	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl Acetate	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylcyclohexane	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	5	U	U	0.3 J	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone	NA	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR
Methyl tert-butyl Ether	10	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	U	NR	NR	NR	NR	NR	NR	NR	NR	U	U	NR	NR	NR	NR	NR	NR	U	U
Styrene	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR
1,1,2,2-Tetrachloroethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Tetrachloroethene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Toluene	5	0.93 J	1.6 J	0.5 J	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2,3-Trichlorobenzene	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2,4-Trichlorobenzene	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,1-Trichloroethane	5	**170 JD**	**250 D**	**82 D**	**37**	**15**	**84 JD**	**43 JD**	**33 D**	**34 JD**	**42 D**	**24.4 D**	**16**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	**1.7 J**	0.6 J	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	**360 JD**	**640 D**	**210 D**	**120**	**130**	U	U	U	U	U	3 JD	U	U	U	**6.6**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichlorofluoromethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
1,1,2-Trichlorotrifluoroethane	5	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	2	**190 JD**	**360D**	**240 D**	**710 D**	**600 D**	**520 D**	**910 D**	**230 D**	**790 D**	**800 D**	**480 D**	**390**	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
m&p-Xylenes	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
o-Xylene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U

Notes:
All data presented in micrograms per liter (µg/L).
Volatile Organic Compounds (VOCs) analysis by EPA Method 624.
AWQS - New York State Ambient Water Quality Standards (TOGs 1.1.1); GV - guidance value.
U - Analyte included in the analysis, but not detected at or above the Method Detection Limit (MDL).
J - Detected above the MDL but below the Reporting Limit (RL); therefore, result is an estimated concentration.
D - Data reported from a dilution.
NA - No standard or guidance value exists for the analyte.
NR - Not reported.
BOLD font in shaded cell indicates exceedances of AWQS or GV.
Columns separated with a double line indicate pre- and post-sodium injection sampling events.

Table 2
Groundwater Analytical Results -
Volatile Organic Compounds
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Sample ID		MW-9													MW-10								MW-11							
Sampling Date		May-05	Oct-05	Aug-07	Oct-11	Jul-13	Aug-14	Aug-14	Mar-15	Mar-15	Jun-15	Sep-15	Sep-17	Dec-18	May-05	Oct-05	Aug-07	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	May-05	Oct-05	Aug-07	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18
Analyte (µg/L)	**AWQS+GV***							Dup		Dup																				
Acetone	50 (GV)	U	U	U	NR	NR	NR	NR	NR	NR	NR	NR	3.3 J	NR	U	U	U	NR	NR	NR	U	NR	U	U	U	NR	NR	NR	U	NR
Acrolein	5	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	U	U	U	NR	NR
Acrylonitrile	5	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	U	U	U	NR	NR
Benzene	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromochloromethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Bromodichloromethane	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Bromoform	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Bromomethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
2-Butanone	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR
tert-Butyl Alcohol	NA	19	U	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR
Carbon disulfide	60 (GV)	U	U	U	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	U	U	U	NR	NR	NR	U	NR	0.3 J	U	U	NR	NR	NR	U	NR
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethyl vinyl ether	NA	NR	NR	NR	U	U	U	U	U	U	U	U	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR	U	U	U	NR	NR
Chloroform	7	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Chloromethane	NA	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Cyclohexane	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
1,2-Dibromo-3-chloropropane	0.04	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dibromoethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
1,3-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
1,4-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Dichlorodifluoromethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-Dichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	0.3 J	0.3 J	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	5	**32**	**34 D**	**21 D**	**34**	**16**	**18**	**18**	3.1 J	2.9 J	**24**	**7.5**	**7**	**13**	0.78 J	U	U	U	U	U	U	U	0.3 J	U	0.4 J	U	U	U	U	0.46 J
trans-1,2-Dichloroethene	5	4	3.1	**8.8**	3.3 J	U	1.3 J	1.1 J	U	U	1.6 J	U	0.8 J	0.88	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropane	1	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Diethyl Ether	NA	U	U	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	NR	NR
1,4-Dioxane	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
2-Hexanone	50	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR
Isopropylbenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl Acetate	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylcyclohexane	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	5	U	0.4 J	0.3 J	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR
Methyl tert-butyl Ether	10	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	U	NR	NR	NR	NR	NR	NR	U	U	NR	NR	NR	NR	NR	NR	U	U
Styrene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	U	NR
1,1,2,2-Tetrachloroethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Tetrachloroethene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
Toluene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2,3-Trichlorobenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2,4-Trichlorobenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	**6.6**	2.2	**7**	**21**	**82**	**14**	**14**	2.8 J	3 J	**28**	2 J	3.4	**58**	U	U	U	U	U	U	U	U	1.4	1.3	0.9 J	0.97 J	1.5 J	U	1.4	1.9
Trichlorofluoromethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
1,1,2-Trichlorotrifluoroethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	2	**10**	**15**	**8.5**	**4.8 J**	1.4 J	**8.4**	**9.2**	1.5 J	1.4 J	**3.2 J**	**3.6 J**	**3.8**	2.0	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
m&p-Xylenes	5	NR	NR	NR	U	U	U	U	NR	NR	NR	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U
o-Xylene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	NR	NR	NR	U	U	U	U	U	NR	NR	NR	U	U	U	U	U

Notes:
All data presented in micrograms per liter (µg/L).
Volatile Organic Compounds (VOCs) analysis by EPA Method 624.
AWQS - New York State Ambient Water Quality Standards (TOGs 1.1.1); GV - guidance value.
U - Analyte included in the analysis, but not detected at or above the Method Detection Limit (MDL).
J - Detected above the MDL but below the Reporting Limit (RL); therefore, result is an estimated concentration.
D - Data reported from a dilution.
NA - No standard or guidance value exists for the analyte.
NR - Not reported.
BOLD font in shaded cell indicates exceedances of AWQS or GV.
Columns separated with a double line indicate pre- and post-sodium injection sampling events.

Table 2
Groundwater Analytical Results -
Volatile Organic Compounds
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Sample ID		MW-12								MW-13						MW-14						MW-15						
Sampling Date		May-05	Oct-05	Aug-07	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	Oct-08	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	Oct-08	Oct-11	Jul-13	Sep-15	Sep-17	Dec-18	Jul-13	Aug-14	Mar-15	Jun-15	Sep-15	Sep-17	Dec-18
Analyte (µg/L)	**AWQS+GV***																											
Acetone	50 (GV)	U	U	5.7	NR	NR	NR	U	NR	U	NR	NR	NR	1.6 J	NR	21	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
Acrolein	5	NR	NR	NR	U	U	U	NR	NR	NR	U	U	U	NR	NR	NR	U	U	U	NR	NR	U	U	U	U	U	NR	NR
Acrylonitrile	5	NR	NR	NR	U	U	U	NR	NR	NR	U	U	U	NR	NR	NR	U	U	U	NR	NR	U	U	U	U	U	NR	NR
Benzene	1	0.8 J	1.0	1.0	**1.1 J**	U	U	0.9 J	1.0	U	0.61 J	U	U	U	U	**7.5**	**6.6**	**8**	**2 J**	**6.2 D**	**12**	U	U	U	U	U	U	U
Bromochloromethane	5	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Bromodichloromethane	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	ND	U	U	U	U	U	U	U	U	U	U	U	U
Bromomethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Butanone	NA	NR	NR	NR	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
tert-Butyl Alcohol	NA	16	U	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon disulfide	60 (GV)	U	U	U	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	U	NR	NR	NR	3.6 JD	NR	NR	NR	NR	NR	NR	U	NR
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	NR	NR	NR	U	U	U	U	U	U	1.7 J	U	U	0.5 J	0.29 J	U	3.2 J	**13**	U	**6 D**	**6.7 J**	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethyl vinyl ether	NA	NR	NR	NR	U	U	U	NR	NR	NR	U	U	U	NR	NR	NR	U	U	U	NR	NR	U	U	U	U	U	NR	NR
Chloroform	7	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	0.3 J	U
Chloromethane	NA	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Cyclohexane	NA	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	50	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dibromo-3-chloropropane	0.04	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dibromoethane	5	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	2.7 J	U	2 J	1.1	0.45 J	**6.1**	**4.1 J**	**7**	1.4 J	**6.4 D**	**11**	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	3	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Dichlorodifluoromethane	5	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-Dichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**12.9**	4.4
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**40 J**	**20.8**	4.8
cis-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**5,900 D**	**3,100 D**	**2,300 D**	**1,200 D**	**4,400 D**	**1,640 D**	**480**
trans-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**19.2**	3.5
1,2-Dichloropropane	1	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Diethyl Ether	NA	4.1	5.6	5.2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,4-Dioxane	NA	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	**22**	**16**	**21**	4.4 J	**12.2 D**	**25**	U	U	U	U	U	U	U
2-Hexanone	50	NR	NR	NR	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
Isopropylbenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	**13**	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl Acetate	NA	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	22	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylcyclohexane	NA	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	5	U	0.5 JB	0.3 J	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone	NA	NR	NR	NR	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
Methyl tert-butyl Ether	10	NR	NR	NR	NR	NR	NR	U	U	U	NR	NR	NR	U	U	U	NR	NR	NR	U	U	NR	NR	NR	NR	NR	U	U
Styrene	5	NR	NR	NR	NR	NR	NR	U	NR	U	NR	NR	NR	U	NR	ND	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
1,1,2,2-Tetrachloroethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	0.8 J	U
Toluene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**17**	**9.8**	**14**	2.2 J	**6 D**	**13**	U	U	U	U	U	U	U
1,2,3-Trichlorobenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2,4-Trichlorobenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NR	U	3.8	**5.8**	
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**6,800 D**	**5,500 D**	**4,600 D**	**2,800 D**	**7,300 D**	**5,090 D**	**1,200**
Trichlorofluoromethane	5	NR	NR	NR	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichlorotrifluoroethane	5	NR	NR	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	2	1	0.5J	0.3 J	0.59 J	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	**210 D**	**140 JD**	**72 JD**	U	**230 JD**	**139 D**	**56**
m&p-Xylenes	5	NR	NR	NR	U	U	U	U	U	U	3.2 J	U	U	U	U	**110**	**110**	**130**	**32**	**102 D**	**160**	U	U	U	U	U	U	U
o-Xylene	5	NR	NR	NR	U	U	U	U	U	U	0.95 J	U	U	U	U	**87**	**68**	**51**	**18**	**59.6 D**	**100**	U	U	U	U	U	U	U

Notes:
All data presented in micrograms per liter (µg/L).
Volatile Organic Compounds (VOCs) analysis by EPA Method 624.
AWQS - New York State Ambient Water Quality Standards (TOGs 1.1.1); GV - guidance value.
U - Analyte included in the analysis, but not detected at or above the Method Detection Limit (MDL).
J - Detected above the MDL but below the Reporting Limit (RL); therefore, result is an estimated concentration.
D - Data reported from a dilution.
NA - No standard or guidance value exists for the analyte.
NR - Not reported.
BOLD font in shaded cell indicates exceedances of AWQS or GV.
Columns separated with a double line indicate pre- and post-sodium injection sampling events.

Table 2
Groundwater Analytical Results -
Volatile Organic Compounds
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Sample ID		MW-16							MW-17							MW-18						
Sampling Date		Jul-13	Aug-14	Mar-15	Jun-15	Sep-15	Sep-17	Dec-18	Jul-13	Aug-14	Mar-15	Jun-15	Sep-15	Sep-17	Dec-18	Jul-13	Aug-14	Mar-15	Jun-15	Sep-15	Sep-17	Dec-18
Analyte (µg/L)	**AWQS+GV***																					
Acetone	50 (GV)	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
Acrolein	5	U	U	U	U	U	NR	NR	U	U	U	U	U	NR	NR	U	U	U	U	U	NR	NR
Acrylonitrile	5	U	U	U	U	U	NR	NR	U	U	U	U	U	NR	NR	U	U	U	U	U	NR	NR
Benzene	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromochloromethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Bromodichloromethane	50	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	50	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Bromomethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Butanone	NA	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
tert-Butyl Alcohol	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Carbon disulfide	60 (GV)	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
Carbon tetrachloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chlorobenzene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloroethyl vinyl ether	NA	U	U	U	U	U	NR	NR	U	U	U	U	U	NR	NR	U	U	U	U	U	NR	NR
Chloroform	7	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Chloromethane	NA	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Cyclohexane	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Dibromochloromethane	50	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dibromo-3-chloropropane	0.04	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dibromoethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2-Dichlorobenzene	3	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	3	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	3	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Dichlorodifluoromethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1-Dichloroethane	5	U	U	**12 JD**	**9.1 JD**	U	**6.6 JD**	**7.9 J**	U	**26,000 D**	U	U	U	U	U	U	U	U	U	U	4 JD	3.1
1,2-Dichloroethane	0.6	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5	U	U	U	**6.4 JD**	**13 JD**	U	**11**	U	U	U	**430 JD**	U	**830 D**	**620**	U	U	U	U	**8 JD**	U	0.90
cis-1,2-Dichloroethene	5	**3,000 D**	**4,300 D**	**1,500 D**	**1,300 D**	**2,200 D**	**430 D**	**1,400**	**120,000 D**	**100,000 D**	**64,000 D**	**72,000 D**	**70,000 D**	**115,000 D**	**85,000**	**7,700 D**	**2,700 D**	**3,800 D**	**5,700 D**	**1,600 D**	**118 D**	**150**
trans-1,2-Dichloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	**235 JD**	**150 J**	U	**16 JD**	U	**37 JD**	**12 JD**	U	1.2
1,2-Dichloropropane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,3-Dichloropropene	0.4	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Diethyl Ether	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,4-Dioxane	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ethylbenzene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Hexanone	50	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
Isopropylbenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methyl Acetate	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylcyclohexane	NA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Methylene chloride	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-pentanone	NA	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
Methyl tert-butyl Ether	10	NR	NR	NR	NR	NR	U	U	NR	NR	NR	NR	NR	U	U	NR	NR	NR	NR	NR	U	U
Styrene	5	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR	NR	NR	NR	NR	NR	U	NR
1,1,2,2-Tetrachloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Toluene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,2,3-Trichlorobenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,2,4-Trichlorobenzene	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1,1,1-Trichloroethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	5	**1,200 D**	**32 JD**	**100 D**	**65 D**	**980 D**	**213 D**	**1,100**	**130,000 D**	**50,000 D**	**34,000 D**	**43,000 D**	**47,000 D**	**96,700 D**	**88,000**	**790 D**	U	U	U	U	U	0.55
Trichlorofluoromethane	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichlorotrifluoroethane	5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	2	**130 D**	**190 JD**	**490 D**	**340 D**	**330 D**	**179 D**	**130**	**3,300 JD**	**1,800 JD**	**2,500 JD**	**2,800 JD**	**2,300 JD**	**5,030 D**	**2,800**	**790 D**	**400 D**	**2,900 D**	**3,300 D**	**1,400 D**	**277 D**	**170**
m&p-Xylenes	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
o-Xylene	5	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U

Notes:
All data presented in micrograms per liter (µg/L).
Volatile Organic Compounds (VOCs) analysis by EPA Method 624.
AWQS - New York State Ambient Water Quality Standards (TOGs 1.1.1); GV - guidance value.
U - Analyte included in the analysis, but not detected at or above the Method Detection Limit (MDL).
J - Detected above the MDL but below the Reporting Limit (RL); therefore, result is an estimated concentration.
D - Data reported from a dilution.
NA - No standard or guidance value exists for the analyte.
NR - Not reported.
BOLD font in shaded cell indicates exceedances of AWQS or GV.
Columns separated with a double line indicate pre- and post-sodium injection sampling events.

Table 3
Groundwater Analytical Results – Emerging Contaminants
Northeast Alloys and Metals Site
Site No. 633045
Utica, New York

Analyte	NYSDOH Proposed MCL[1]	Monitoring Well/Sample ID							
		MW-15	MW-5	DUP (MW-5)	MW-18	MW-12	MW-1	Field Blank	Equipment Blank
		12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018	12/12/2018
Semivolatile Organic Compounds (µg/L)									
1,4-Dioxane	1	**0.56**	**4.0**	**4.0**	ND	ND	ND	NS	NS
Fluorinated Alkyl Substances (ng/L)									
Perfluorooctanoic acid (PFOA)	10	**2.6**	**9.6 J**	**94 J**	**79**	**3.1**	ND	ND	ND
Perfluorooctanesulfonic acid (PFOS)	10	ND	**10 J**	**21 J**	**20**	ND	ND	ND	ND
Perfluorobutanoic acid (PFBA)	--	ND	ND	**12 J**	**2.9**	**3.3**	ND	ND	ND
Perfluoropentanoic acid (PFPeA)	--	ND	ND	**47 J**	**9.8 J**	ND	**2.5 J**	ND	ND
Perfluorohexanoic acid (PFHxA)	--	**2.6**	ND	**45 J**	**11**	ND	ND	ND	ND
Perfluoroheptanoic acid (PFHpA)	--	ND	ND	**18 J**	**12**	ND	ND	ND	ND
Perfluorononanoic acid (PFNA)	--	ND	ND	**4.1 J**	**4.4 J**	ND	ND	ND	ND
Perfluorodecanoic acid (PFDA)	--	ND	ND	ND	ND	ND	ND	ND	ND
Perfluoroundecanoic acid (PFUnA)	--	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorododecanoic acid (PFDoA)	--	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotridecanoic acid (PFTriA)	--	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorotetradecanoic acid (PFTeA)	--	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorobutanesulfonic acid (PFBS)	--	ND	**3.1 J**	**13 J**	**11**	**3.6**	ND	ND	ND
Perfluorohexanesulfonic acid (PFHxS)	--	ND	**2.7 J**	**10 J**	**5.4**	**4.8**	ND	ND	ND
Perfluoroheptanesulfonic acid (PFHpS)	--	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorodecanesulfonic acid (PFDS)	--	ND	ND	ND	ND	ND	ND	ND	ND
Perfluorooctane sulfonamide (FOSA)	--	ND	ND	ND	ND	ND	ND	ND	ND
N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	--	ND	ND	ND	ND	ND	ND	ND	ND
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	--	ND	ND	ND	ND	ND	ND	ND	ND
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	--	**110**	**6.6 J**	ND	ND	**5.6**	ND	ND	ND
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	--	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

[1] New York State Department of Health (NYSDOH) Proposed Maximum Contaminant Level (MCL)

µg/L - micrograms per liter

ng/L - nanograms per liter

ND - Not detected at the reporting limit

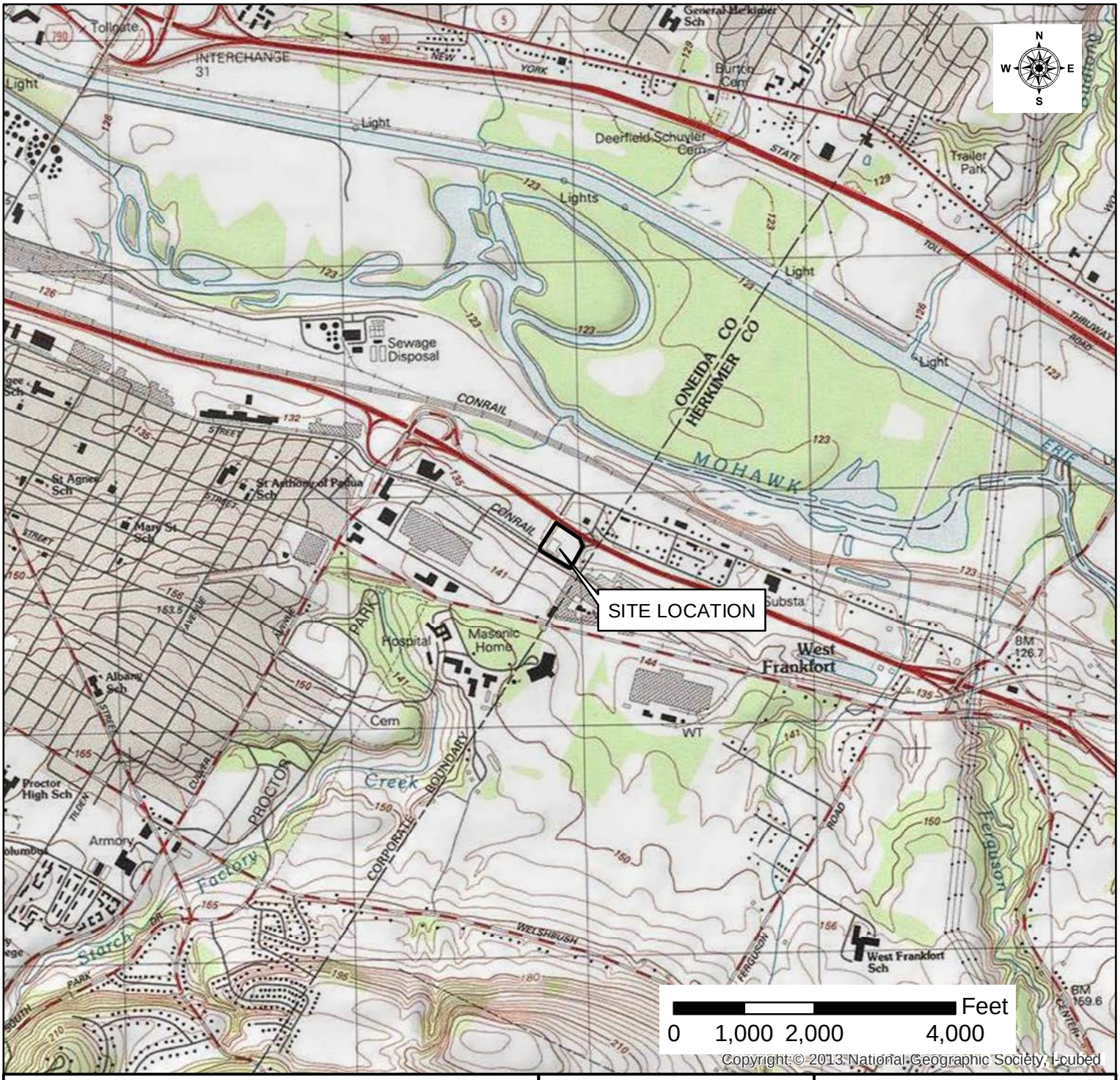
NS - Not sampled

Detected concentrations are in bold font

Results greater than or equal to the NYSDOH Proposed MCL are shaded in gray

J - The analyte is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample

Figures





Source: ArcGIS USA Topo Maps

AECOM

40 British American Blvd.
Latham, NY 12110
T: (518) 951-2200
F: (518) 951-2300

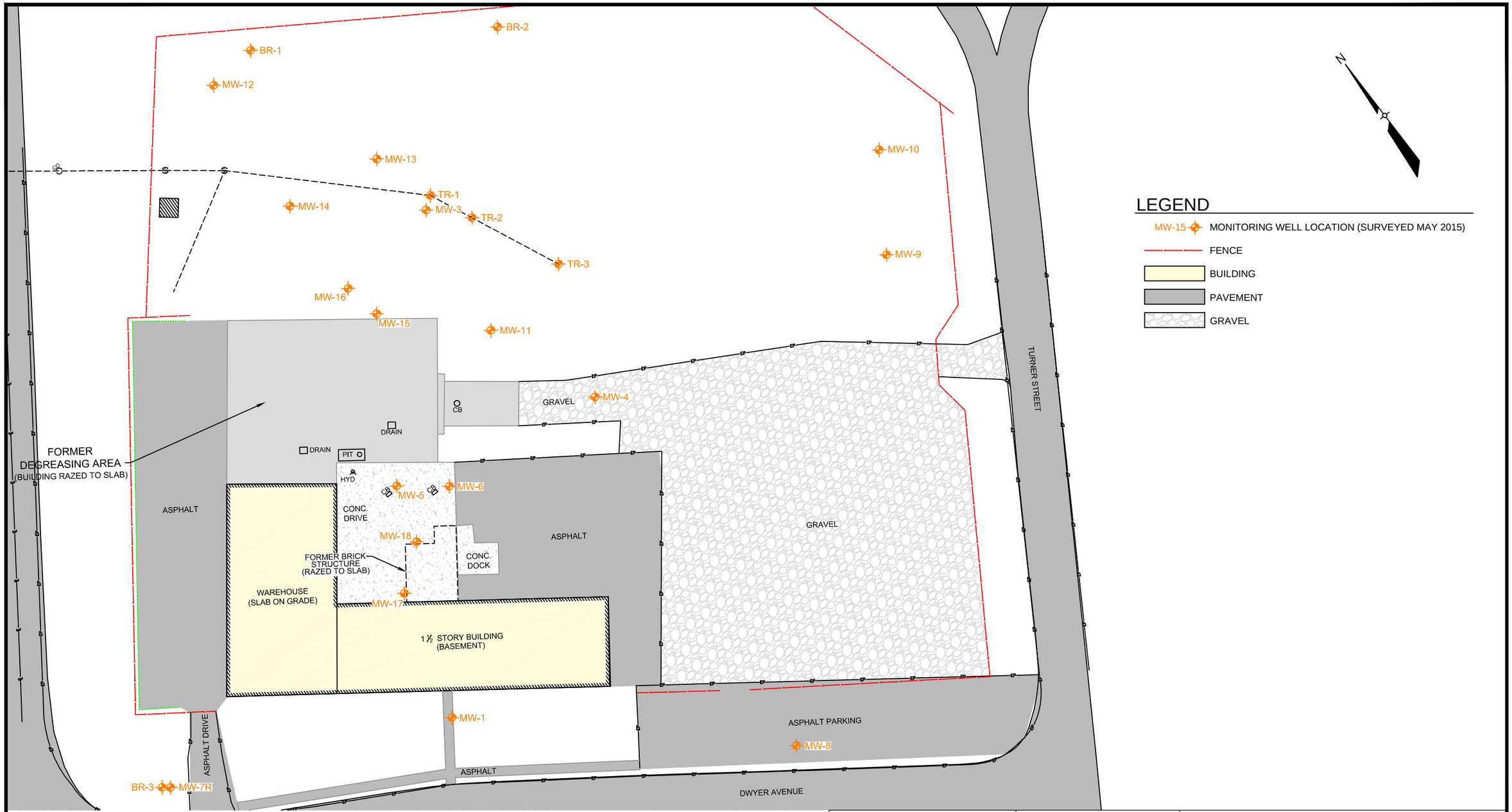
FIGURE 1

SITE LOCATION MAP

NORTHEAST ALLOYS AND METALS SITE
2145 DWYER AVENUE
UTICA, NEW YORK

DECEMBER 2018

60284002



PLAN

0 25 50

SCALE (FEET)

PROJ. NO:	60284002
DATE:	05/16/2019
DRAWN:	MS
APPROVED:	LMM

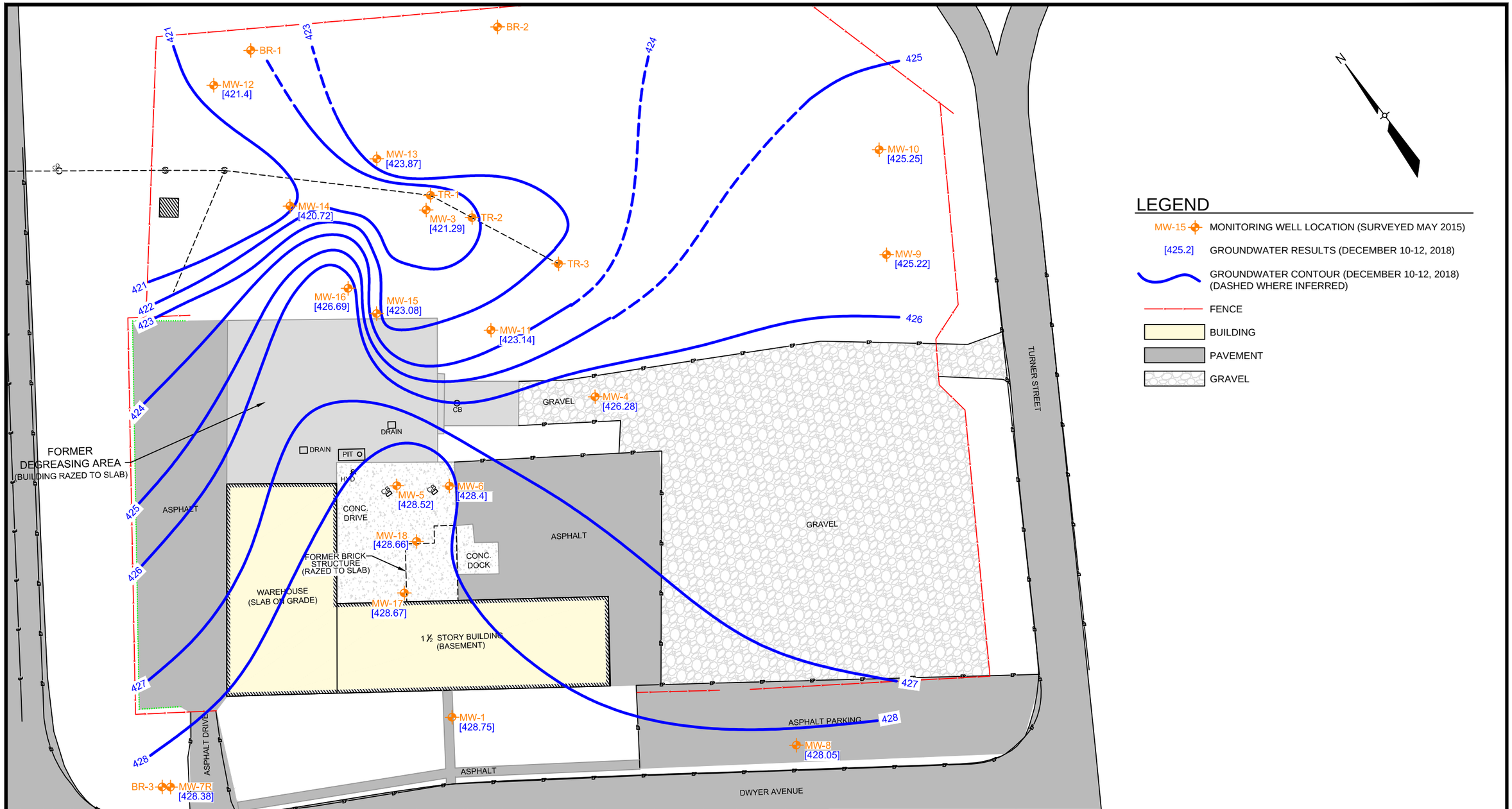
SHEET TITLE: SITE PLAN AND MONITORING WELL LOCATIONS

PROJECT:
NORTHEAST ALLOYS AND METALS SITE
NYSDEC SITE 633045
CITY OF UTICA
ONEIDA COUNTY, NEW YORK

Drawing Reference:
1) Drawing based on Bryant Associates Engineers • Surveyors • Construction Managers, 108 W. Jefferson St., Suite 400, Syracuse, NY; 2014.
2) A field survey performed by Earthtech/AECOM, October 7, 2008.
3) Surveyed Well Locations performed by AECOM, May 2015.

FIGURE 2

L:\Group\earth\Latham NY Work\NE Alloys\60135721_027 Site Plan_Dec2018.dwg, 5/16/2019 2:02:03 PM, Splawnm



LEGEND

- MW-15 — MONITORING WELL LOCATION (SURVEYED MAY 2015)
- [425.2] — GROUNDWATER RESULTS (DECEMBER 10-12, 2018)
- GROUNDWATER CONTOUR (DECEMBER 10-12, 2018) (DASHED WHERE INFERRED)
- FENCE
- BUILDING
- PAVEMENT
- GRAVEL

PLAN

0 25 50

SCALE (FEET)

PROJ. NO:	60284002.2
DATE:	05/16/2019
DRAWN:	MS
APPROVED:	LMM

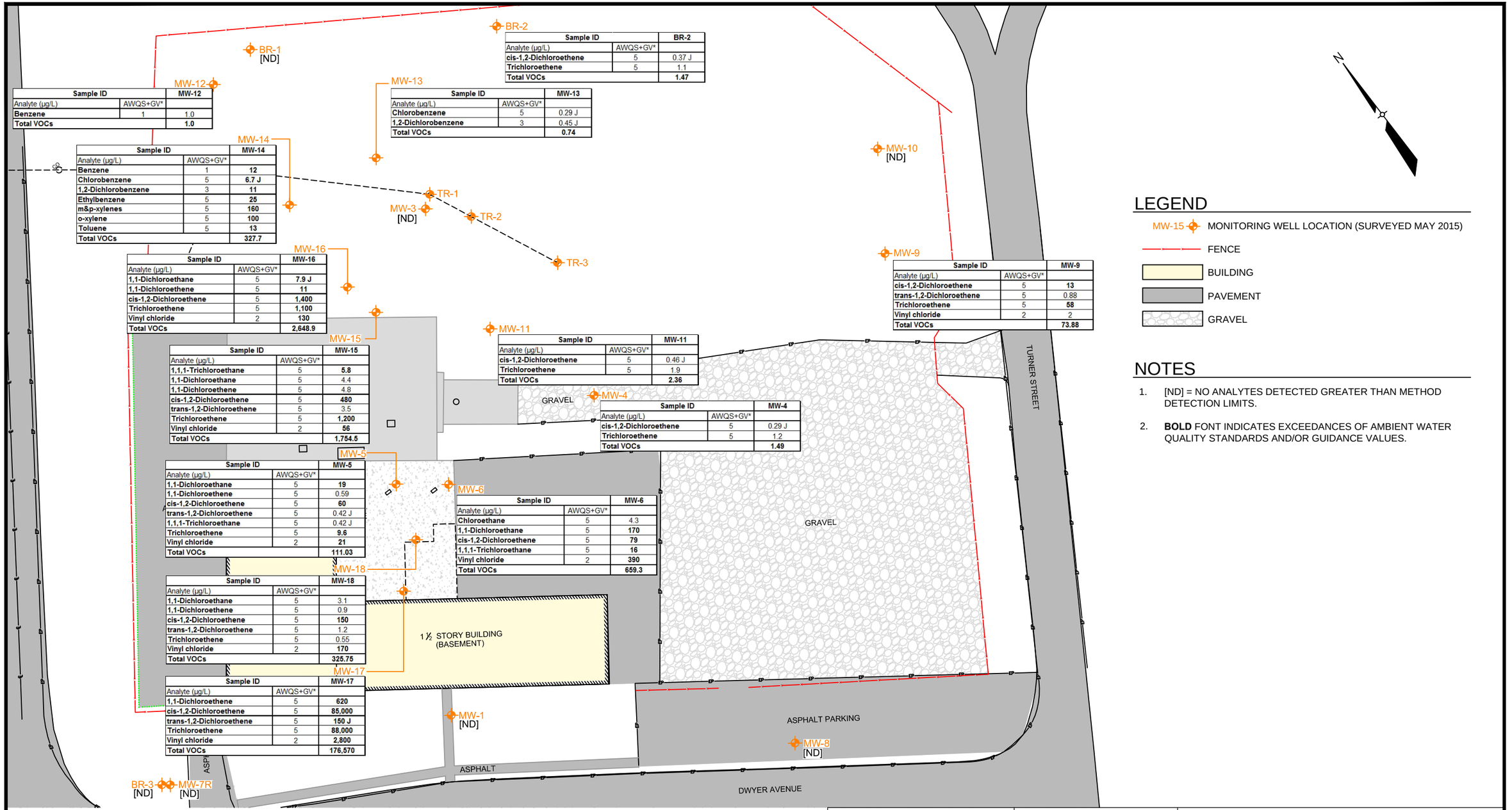
SHEET TITLE: SHALLOW MONITORING WELL GROUNDWATER CONTOUR MAP DECEMBER 10-12, 2018

PROJECT:
NORTHEAST ALLOYS AND METALS SITE
NYSDEC SITE 633045
CITY OF UTICA
ONEIDA COUNTY, NEW YORK

Drawing Reference:
1) Drawing based on Bryant Associates Engineers • Surveyors • Construction Managers, 108 W. Jefferson St., Suite 400, Syracuse, NY; 2014.
2) A field survey performed by Earthtech/AECOM, October 7, 2008.
3) Surveyed Well Locations performed by AECOM, May 2015.

FIGURE 3

L:\Group\earth\Latham NY Work\NE Alloys\60135721_025 Shallow MW GW Contour Map_Dec2018_Rev1.dwg, 8/8/2019 3:10:06 PM, Splawnm



LEGEND

- MW-15 — MONITORING WELL LOCATION (SURVEYED MAY 2015)
- FENCE
- BUILDING
- PAVEMENT
- GRAVEL

NOTES

1. [ND] = NO ANALYTES DETECTED GREATER THAN METHOD DETECTION LIMITS.
2. **BOLD** FONT INDICATES EXCEEDANCES OF AMBIENT WATER QUALITY STANDARDS AND/OR GUIDANCE VALUES.

PLAN

0 25 50

SCALE (FEET)

PROJ. NO:	60284002
DATE:	05/16/2019
DRAWN:	MS
APPROVED:	LMM

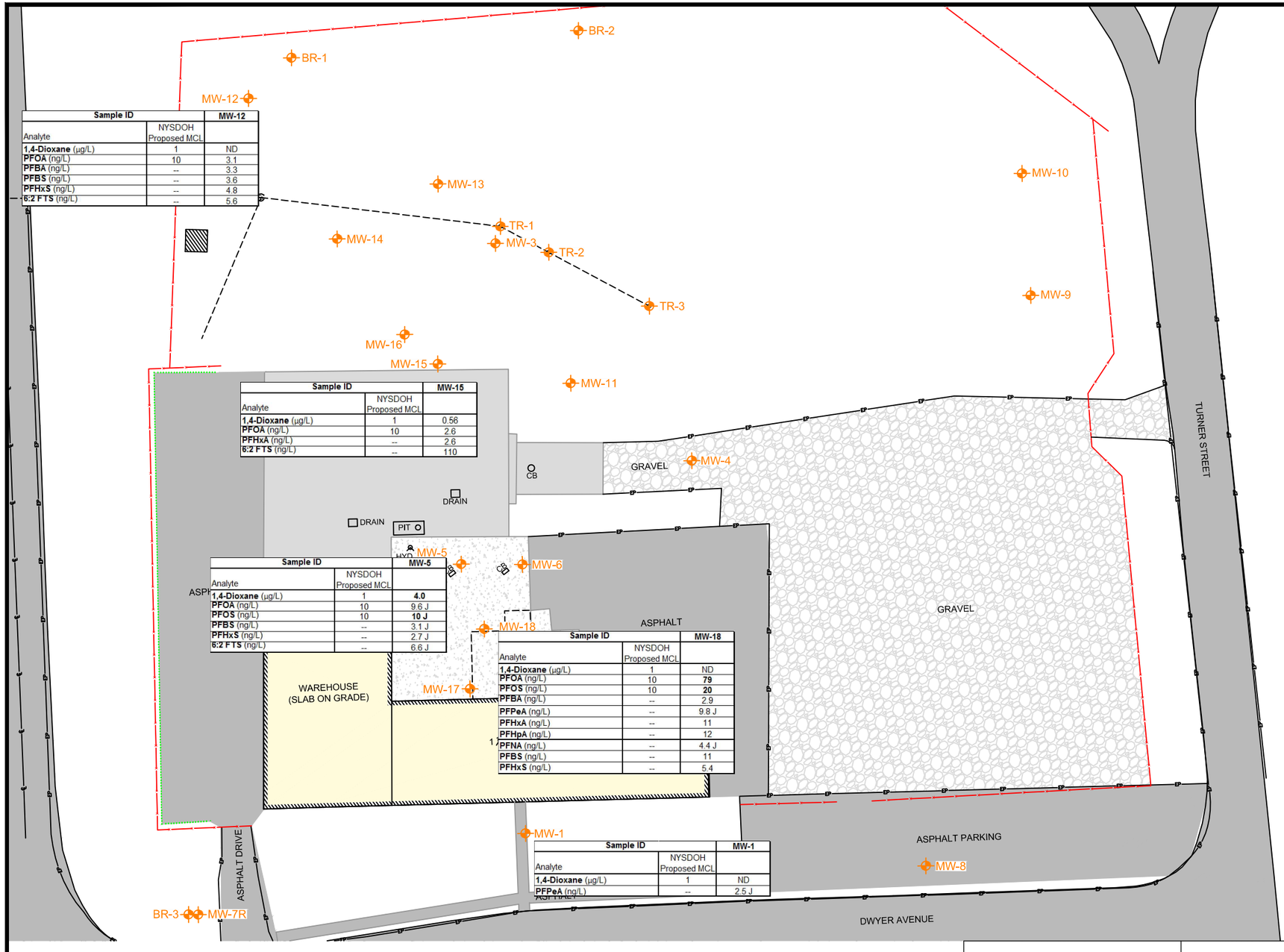
SHEET TITLE: TOTAL VOCs IN GROUNDWATER
DECEMBER 10-12, 2018

PROJECT:
NORTHEAST ALLOYS AND METALS SITE
NYSDEC SITE 633045
CITY OF UTICA
ONEIDA COUNTY, NEW YORK

Drawing Reference:
1) Drawing based on Bryant Associates Engineers • Surveyors • Construction Managers, 108 W. Jefferson St., Suite 400, Syracuse, NY; 2014.
2) A field survey performed by Earthtech/AECOM, October 7, 2008.
3) Surveyed Well Locations performed by AECOM, May 2015.

FIGURE 4

L:\Group\earth\Latham NY Work\NE Alloys\60135721_026 Total VOCs in GW_Dec2018.dwg, 8/8/2019 3:16:52 PM, Splawnm



Sample ID		MW-12
Analyte	NYSDOH Proposed MCL	
1,4-Dioxane (µg/L)	1	ND
PFOA (ng/L)	10	3.1
PFBA (ng/L)	--	3.3
PFBS (ng/L)	--	3.6
PFHxS (ng/L)	--	4.8
6:2 FTS (ng/L)	--	5.6

Sample ID		MW-15
Analyte	NYSDOH Proposed MCL	
1,4-Dioxane (µg/L)	1	0.56
PFOA (ng/L)	10	2.6
PFHxA (ng/L)	--	2.6
6:2 FTS (ng/L)	--	110

Sample ID		MW-5
Analyte	NYSDOH Proposed MCL	
1,4-Dioxane (µg/L)	1	**4.0**
PFOA (ng/L)	10	9.6 J
PFOS (ng/L)	10	**10 J**
PFBS (ng/L)	--	3.1 J
PFHxS (ng/L)	--	2.7 J
6:2 FTS (ng/L)	--	6.6 J

Sample ID		MW-18
Analyte	NYSDOH Proposed MCL	
1,4-Dioxane (µg/L)	1	ND
PFOA (ng/L)	10	**79**
PFOS (ng/L)	10	**20**
PFBA (ng/L)	--	2.9
PFPeA (ng/L)	--	9.8 J
PFHxA (ng/L)	--	11
PFHpA (ng/L)	--	12
PFNA (ng/L)	--	4.4 J
PFBS (ng/L)	--	11
PFHxS (ng/L)	--	5.4

Sample ID		MW-1
Analyte	NYSDOH Proposed MCL	
1,4-Dioxane (µg/L)	1	ND
PFPeA (ng/L)	--	2.5 J

LEGEND

- MW-15 — MONITORING WELL LOCATION (SURVEYED MAY 2015)
- FENCE
- BUILDING
- PAVEMENT
- GRAVEL

NOTES

1. BOLD FONT INDICATES EXCEEDANCE OF NYSDOH PROPOSED MAXIMUM CONTAMINANT LEVEL.
2. ND - NOT DETECTED
3. µg/L - MICROGRAMS PER LITER
4. ng/L - NANOGRAMS PER LITER
5. J - THE ANALYTE IS AN ESTIMATED QUANTITY.

PLAN

0 25 50

SCALE (FEET)

PROJ. NO:	60284002
DATE:	08/08/2019
DRAWN:	MS
APPROVED:	LMM

SHEET TITLE: EMERGING CONTAMINANTS IN GROUNDWATER - DECEMBER 12, 2018

PROJECT:
NORTHEAST ALLOYS AND METALS SITE
NYSDEC SITE 633045
CITY OF UTICA
ONEIDA COUNTY, NEW YORK

Drawing Reference:
1) Drawing based on Bryant Associates Engineers • Surveyors • Construction Managers, 108 W. Jefferson St., Suite 400, Syracuse, NY; 2014.
2) A field survey performed by Earthtech/AECOM, October 7, 2008.
3) Surveyed Well Locations performed by AECOM, May 2015.

FIGURE 5

L:\Group\earth\Latham NY Work\NE Alloys\60135721_028 Emerging Contaminants in GW_Dec2018.dwg, 8/8/2019 3:28:12 PM, Splawnm

Appendix A

Monitoring Well Purging/Sampling Forms

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: BR-1 Date: December 10, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: BR1 121018 QA/QC Collected? ✓

Purging / Sampling Method: Typhoon Pump / (Hand Bailer) / Peri-pump

1. L = Well Depth:	17.57	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	12.59	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	0.81	gal
6. 3(V) = Target Purge Volume	2.43	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings						
Time	24 hr	09:17	09:22	0926	0929			
Water Level (0.33)	feet	12.59	12.72	12.92	13.10			
Volume Purged	gal	0	~~0.81~~*	1.62	2.43			
Flow Rate	mL/min	—	—	—	—			
Turbidity (+/- 10%)	NTU	14.5	18.4	14.9	14.9			
Dissolved Oxygen (+/- 10%)	%	-9.8	-15.5	-12.5	-12.0			
Dissolved Oxygen (+/- 10%)	mg/L	-6.4	-10.3	-8.24	-8.0			
Eh / ORP (+/- 10)	MeV	261.3	246.9	130.6	136.8			
Specific Conductivity (+/- 3%)	mS/cm[c]	—	—	—	—			
Conductivity (+/- 3%)	mS/cm	0.439	0.410	.406	.397			
pH (+/- 0.1)	pH unit	4.15	8.94	8.96	6.99			
Temp (+/- 0.5)	C°	9.9	9.9	9.99	9.9			
Color	Visual	clear	clear	clear	clear			
Odor	Olfactory	—	—	—	—			

Comments:

*0.81

Sample Time : 0930

12.5.4
22

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: BE-2 Date: December 10, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: BE-2N018 QA/QC Collected? —

Purging / Sampling Method: (Typhoon Pump) / Hand Bailer / Peri-pump

1. L = Well Depth:	44.03	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	10.02	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	5.55	gal
6. 3(V) = Target Purge Volume	16.65	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings						
Time	24 hr	0950	0959	1010	1015			
Water Level (0.33)	feet	10.02	19.89	25.04	23.95			
Volume Purged	gal	0	5.55	11.10	16.65			
Flow Rate	mL/min	250	280	250	250			
Turbidity (+/- 10%)	NTU	1156	1597	1042	719			
Dissolved Oxygen (+/- 10%)	%	-10.0	-4.4	-4.8	-11.3			
Dissolved Oxygen (+/- 10%)	mg/L	-5.94	-2.69	-2.89	-6.69			
Eh / ORP (+/- 10)	MeV	80.7	-56.9	-55.7	-55.9			
Specific Conductivity (+/- 3%)	mS/cm^c	-3.84	-3.56	-3.71	-3.73			
Conductivity (+/- 3%)	mS/cm	1.138	1.053	1.098	1.070			
pH (+/- 0.1)	pH unit	4.74	7.68	7.64	9.64			
Temp (+/- 0.5)	C°	9.99	9.99	9.99	9.99			
Color	Visual	black	black	black	black			
Odor	Olfactory	sulfur	"	"	" "			

Comments:

Sample Time : 1020

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-14 3 Date: December 10, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-14 3 121018 QA/QC Collected? —

Purging / Sampling Method: Typhoon Pump / Hand Bailer / Peri-pump

1. L = Well Depth:	22.03	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	12.56	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.85	gal
6. 3(V) = Target Purge Volume	4.65	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings						
Time	24 hr	1040	1043					
Water Level (0.33)	feet	12.56	20.96					
Volume Purged	gal	0	1.53	3.10	4.65			
Flow Rate	mL/min	—	—	—	—			
Turbidity (+/- 10%)	NTU	41	33					
Dissolved Oxygen (+/- 10%)	%	-10.0	-12.8					
Dissolved Oxygen (+/- 10%)	mg/L	-6.15	-8.15					
Eh / ORP (+/- 10)	MeV	-33.3	18.8					
Specific Conductivity (+/- 3%)	mS/cm[c]	-2.04	-2.10					
Conductivity (+/- 3%)	mS/cm	.600	.622					
pH (+/- 0.1)	pH unit	8.13	4.88					
Temp (+/- 0.5)	C°	9.99	9.99					
Color	Visual	clear	murky					
Odor	Olfactory	—	—					

Comments: * Dry. @ 1045

Sample Time : Sample @ 1055

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-13 Date: December 10, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-13 121018 QA/QC Collected? ~~Dup~~ None

Purging / Sampling Method: ~~Typhoon Pump~~ Hand Bailer / Peri-pump

1. L = Well Depth:	21.02	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	8.57	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	2.03	gal
6. 3(V) = Target Purge Volume	6.09	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings						
Time	24 hr	10:57	1110	1115	1120			
Water Level (0.33)	feet	8.57	13.05	16.21	16.65			
Volume Purged	gal	—	2.03	4.06	6.09			
Flow Rate	mL/min	—	—	—	—			
Turbidity (+/- 10%)	NTU	44.4	29.0	15.5	7.00			
Dissolved Oxygen (+/- 10%)	%	-9.2	-11.3	-17.2	-15.6			
Dissolved Oxygen (+/- 10%)	mg/L	-6.08	-7.29	-11.97	-10.08			
Eh / ORP (+/- 10)	MeV	106.8	-74.6	-66.2	-73.4			
Specific Conductivity (+/- 3%)	mS/cm[c]	-1.63	-1.90	-2.07	-1.90			
Conductivity (+/- 3%)	mS/cm	.485	.563	.611	.590			
pH (+/- 0.1)	pH unit	2.95	7.70	7.64	7.68			
Temp (+/- 0.5)	C°	9.89	9.00	9.00	9.00			
Color	Visual	brown	brown	clear	clear			
Odor	Olfactory	—	—	—	—			

Comments: x started w/ typhoon pump, not pumping too clogged, used bailer

Sample Time : 1135

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-16 Date: December 10, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-16 121018 QA/QC Collected? —

Purging / Sampling Method: Typhoon Pump / (Hand Bailer) / Peri-pump

1. L = Well Depth:	15.10	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	7.91	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.17	gal
6. 3(V) = Target Purge Volume	3.51	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings						
Time	24 hr	1200	1205	1210	1215			
Water Level (0.33)	feet	7.91	9.45	11.74	13.08			
Volume Purged	gal	0	1.17	2.34	3.51			
Flow Rate	mL/min	—	—	—	—			
Turbidity (+/- 10%)	NTU	64.6	36.9	906	00			
Dissolved Oxygen (+/- 10%)	%	-15.2	-11.1	-13.8	-11.4			
Dissolved Oxygen (+/- 10%)	mg/L	-9.53	-7.04	-9.71	-7.36			
Eh / ORP (+/- 10)	MeV	-42.9	-16.6	-3.3	-2.0			
Specific Conductivity (+/- 3%)	mS/cm^c	-2.01	-2.11	-2.21	-2.33			
Conductivity (+/- 3%)	mS/cm	.893	.625	.654	.686			
pH (+/- 0.1)	pH unit	9.59	8.86	8.63	8.25			
Temp (+/- 0.5)	C°	9.00	9.00	9.00	9.00			
Color	Visual	clear	Clear	murky	"			
Odor	Olfactory	None	Non	None	None			

Comments: No tubing in well

Sample Time : 1220

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-14 Date: December 10, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-14 121018 QA/QC Collected? DUP

Purging / Sampling Method: Typhoon Pump / (Hand Bailer) / Peri-pump

1. L = Well Depth:	21.5'	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	11.98	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.57	gal
6. 3(V) = Target Purge Volume	4.71	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units		DM		Readings			
Time	24 hr	11:40	11:45	1230				
Water Level (0.33)	feet	11.98	dry	—				
Volume Purged	gal	0	1.57	~~3.14~~	~~4.71~~			
Flow Rate	mL/min	—	—	—				
Turbidity (+/- 10%)	NTU	0	12.79	839				
Dissolved Oxygen (+/- 10%)	%	-5.2	-10.6	-10.0				
Dissolved Oxygen (+/- 10%)	mg/L	-3.41	-4.81	-6.72				
Eh / ORP (+/- 10)	MeV	22.6	-116.9	-12.5				
Specific Conductivity (+/- 3%)	mS/cm[c]	—	—	-1.16				
Conductivity (+/- 3%)	mS/cm	0.513	0.501	.345				
pH (+/- 0.1)	pH unit	4.80	8.90	9.34				
Temp (+/- 0.5)	C°	9.9	9.9	9.0				
Color	Visual	clear	clear/black	cloudy				
Odor	Olfactory	—	—	—				

Comments: ran dry @ 11:45

Sample Time : 1230

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-4 Date: December 10, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW4 QA/QC Collected? —

Purging / Sampling Method: Typhoon Pump / Hand Bailer / Peri-pump

1. L = Well Depth:	17.23	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	4.21	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	2.12	gal
6. 3(V) = Target Purge Volume	6.36	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings						
Time	24 hr	1427	1430	1433	1436			
Water Level (0.33)	feet	4.21	7.70	8.95	9.06			
Volume Purged	gal	—	2.12	4.24	6.36			
Flow Rate	mL/min	~~300~~	300	300	300			
Turbidity (+/- 10%)	NTU	OR	OR	24.3	16.5			
Dissolved Oxygen (+/- 10%)	%	-5.08	-13.6	-9.6	-5.4			
Dissolved Oxygen (+/- 10%)	mg/L	-7.3	-7.96	-5.84	-3.56			
Eh / ORP (+/- 10)	MeV	20.9	12.5	167.5	-50.6			
Specific Conductivity (+/- 3%)	mS/cm^c	-1.74	-1.72	-1.69	-1.77			
Conductivity (+/- 3%)	mS/cm	.515	.508	.501	.522			
pH (+/- 0.1)	pH unit	8.36	8.46	3.64	8.24			
Temp (+/- 0.5)	C°	9.09	9.09	9.10	9.15			
Color	Visual	orange	orange	orange	clear			
Odor	Olfactory	None	None	None	None			

Comments: x lots of biological material

Sample Time : 1440

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-11 Date: December 10, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-11 121018 QA/QC Collected? No

Purging / Sampling Method: Typhoon Pump / Hand Bailer / Peri-pump

1. L = Well Depth:	21.40	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	10.46	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.79	gal
6. 3(V) = Target Purge Volume	5.37	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units		DM		Readings			
Time	24 hr	14:10	1418	1450				
Water Level (0.33)	feet	10.46	20.0	—				
Volume Purged	gal	—	1.79	~~3.58~~				
Flow Rate	mL/min	—	—	—				
Turbidity (+/- 10%)	NTU	58.9	226	5.0				
Dissolved Oxygen (+/- 10%)	%	-13.3	-20.9	-30.4				
Dissolved Oxygen (+/- 10%)	mg/L	-8.52	-13.6	-19.62				
Eh / ORP (+/- 10)	MeV	-5.0	122.8	119.4				
Specific Conductivity (+/- 3%)	mS/cm[c]	2.06	~~2.107~~	-1.98				
Conductivity (+/- 3%)	mS/cm	0.634	0.653	.584				
pH (+/- 0.1)	pH unit	9.87	6.11	5.30				
Temp (+/- 0.5)	C°	9.9	9.9	9.9				
Color	Visual	cloudy brown	—	clear				
Odor	Olfactory	—	—	—				

Comments: dry @ 14:18

Sample Time : 1450

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: BR-3 Date: December 17, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: BR-3 121118 QA/QC Collected? —

Purging / Sampling Method: (Typhoon Pump) / Hand Bailer / Peri-pump

1. L = Well Depth:	35.68	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	8.30	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	4.47	gal
6. 3(V) = Target Purge Volume	13.41	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings						
Time	24 hr	08:50	08:55	09:00	0905			
Water Level (0.33)	feet	8.30	8.87	9.03	9.00			
Volume Purged	gal	0	4.47	8.94	13.41			
Flow Rate	mL/min	250	250	250	250			
Turbidity (+/- 10%)	NTU	36.3	63	35.5	0			
Dissolved Oxygen (+/- 10%)	%	-12.7	-5.7	-7.6	-5.70			
Dissolved Oxygen (+/- 10%)	mg/L	-7.49	-3.37	-4.54	-3.43			
Eh / ORP (+/- 10)	MeV	19.6	1.8	38.3	-71.3			
Specific Conductivity (+/- 3%)	mS/cm[c]	—	—	—	—			
Conductivity (+/- 3%)	mS/cm	1.166	1.042	1.071	1.048			
pH (+/- 0.1)	pH unit	6.48	6.47	7.30	7.57			
Temp (+/- 0.5)	C°	9.9	9.9	9.9	9.9			
Color	Visual	brown	brown	brown	brown			
Odor	Olfactory	—	—	—	—			

Comments:

Sample Time : 09:10

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-7R Date: December 11 . 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-7R 121118 QA/QC Collected? No

Purging / Sampling Method: Typhoon Pump / (Hand Bailer) / Peri-pump

1. L = Well Depth:	15.60	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	10.52	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	0.83	gal
6. 3(V) = Target Purge Volume	2.49	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings						
Time	24 hr	09:15	0919	0923	0927			
Water Level (0.33)	feet	10.52	13.70	14.01	14.35			
Volume Purged	gal	0	0.83	1.66	2.49			
Flow Rate	mL/min	—	—	—	—			
Turbidity (+/- 10%)	NTU	0	1364 NU	0	0			
Dissolved Oxygen (+/- 10%)	%	-11.8	-13.0	-14.6	-12.9			
Dissolved Oxygen (+/- 10%)	mg/L	-5.88	-6.24	-7.51	-6.08			
Eh / ORP (+/- 10)	MeV	-65.7	-38.0	-43.7	-32.3			
Specific Conductivity (+/- 3%)	mS/cm[c]	—	—	—	—			
Conductivity (+/- 3%)	mS/cm	2.734	3.375	3.942	3.773			
pH (+/- 0.1)	pH unit	7.19	6.63	7.29	6.82			
Temp (+/- 0.5)	C°	9.9	9.9	9.9	9.9			
Color	Visual	brown	brown	" "	" "			
Odor	Olfactory	—	—	—	—			

Comments:

Sample Time : 09:30

* no tubing in well

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-9 Date: December 11, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-9 121118 QA/QC Collected? —

Purging / Sampling Method: Typhoon Pump / Hand Bailer / Peri-pump

1. L = Well Depth:	16.52	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	7.12	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.53	gal
6. 3(V) = Target Purge Volume	4.59	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings						
Time	24 hr	1025	1028	1031	1034			
Water Level (0.33)	feet	7.12	7.21	7.20	7.20			
Volume Purged	gal	0	1.53	3.06	4.59			
Flow Rate	mL/min	—	—	—	—			
Turbidity (+/- 10%)	NTU	OR	612	43	25			
Dissolved Oxygen (+/- 10%)	%	-19.6	-18.7	-13.6	-8.6			
Dissolved Oxygen (+/- 10%)	mg/L	-12.70	-10.62	-8.92	-5.57			
Eh / ORP (+/- 10)	MeV	-87.5	-79.8	-74.7	-57.1			
Specific Conductivity (+/- 3%)	mS/cm[c]	-1.67	-1.80	-2.11	-1.92			
Conductivity (+/- 3%)	mS/cm	.494	.551	.624	0.569			
pH (+/- 0.1)	pH unit	9.94	9.50	9.00	8.45			
Temp (+/- 0.5)	C°	8.9	9.01	9.01	9.9			
Color	Visual	murky	murky	clear	clear			
Odor	Olfactory	—	—	—	Odor			

Comments: No tubing

Sample Time : 1035

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-10 Date: December 11, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-10 121118 QA/QC Collected? No

Purging / Sampling Method: (Typhoon Pump) / Hand Bailer / Peri-pump

1. L = Well Depth:	18.96	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	5.21	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	2.24	gal
6. 3(V) = Target Purge Volume	6.72	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings						
Time	24 hr	10:52	1056	1100	1104			
Water Level (0.33)	feet	5.21	5.95	5.98	6.01			
Volume Purged	gal	0	2.24	4.48	6.72			
Flow Rate	mL/min	250	250	250	250			
Turbidity (+/- 10%)	NTU	0	0	5.19	4.62			
Dissolved Oxygen (+/- 10%)	%	-8.3	-5.8	-5.2	-12.9			
Dissolved Oxygen (+/- 10%)	mg/L	-5.47	-3.76	-3.41	-7.91			
Eh / ORP (+/- 10)	MeV	-38.8	-67.7	-80.3	-94.7			
Specific Conductivity (+/- 3%)	mS/cm[c]	-1.51	-1.73	-2.02	-2.08			
Conductivity (+/- 3%)	mS/cm	0.447	0.511	0.597	0.616			
pH (+/- 0.1)	pH unit	8.36	8.55	8.46	8.45			
Temp (+/- 0.5)	C°	9.9	9.9	9.9	9.9			
Color	Visual	brown	clear	clear	clear			
Odor	Olfactory	-	-	-	-			

Comments:

Sample Time : 1105

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-8 Date: December 11, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-8 121118 QA/QC Collected? No

Purging / Sampling Method: Typhoon Pump / Hand Bailer / Peri-pump

1. L = Well Depth:	13.86	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	7.28	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.07	gal
6. 3(V) = Target Purge Volume	3.21	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings						
Time	24 hr	1133	1135	1138	1142			
Water Level (0.33)	feet	7.28	9.69	10.85	10.79			
Volume Purged	gal	0	1.07	2.14	3.21			
Flow Rate	mL/min	—	—	—	—			
Turbidity (+/- 10%)	NTU	OR	OR	55	OR			
Dissolved Oxygen (+/- 10%)	%	-30.2	-42.1	-17.4	-12.6			
Dissolved Oxygen (+/- 10%)	mg/L	-18.05	-26.48	-11.42	-8.06			
Eh / ORP (+/- 10)	MeV	-60.0	-68.5	-60.4	-63.7			
Specific Conductivity (+/- 3%)	mS/cm^c	-.73	-1.04	-1.94	-2.05			
Conductivity (+/- 3%)	mS/cm	.214	.307	.575	0.607			
pH (+/- 0.1)	pH unit	9.29	9.34	8.94	8.81			
Temp (+/- 0.5)	C°	9.09	7.15	8.08	9.9			
Color	Visual	black	black	black	black			
Odor	Olfactory	—	—	—	—			

Comments: No casing cap

Sample Time : 1145

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-6 Date: December 11, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-6 121118 QA/QC Collected? —

Purging / Sampling Method: (Typhoon Pump) / Hand Bailer / Peri-pump

1. L = Well Depth:	23.22	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	3.56	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	3.21	gal
6. 3(V) = Target Purge Volume	9.63	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings						
Time	24 hr	13:42			14:12			
Water Level (0.33)	feet	3.56	6.57	10.34	11.00			
Volume Purged	gal	0	3.21	6.42	9.63			
Flow Rate	mL/min	300	300	300	300			
Turbidity (+/- 10%)	NTU	OR	47	51	51			
Dissolved Oxygen (+/- 10%)	%	-6.3	-4.9	-5.3	-6.7			
Dissolved Oxygen (+/- 10%)	mg/L	-3.95	-3.05	-3.34	-4.16			
Eh / ORP (+/- 10)	MeV	-83.0	-76.4	-82.9	-83.2			
Specific Conductivity (+/- 3%)	mS/cm[c]	-2.67	-2.45	-5.2	-6.9			
Conductivity (+/- 3%)	mS/cm	.790	0.727	0.716	0.755			
pH (+/- 0.1)	pH unit	9.00	8.39	8.38	8.27			
Temp (+/- 0.5)	C°	4.01	3.82	4.21	4.18			
Color	Visual	black	Clear	clear	clear			
Odor	Olfactory	—	—	—	—			

Comments: No tubing

Sample Time : 1415

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-17 Date: December 11 , 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-17 121118 QA/QC Collected? No

Purging / Sampling Method: Typhoon Pump / (Hand Bailer) / Peri-pump

1. L = Well Depth:	15.85	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	6.25	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$	1.57	gal
6. 3(V) = Target Purge Volume	4.71	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings						
Time	24 hr	14:15	14:19	14:22	14:27			
Water Level (0.33)	feet	6.25						
Volume Purged	gal	-	1.57	3.14	4.71			
Flow Rate	mL/min	-	-	-	-			
Turbidity (+/- 10%)	NTU	28.1	0	0	0			
Dissolved Oxygen (+/- 10%)	%	-14.3	-34.5	-18.1	-8.6			
Dissolved Oxygen (+/- 10%)	mg/L	-8.70	-18.99	-10.12	-5.23			
Eh / ORP (+/- 10)	MeV	-59.3	-45.8	2.1	9.2			
Specific Conductivity (+/- 3%)	mS/cm[c]	0.784	-2.85	-2.96	-3.27			
Conductivity (+/- 3%)	mS/cm	-2.65	0.844	0.875	0.968			
pH (+/- 0.1)	pH unit	8.07	7.92	6.79	7.24			
Temp (+/- 0.5)	C°	4.11	4.08	4.13	4.08			
Color	Visual	clear	brown	brown	brown			
Odor	Olfactory	-	-	-	-			

Comments:

Sample Time : 14:30

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-15 Date: December 12, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-15 121218 QA/QC Collected? —

Purging / Sampling Method: Typhoon Pump / Hand Bailer / Peri-pump

1. L = Well Depth:	15.80	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	10.72	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings							
Time	24 hr	0850	0855	0900	0905	0910	0915 ✓	0920 ✓	0925 ✓
Water Level (0.33)	feet	10.99	11.60	11.91	12.16	12.41	12.58	12.75	12.89
Volume Purged	gal	—	.5	.97	1.49	1.98	2.41	2.86	3.11
Flow Rate	mL/min	175	175	175	175	175	175	175	175
Turbidity (+/- 10%)	NTU	OR	0	55.1	29.2	13.3	6.73	5.1	3.69
Dissolved Oxygen (+/- 10%)	%	-21.2	-14.5	-13.0	-7.2	-6.7	-6.2	-6.1	-6.0
Dissolved Oxygen (+/- 10%)	mg/L	-13.73	-9.91	-8.48	-4.65	-3.96	-3.87	-3.82	-3.78
Eh / ORP (+/- 10)	MeV	-45.3	-31.3	-25.6	-16.9	-15.3	-11.5	-12.1	-8.9
Specific Conductivity (+/- 3%)	mS/cm^c	-1.70	-1.64	-1.64	-1.64	-1.65	-1.65	-1.65	-1.65
Conductivity (+/- 3%)	mS/cm	.530	.486	.487	.486	.488	.489	.487	.487
pH (+/- 0.1)	pH unit	10.77	10.00	9.63	9.35	9.06	8.99	8.97	8.94
Temp (+/- 0.5)	C°	9.41	9.39	9.38	9.22	9.22	9.19	9.15	9.11
Color	Visual	murky	clear	clear	clear	clear	clear	clear	clear
Odor	Olfactory	—	—	—	—	—	—	—	—

Comments: No lock, No tubing, NO HDPE left in well

Sample Time : 09:40

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-5 Date: December 12, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-5 121218 QA/QC Collected? DUP, MS/MSD

Purging / Sampling Method: Typhoon Pump / Hand Bailer / (Peri-pump)

1. L = Well Depth:	19.00	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	3.02	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings								
Time	24 hr	1013	1018	1023	1028	1033	1038	1043	1048	105
Water Level (0.33)	feet	3.02	4.38	4.49	4.71	4.85	4.98	5.05	6.20	6.2
Volume Purged	gal	0	.45	.78	1.10	1.47	1.91	2.43	2.58	2.9
Flow Rate	mL/min	150	150	150	150	150	150	150	150	150
Turbidity (+/- 10%)	NTU	620	665	50.4	38.1	28.3	~~4.98~~ 17.8	14.9	14.9	13.4
Dissolved Oxygen (+/- 10%)	%	86.4	38.1	31.1	22.4	17.7	15.2	13.1	11.5	11.4
Dissolved Oxygen (+/- 10%)	mg/L	9.33	4.14	3.38	2.40	1.89	1.66	1.42	1.27	1.2
Eh / ORP (+/- 10)	MeV	53.5	54.9	54.0	50.1	49.0	52.6	58.0	54.2	50.1
Specific Conductivity (+/- 3%)	mS/cm[c]	1.674	1.659	1.624	1.611	1.603	1.600	1.592	1.585	1.57
Conductivity (+/- 3%)	mS/cm	1.212	1.222	1.185	1.192	1.190	1.185	1.177	1.174	1.16
pH (+/- 0.1)	pH unit	7.07	6.95	6.93	6.94	6.94	6.94	6.94	6.95	6.9
Temp (+/- 0.5)	C°	10.42	11.20	10.77	11.42	11.51	11.45	11.37	11.41	11.4
Color	Visual	murky	murky	clear	clear	clear	clear	clear	clear	clea
Odor	Olfactory	—	—	—	—	—	—	—	—	—

Comments: No tubing in well, had bolts

Sample Time : 1100

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-18 Date: December 12, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-18 121218 QA/QC Collected? ——

Purging / Sampling Method: Typhoon Pump / Hand Bailer / (Peri-pump)

1. L = Well Depth:	10.17	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	3.60	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings						✓
Time	24 hr	1200	1205	1210	1215	1220	1225	1230
Water Level (0.33)	feet	3.71	4.71	4.75	4.87	4.91	4.95	4.98
Volume Purged	gal	—	.25	.80	.75	1.00	1.15	1.20
Flow Rate	mL/min	150	150	150	150	150	150	150
Turbidity (+/- 10%)	NTU	84.8	59.5	47.5	30.8	23.2	18.2	15.3
Dissolved Oxygen (+/- 10%)	%	68.5	18.7	12.4	11.6	9.9	8.8	8.5
Dissolved Oxygen (+/- 10%)	mg/L	6.28	2.08	1.40	1.30	1.12	.98	.95
Eh / ORP (+/- 10)	MeV	72.7	70.2	69.3	68.5	65.4	62.2	60.3
Specific Conductivity (+/- 3%)	mS/cm[c]	.539	.768	.775	.777	.788	.794	.795
Conductivity (+/- 3%)	mS/cm	.771	.547	.554	.559	.567	.573	.575
pH (+/- 0.1)	pH unit	7.54	7.46	7.44	7.43	7.43	7.43	7.44
Temp (+/- 0.5)	C°	9.14	9.98	10.06	10.28	10.31	10.43	10.54
Color	Visual	murky	clear	clear	clear	clear	clear	clear
Odor	Olfactory	—	—	—	—	—	—	—

Comments: No tubing in well, had bolts

Sample Time : 1250

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-18 cont. Date: December 12, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-18 121218 QA/QC Collected? —

Purging / Sampling Method: Typhoon Pump / Hand Bailer / (Peri-pump)

1. L = Well Depth:	10.17	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	3.60	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	✓	✓	Readings				
Time	24 hr	1235	1240					
Water Level (0.33)	feet	6.01	5.03					
Volume Purged	gal	1.61	1.79					
Flow Rate	mL/min	150	150					
Turbidity (+/- 10%)	NTU	12.1	10.48					
Dissolved Oxygen (+/- 10%)	%	7.8	7.4					
Dissolved Oxygen (+/- 10%)	mg/L	.86	.82					
Eh / ORP (+/- 10)	MeV	99.4	88.6					
Specific Conductivity (+/- 3%)	mS/cm°	.794	.793					
Conductivity (+/- 3%)	mS/cm	.575	.574					
pH (+/- 0.1)	pH unit	7.45	7.46					
Temp (+/- 0.5)	C°	10.54	10.57					
Color	Visual	clear	clear					
Odor	Olfactory	—	—					

Comments:

Sample Time : 1250

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-12 Date: December 12 . 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-12 121218 QA/QC Collected? No

Purging / Sampling Method: Typhoon Pump / Hand Bailer / (Peri-pump)

1. L = Well Depth:	21.98	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	11.57	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = $C(3.14159)(0.5D)^2(7.48)$		gal
6. 3(V) = Target Purge Volume		gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings					✓	✓	✓
Time	24 hr	1325	1330	1335	1340	1345	1350	1355	1400
Water Level (0.33)	feet	11.57	12.15	12.20	12.19	12.20	12.21	12.21	12.21
Volume Purged	gal	—	.30	.61	.94	1.35	1.61	1.73	2.11
Flow Rate	mL/min	175	175	175	175	185	185	185	185
Turbidity (+/- 10%)	NTU	83.0	103.8	93.8	96.3	86.2	50.0	49.4	48.6
Dissolved Oxygen (+/- 10%)	%	53.8	11.0	8.4	7.6	7.4	6.4	6.3	6.3
Dissolved Oxygen (+/- 10%)	mg/L	5.37	1.21	.93	.83	.80	.71	.68	.68
Eh / ORP (+/- 10)	MeV	122.3	81.98	64.8	37.7	23.0	-4.5	-9.7	-13.9
Specific Conductivity (+/- 3%)	mS/cm[c]	1.111	1.146	1.146	1.146	1.145	1.146	1.147	1.147
Conductivity (+/- 3%)	mS/cm	.795	.839	.845	.846	.845	.846	.846	.846
pH (+/- 0.1)	pH unit	7.52	7.88	7.86	7.84	7.83	7.51	7.52	7.81
Temp (+/- 0.5)	C°	9.95	11.05	11.26	11.32	11.25	11.29	11.23	11.27
Color	Visual	orange	orange	orange	orange	orange	clear	clear	clear
Odor	Olfactory	—	—	—	—	—	—	—	—

Comments: No lock, No tubing, casing cap ✓

Sample Time :

1410

Monitoring Well Purging / Sampling Form

Project Name and Number: NE Alloys 60284002

Monitoring Well Number: MW-1 Date: December 12, 2018

Samplers: Alexandra Golden and Jillian Kosinski

Sample Number: MW-1 12218 QA/QC Collected? —

Purging / Sampling Method: Typhoon Pump / Hand Bailer / (Peri-pump)

1. L = Well Depth:	23.05	feet
2. D = Riser Diameter (I.D.):		feet
3. W = Depth to Water:	10.00	feet
4. C = Column of Water in Well:		feet
5. V = Volume of Water in Well = C(3.14159)(0.5D)^2(7.48)	2.13	gal
6. 3(V) = Target Purge Volume	6.39	gal

D (inches)	D (feet)
1-inch	0.08
2-inch	0.17
3-inch	0.25
4-inch	0.33
6-inch	0.50

Conversion factors to determine V given C

D (inches)	1-inch	2-inch	3-inch	4-inch	6-inch
V (gal / ft)	0.041	0.163	0.37	0.65	1.5

Water Quality Readings Collected Using YSI + NTU

Parameter	Units	Readings ✓				✓	✓
Time	24 hr	1455	1500	1505	1510	1516	1520
Water Level (0.33)	feet	12.80	13.96	13.54	13.18	12.93	12.68
Volume Purged	gal	0	1.5	2.00	2.34	2.99	3.25
Flow Rate	mL/min	250	250	250	250	250	250
Turbidity (+/- 10%)	NTU	9.23	5.38	5.73	3.70	3.42	3.53
Dissolved Oxygen (+/- 10%)	%	17.8	16.4	15.2	14.1	12.9	12.2
Dissolved Oxygen (+/- 10%)	mg/L	1.87	1.72	1.62	1.50	1.37	1.30
Eh / ORP (+/- 10)	MeV	45.4	47.5	60.7	52.3	53.7	54.9
Specific Conductivity (+/- 3%)	mS/cm^c	1.360	1.425	1.433	1.436	1.433	1.436
Conductivity (+/- 3%)	mS/cm	1.042	1.098	1.087	1.089	1.090	1.089
pH (+/- 0.1)	pH unit	7.14	7.14	7.15	7.13	7.13	7.12
Temp (+/- 0.5)	C°	12.80	12.98	12.36	12.34	12.46	12.43
Color	Visual	clear	clear	"	"	"	"
Odor	Olfactory	—	—	—	—	—	—

Comments: 1 LDPE in well purge 3 WV's 1st, ✱ casing capr, no bolts

Sample Time : 1530

Appendix B

Laboratory Reports and Data Usability Summary Report

eurofins | Spectrum Analytical

☑ Final Report
☐ Revised Report

Report Date:
28-Dec-18 11:14

Laboratory Report
SC52617

AECOM Environment
40 British American Boulevard
Latham, NY 12110
Attn: Lindsay Mitchell

Project: NEAM - Utica, NY
Project #: 60284002

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2972/2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00348
USDA # P330-15-00375
Vermont # VT-11393

Authorized by:

Christina White
Technical Director

Christina A. White

Eurofins Spectrum Analytical holds primary NELAC certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 49 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

Eurofins Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Eurofins Spectrum Analytical, Inc. is currently accredited for the specific method or analyte indicated. Please refer to our 'Quality' web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Eurofins Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (PA-68-04426).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

Sample Summary

Work Order: SC52617

Project: NEAM - Utica, NY

Project Number: 60284002

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SC52617-01	BR-1 121018	Ground Water	10-Dec-18 09:30	13-Dec-18 10:30
SC52617-02	BR-2 121018	Ground Water	10-Dec-18 10:20	13-Dec-18 10:30
SC52617-03	MW-3 121018	Ground Water	10-Dec-18 10:55	13-Dec-18 10:30
SC52617-04	MW-13 121018	Ground Water	10-Dec-18 11:35	13-Dec-18 10:30
SC52617-05	MW-14 121018	Ground Water	10-Dec-18 12:30	13-Dec-18 10:30
SC52617-06	MW-16 121018	Ground Water	10-Dec-18 12:20	13-Dec-18 10:30
SC52617-07	MW-11 121018	Ground Water	10-Dec-18 14:50	13-Dec-18 10:30
SC52617-08	MW-4 121018	Ground Water	10-Dec-18 14:40	13-Dec-18 10:30
SC52617-09	DUP	Ground Water	10-Dec-18 00:00	13-Dec-18 10:30
SC52617-10	BR-3 121118	Ground Water	11-Dec-18 09:10	13-Dec-18 10:30
SC52617-11	MW-7R 121118	Ground Water	11-Dec-18 09:30	13-Dec-18 10:30
SC52617-12	MW-9 121118	Ground Water	11-Dec-18 10:35	13-Dec-18 10:30
SC52617-13	MW-10 121118	Ground Water	11-Dec-18 11:05	13-Dec-18 10:30
SC52617-14	MW-8 121118	Ground Water	11-Dec-18 11:45	13-Dec-18 10:30
SC52617-15	MW-6 121118	Ground Water	11-Dec-18 14:15	13-Dec-18 10:30
SC52617-16	MW-17 121118	Ground Water	11-Dec-18 14:30	13-Dec-18 10:30
SC52617-17	MW-15 121218	Ground Water	12-Dec-18 09:40	13-Dec-18 10:30
SC52617-18	MW-5 121218	Ground Water	12-Dec-18 11:00	13-Dec-18 10:30
SC52617-19	MW-18 121218	Ground Water	12-Dec-18 12:50	13-Dec-18 10:30
SC52617-20	MW-12 121218	Ground Water	12-Dec-18 14:10	13-Dec-18 10:30
SC52617-21	MW-1 121218	Ground Water	12-Dec-18 15:30	13-Dec-18 10:30
SC52617-22	Trip Blank	Trip Blank	12-Dec-18 00:00	13-Dec-18 10:30

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the reporting limit are reported as "<" (less than) the reporting limit in this report.

The samples were received 2.6 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group. If method or program required MS/MSD/Dup were not performed, sufficient sample was not provided to the laboratory.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

E624.1

Laboratory Control Samples:

CC14805-LCS

This parameter is outside laboratory lcs/lcsd specified recovery limits.

Methyl tert-butyl ether (MTBE)

Sample Acceptance Check Form

Client:	AECOM Environment - Latham, NY
Project:	NEAM - Utica, NY / 60284002
Work Order:	SC52617
Sample(s) received on:	12/13/2018

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
Were custody seals present?	☑	☐	☐
Were custody seals intact?	☑	☐	☐
Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
Were samples cooled on ice upon transfer to laboratory representative?	☑	☐	☐
Were sample containers received intact?	☑	☐	☐
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
Were samples accompanied by a Chain of Custody document?	☑	☐	☐
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☑	☐	☐
Did sample container labels agree with Chain of Custody document?	☐	☑	☐
Were samples received within method-specific holding times?	☑	☐	☐

Summary of Hits

Lab ID: SC52617-02 **Client ID:** BR-2 121018

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
cis-1,2-Dichloroethene	0.37	J	0.50	ug/L	E624.1
Trichloroethene	1.1		0.50	ug/L	E624.1

Lab ID: SC52617-04 **Client ID:** MW-13 121018

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
1,2-Dichlorobenzene	0.45	J	0.50	ug/L	E624.1
Chlorobenzene	0.29	J	0.50	ug/L	E624.1

Lab ID: SC52617-05 **Client ID:** MW-14 121018

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
1,2-Dichlorobenzene	11		10	ug/L	E624.1
Benzene	12		10	ug/L	E624.1
Chlorobenzene	6.7	J	10	ug/L	E624.1
Ethylbenzene	25		10	ug/L	E624.1
m&p-Xylene	160		10	ug/L	E624.1
o-Xylene	100		10	ug/L	E624.1
Toluene	13		10	ug/L	E624.1

Lab ID: SC52617-06 **Client ID:** MW-16 121018

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
1,1-Dichloroethane	7.9	J	10	ug/L	E624.1
1,1-Dichloroethene	11		10	ug/L	E624.1
cis-1,2-Dichloroethene	1400		10	ug/L	E624.1
Trichloroethene	1100		10	ug/L	E624.1
Vinyl chloride	130		10	ug/L	E624.1

Lab ID: SC52617-07 **Client ID:** MW-11 121018

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
cis-1,2-Dichloroethene	0.46	J	0.50	ug/L	E624.1
Trichloroethene	1.9		0.50	ug/L	E624.1

Lab ID: SC52617-08 **Client ID:** MW-4 121018

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
cis-1,2-Dichloroethene	0.29	J	0.50	ug/L	E624.1
Trichloroethene	1.2		0.50	ug/L	E624.1

Lab ID: SC52617-09 **Client ID:** DUP

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
1,2-Dichlorobenzene	10		1.0	ug/L	E624.1
1,4-Dichlorobenzene	0.77	J	1.0	ug/L	E624.1
Benzene	11		1.0	ug/L	E624.1
Chlorobenzene	6.0		1.0	ug/L	E624.1
Ethylbenzene	24		1.0	ug/L	E624.1
m&p-Xylene	160		1.0	ug/L	E624.1
o-Xylene	100		1.0	ug/L	E624.1
Toluene	12		1.0	ug/L	E624.1

Lab ID: SC52617-12 **Client ID:** MW-9 121118

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
cis-1,2-Dichloroethene	13		0.50	ug/L	E624.1
trans-1,2-Dichloroethene	0.88		0.50	ug/L	E624.1
Trichloroethene	58		0.50	ug/L	E624.1
Vinyl chloride	2.0		0.50	ug/L	E624.1

Lab ID: SC52617-15 **Client ID:** MW-6 121118

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
1,1,1-Trichloroethane	16		2.5	ug/L	E624.1
1,1-Dichloroethane	170		2.5	ug/L	E624.1
Chloroethane	4.3		2.5	ug/L	E624.1
cis-1,2-Dichloroethene	79		2.5	ug/L	E624.1
Vinyl chloride	390		2.5	ug/L	E624.1

Lab ID: SC52617-16 **Client ID:** MW-17 121118

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
1,1-Dichloroethene	620		200	ug/L	E624.1
cis-1,2-Dichloroethene	85000		500	ug/L	E624.1
trans-1,2-Dichloroethene	150	J	200	ug/L	E624.1
Trichloroethene	88000		500	ug/L	E624.1
Vinyl chloride	2800		200	ug/L	E624.1

Lab ID: SC52617-17 **Client ID:** MW-15 121218

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
1,1,1-Trichloroethane	5.8		2.5	ug/L	E624.1
1,1-Dichloroethane	4.4		2.5	ug/L	E624.1
1,1-Dichloroethene	4.8		2.5	ug/L	E624.1
cis-1,2-Dichloroethene	480		2.5	ug/L	E624.1
trans-1,2-Dichloroethene	3.5		2.5	ug/L	E624.1
Trichloroethene	1200		10	ug/L	E624.1
Vinyl chloride	56		2.5	ug/L	E624.1

Lab ID: SC52617-18 **Client ID:** MW-5 121218

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
1,1,1-Trichloroethane	0.42	J	0.50	ug/L	E624.1
1,1-Dichloroethane	19		0.50	ug/L	E624.1
1,1-Dichloroethene	0.59		0.50	ug/L	E624.1
cis-1,2-Dichloroethene	60		0.50	ug/L	E624.1
trans-1,2-Dichloroethene	0.42	J	0.50	ug/L	E624.1
Trichloroethene	9.6		0.50	ug/L	E624.1
Vinyl chloride	21		0.50	ug/L	E624.1

Lab ID: SC52617-19 **Client ID:** MW-18 121218

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
1,1-Dichloroethane	3.1		0.50	ug/L	E624.1
1,1-Dichloroethene	0.90		0.50	ug/L	E624.1
cis-1,2-Dichloroethene	150		5.0	ug/L	E624.1
trans-1,2-Dichloroethene	1.2		0.50	ug/L	E624.1
Trichloroethene	0.55		0.50	ug/L	E624.1
Vinyl chloride	170		5.0	ug/L	E624.1

Lab ID: SC52617-20 **Client ID:** MW-12 121218

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Benzene	1.0		0.50	ug/L	E624.1

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
BR-1 121018	60284002	Ground Water	10-Dec-18 09:30	13-Dec-18
SC52617-01				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	E624.1	10-Dec-18 09:30	14-Dec-18 21:27	11301	460149A	
79-34-5	1,1,2,2-tetrachloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50		ug/L	0.50	0.50	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 0.50		ug/L	0.50	0.42	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 1.0		ug/L	1.0	0.50	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50		ug/L	0.50	0.45	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*101*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*94*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*104*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*96*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
BR-2 121018	60284002	Ground Water	10-Dec-18 10:20	13-Dec-18
SC52617-02				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	E624.1	10-Dec-18 10:20	14-Dec-18 21:48	11301	460149A	
79-34-5	1,1,2,2-tetrachloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50		ug/L	0.50	0.50	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	**0.37**	J	ug/L	0.50	0.25	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 0.50		ug/L	0.50	0.42	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 1.0		ug/L	1.0	0.50	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50		ug/L	0.50	0.45	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
79-01-6	Trichloroethene	**1.1**		ug/L	0.50	0.25	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*101*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*93*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*104*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*96*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-3 121018 SC52617-03	60284002	Ground Water	10-Dec-18 10:55	13-Dec-18

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	E624.1	10-Dec-18 10:55	14-Dec-18 22:10	11301	460149A	
79-34-5	1,1,2,2-tetrachloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50		ug/L	0.50	0.50	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 0.50		ug/L	0.50	0.42	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 1.0		ug/L	1.0	0.50	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50		ug/L	0.50	0.45	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*101*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*93*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*103*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*97*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-13 121018	60284002	Ground Water	10-Dec-18 11:35	13-Dec-18
SC52617-04				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	E624.1	10-Dec-18 11:35	14-Dec-18 22:31	11301	460149A	
79-34-5	1,1,2,2-tetrachloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	**0.45**	J	ug/L	0.50	0.25	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50		ug/L	0.50	0.50	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-90-7	Chlorobenzene	**0.29**	J	ug/L	0.50	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 0.50		ug/L	0.50	0.42	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 1.0		ug/L	1.0	0.50	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50		ug/L	0.50	0.45	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*102*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*95*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*103*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*96*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-14 121018 SC52617-05	60284002	Ground Water	10-Dec-18 12:30	13-Dec-18

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 10		ug/L	10	5.0	20	E624.1	10-Dec-18 12:30	16-Dec-18 18:32	11301	460155A	
79-34-5	1,1,2,2-tetrachloroethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 10		ug/L	10	5.0	20	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	11		ug/L	10	5.0	20	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 10		ug/L	10	5.0	20	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 10		ug/L	10	5.0	20	"	"	"	"	"	
71-43-2	Benzene	12		ug/L	10	5.0	20	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
75-25-2	Bromoform	< 10		ug/L	10	5.0	20	"	"	"	"	"	
74-83-9	Bromomethane	< 10		ug/L	10	10	20	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 10		ug/L	10	5.0	20	"	"	"	"	"	
108-90-7	Chlorobenzene	6.7	J	ug/L	10	5.0	20	"	"	"	"	"	
75-00-3	Chloroethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
67-66-3	Chloroform	< 10		ug/L	10	5.0	20	"	"	"	"	"	
74-87-3	Chloromethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 10		ug/L	10	5.0	20	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 8.0		ug/L	8.0	5.0	20	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
100-41-4	Ethylbenzene	25		ug/L	10	5.0	20	"	"	"	"	"	
179601-23-1	m&p-Xylene	160		ug/L	10	8.4	20	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 20		ug/L	20	10	20	"	"	"	"	"	
75-09-2	Methylene chloride	< 10		ug/L	10	5.0	20	"	"	"	"	"	
95-47-6	o-Xylene	100		ug/L	10	9.0	20	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 10		ug/L	10	5.0	20	"	"	"	"	"	
108-88-3	Toluene	13		ug/L	10	5.0	20	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 10		ug/L	10	5.0	20	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 8.0		ug/L	8.0	5.0	20	"	"	"	"	"	
79-01-6	Trichloroethene	< 10		ug/L	10	5.0	20	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
75-01-4	Vinyl chloride	< 10		ug/L	10	5.0	20	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*100*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*98*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*100*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*99*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-16 121018 SC52617-06	60284002	Ground Water	10-Dec-18 12:20	13-Dec-18

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 10		ug/L	10	5.0	20	E624.1	10-Dec-18 12:20	16-Dec-18 18:54	11301	460155A	
79-34-5	1,1,2,2-tetrachloroethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	**7.9**	J	ug/L	10	5.0	20	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	**11**		ug/L	10	5.0	20	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 10		ug/L	10	5.0	20	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 10		ug/L	10	5.0	20	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 10		ug/L	10	5.0	20	"	"	"	"	"	
71-43-2	Benzene	< 10		ug/L	10	5.0	20	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
75-25-2	Bromoform	< 10		ug/L	10	5.0	20	"	"	"	"	"	
74-83-9	Bromomethane	< 10		ug/L	10	10	20	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 10		ug/L	10	5.0	20	"	"	"	"	"	
108-90-7	Chlorobenzene	< 10		ug/L	10	5.0	20	"	"	"	"	"	
75-00-3	Chloroethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
67-66-3	Chloroform	< 10		ug/L	10	5.0	20	"	"	"	"	"	
74-87-3	Chloromethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	**1,400**		ug/L	10	5.0	20	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 8.0		ug/L	8.0	5.0	20	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
100-41-4	Ethylbenzene	< 10		ug/L	10	5.0	20	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 10		ug/L	10	8.4	20	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 20		ug/L	20	10	20	"	"	"	"	"	
75-09-2	Methylene chloride	< 10		ug/L	10	5.0	20	"	"	"	"	"	
95-47-6	o-Xylene	< 10		ug/L	10	9.0	20	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 10		ug/L	10	5.0	20	"	"	"	"	"	
108-88-3	Toluene	< 10		ug/L	10	5.0	20	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 10		ug/L	10	5.0	20	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 8.0		ug/L	8.0	5.0	20	"	"	"	"	"	
79-01-6	Trichloroethene	**1,100**		ug/L	10	5.0	20	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 10		ug/L	10	5.0	20	"	"	"	"	"	
75-01-4	Vinyl chloride	**130**		ug/L	10	5.0	20	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*100*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*96*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*105*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*100*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-11 121018 SC52617-07	60284002	Ground Water	10-Dec-18 14:50	13-Dec-18

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	E624.1	10-Dec-18 14:50	16-Dec-18 12:28	11301	460155A	
79-34-5	1,1,2,2-tetrachloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50		ug/L	0.50	0.50	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	**0.46**	J	ug/L	0.50	0.25	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 0.50		ug/L	0.50	0.42	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 1.0		ug/L	1.0	0.50	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50		ug/L	0.50	0.45	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
79-01-6	Trichloroethene	**1.9**		ug/L	0.50	0.25	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*100*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*95*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*105*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*100*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-4 121018	60284002	Ground Water	10-Dec-18 14:40	13-Dec-18
SC52617-08				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	E624.1	10-Dec-18 14:40	16-Dec-18 12:50	11301	460155A	
79-34-5	1,1,2,2-tetrachloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50		ug/L	0.50	0.50	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	**0.29**	J	ug/L	0.50	0.25	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 0.50		ug/L	0.50	0.42	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 1.0		ug/L	1.0	0.50	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50		ug/L	0.50	0.45	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
79-01-6	Trichloroethene	**1.2**		ug/L	0.50	0.25	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*100*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*97*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*103*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*100*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
DUP	60284002	Ground Water	10-Dec-18 00:00	13-Dec-18
SC52617-09				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 1.0		ug/L	1.0	0.50	2	E624.1	10-Dec-18	17-Dec-18 17:11	11301	460366A	
79-34-5	1,1,2,2-tetrachloroethane	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	**10**		ug/L	1.0	0.50	2	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	**0.77**	J	ug/L	1.0	0.50	2	"	"	"	"	"	
71-43-2	Benzene	**11**		ug/L	1.0	0.50	2	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
75-25-2	Bromoform	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
74-83-9	Bromomethane	< 1.0		ug/L	1.0	1.0	2	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
108-90-7	Chlorobenzene	**6.0**		ug/L	1.0	0.50	2	"	"	"	"	"	
75-00-3	Chloroethane	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
67-66-3	Chloroform	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
74-87-3	Chloromethane	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.80		ug/L	0.80	0.50	2	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
100-41-4	Ethylbenzene	**24**		ug/L	1.0	0.50	2	"	"	"	"	"	
179601-23-1	m&p-Xylene	**160**		ug/L	1.0	0.84	2	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 2.0		ug/L	2.0	1.0	2	"	"	"	"	"	
75-09-2	Methylene chloride	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
95-47-6	o-Xylene	**100**		ug/L	1.0	0.90	2	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
108-88-3	Toluene	**12**		ug/L	1.0	0.50	2	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.80		ug/L	0.80	0.50	2	"	"	"	"	"	
79-01-6	Trichloroethene	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
75-01-4	Vinyl chloride	< 1.0		ug/L	1.0	0.50	2	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*101*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*105*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*104*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*99*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
BR-3 121118	60284002	Ground Water	11-Dec-18 09:10	13-Dec-18
SC52617-10				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	E624.1	11-Dec-18 09:10	18-Dec-18 17:39	11301	460528A	
79-34-5	1,1,2,2-tetrachloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50		ug/L	0.50	0.50	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 0.50		ug/L	0.50	0.42	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 1.0		ug/L	1.0	0.50	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50		ug/L	0.50	0.45	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*101*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*94*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*103*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*101*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-7R 121118	60284002	Ground Water	11-Dec-18 09:30	13-Dec-18
SC52617-11				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	E624.1	11-Dec-18 09:30	16-Dec-18 13:11	11301	460155A	
79-34-5	1,1,2,2-tetrachloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50		ug/L	0.50	0.50	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 0.50		ug/L	0.50	0.42	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 1.0		ug/L	1.0	0.50	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50		ug/L	0.50	0.45	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*101*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*96*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*103*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*100*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-9 121118 SC52617-12	60284002	Ground Water	11-Dec-18 10:35	13-Dec-18

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	E624.1	11-Dec-18 10:35	16-Dec-18 13:33	11301	460155A	
79-34-5	1,1,2,2-tetrachloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50		ug/L	0.50	0.50	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	**13**		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 0.50		ug/L	0.50	0.42	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 1.0		ug/L	1.0	0.50	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50		ug/L	0.50	0.45	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	**0.88**		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
79-01-6	Trichloroethene	**58**		ug/L	0.50	0.25	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-01-4	Vinyl chloride	**2.0**		ug/L	0.50	0.25	1	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*100*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*95*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*104*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*101*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-10 121118	60284002	Ground Water	11-Dec-18 11:05	13-Dec-18
SC52617-13				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	E624.1	11-Dec-18 11:05	16-Dec-18 13:54	11301	460155A	
79-34-5	1,1,2,2-tetrachloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50		ug/L	0.50	0.50	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 0.50		ug/L	0.50	0.42	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 1.0		ug/L	1.0	0.50	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50		ug/L	0.50	0.45	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*101*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*96*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*103*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*100*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-8 121118	60284002	Ground Water	11-Dec-18 11:45	13-Dec-18
SC52617-14				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	E624.1	11-Dec-18 11:45	17-Dec-18 18:14	11301	460366A	
79-34-5	1,1,2,2-tetrachloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50		ug/L	0.50	0.50	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 0.50		ug/L	0.50	0.42	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 1.0		ug/L	1.0	0.50	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50		ug/L	0.50	0.45	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*101*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*95*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*103*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*101*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-6 121118 SC52617-15	60284002	Ground Water	11-Dec-18 14:15	13-Dec-18

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	**16**		ug/L	2.5	1.3	5	E624.1	11-Dec-18 14:15	17-Dec-18 18:36	11301	460366A	
79-34-5	1,1,2,2-tetrachloroethane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	**170**		ug/L	2.5	1.3	5	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
71-43-2	Benzene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
75-25-2	Bromoform	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
74-83-9	Bromomethane	< 2.5		ug/L	2.5	2.5	5	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
108-90-7	Chlorobenzene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
75-00-3	Chloroethane	**4.3**		ug/L	2.5	1.3	5	"	"	"	"	"	
67-66-3	Chloroform	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
74-87-3	Chloromethane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	**79**		ug/L	2.5	1.3	5	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 2.0		ug/L	2.0	1.3	5	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
100-41-4	Ethylbenzene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 2.5		ug/L	2.5	2.1	5	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 5.0		ug/L	5.0	2.5	5	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
95-47-6	o-Xylene	< 2.5		ug/L	2.5	2.3	5	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
108-88-3	Toluene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 2.0		ug/L	2.0	1.3	5	"	"	"	"	"	
79-01-6	Trichloroethene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
75-01-4	Vinyl chloride	**390**		ug/L	2.5	1.3	5	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*102*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*95*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*103*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*100*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-17 121118 SC52617-16	60284002	Ground Water	11-Dec-18 14:30	13-Dec-18

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 200		ug/L	200	100	400	E624.1	11-Dec-18 14:30	17-Dec-18 14:21	11301	460364A	
79-34-5	1,1,2,2-tetrachloroethane	< 200		ug/L	200	100	400	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 200		ug/L	200	100	400	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 200		ug/L	200	100	400	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	**620**		ug/L	200	100	400	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 200		ug/L	200	100	400	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 200		ug/L	200	100	400	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 200		ug/L	200	100	400	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 200		ug/L	200	100	400	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 200		ug/L	200	100	400	"	"	"	"	"	
71-43-2	Benzene	< 200		ug/L	200	100	400	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 200		ug/L	200	100	400	"	"	"	"	"	
75-25-2	Bromoform	< 200		ug/L	200	100	400	"	"	"	"	"	
74-83-9	Bromomethane	< 200		ug/L	200	200	400	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 200		ug/L	200	100	400	"	"	"	"	"	
108-90-7	Chlorobenzene	< 200		ug/L	200	100	400	"	"	"	"	"	
75-00-3	Chloroethane	< 200		ug/L	200	100	400	"	"	"	"	"	
67-66-3	Chloroform	< 200		ug/L	200	100	400	"	"	"	"	"	
74-87-3	Chloromethane	< 200		ug/L	200	100	400	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	**85,000**		ug/L	500	250	1000	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 160		ug/L	160	100	400	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 200		ug/L	200	100	400	"	"	"	"	"	
100-41-4	Ethylbenzene	< 200		ug/L	200	100	400	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 200		ug/L	200	170	400	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 400		ug/L	400	200	400	"	"	"	"	"	
75-09-2	Methylene chloride	< 200		ug/L	200	100	400	"	"	"	"	"	
95-47-6	o-Xylene	< 200		ug/L	200	180	400	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 200		ug/L	200	100	400	"	"	"	"	"	
108-88-3	Toluene	< 200		ug/L	200	100	400	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	**150**	J	ug/L	200	100	400	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 160		ug/L	160	100	400	"	"	"	"	"	
79-01-6	Trichloroethene	**88,000**		ug/L	500	250	1000	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 200		ug/L	200	100	400	"	"	"	"	"	
75-01-4	Vinyl chloride	**2,800**		ug/L	200	100	400	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*102*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*95*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*101*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*102*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-15 121218 SC52617-17	60284002	Ground Water	12-Dec-18 09:40	13-Dec-18

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	**5.8**		ug/L	2.5	1.3	5	E624.1	12-Dec-18 09:40	17-Dec-18 19:39	11301	460366A	
79-34-5	1,1,2,2-tetrachloroethane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	**4.4**		ug/L	2.5	1.3	5	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	**4.8**		ug/L	2.5	1.3	5	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
71-43-2	Benzene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
75-25-2	Bromoform	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
74-83-9	Bromomethane	< 2.5		ug/L	2.5	2.5	5	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
108-90-7	Chlorobenzene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
75-00-3	Chloroethane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
67-66-3	Chloroform	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
74-87-3	Chloromethane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	**480**		ug/L	2.5	1.3	5	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 2.0		ug/L	2.0	1.3	5	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
100-41-4	Ethylbenzene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 2.5		ug/L	2.5	2.1	5	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 5.0		ug/L	5.0	2.5	5	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
95-47-6	o-Xylene	< 2.5		ug/L	2.5	2.3	5	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
108-88-3	Toluene	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	**3.5**		ug/L	2.5	1.3	5	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 2.0		ug/L	2.0	1.3	5	"	"	"	"	"	
79-01-6	Trichloroethene	**1,200**		ug/L	10	5.0	20	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 2.5		ug/L	2.5	1.3	5	"	"	"	"	"	
75-01-4	Vinyl chloride	**56**		ug/L	2.5	1.3	5	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*102*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*96*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*102*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*101*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-5 121218 SC52617-18	60284002	Ground Water	12-Dec-18 11:00	13-Dec-18

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	**0.42**	J	ug/L	0.50	0.25	1	E624.1	12-Dec-18 11:00	16-Dec-18 14:15	11301	460155A	
79-34-5	1,1,2,2-tetrachloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	**19**		ug/L	0.50	0.25	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	**0.59**		ug/L	0.50	0.25	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50		ug/L	0.50	0.50	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	**60**		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 0.50		ug/L	0.50	0.42	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 1.0		ug/L	1.0	0.50	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50		ug/L	0.50	0.45	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	**0.42**	J	ug/L	0.50	0.25	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
79-01-6	Trichloroethene	**9.6**		ug/L	0.50	0.25	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-01-4	Vinyl chloride	**21**		ug/L	0.50	0.25	1	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*101*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*96*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*102*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*99*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-18 121218 SC52617-19	60284002	Ground Water	12-Dec-18 12:50	13-Dec-18

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	E624.1	12-Dec-18 12:50	16-Dec-18 14:37	11301	460155A	
79-34-5	1,1,2,2-tetrachloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	**3.1**		ug/L	0.50	0.25	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	**0.90**		ug/L	0.50	0.25	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50		ug/L	0.50	0.50	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	**150**		ug/L	5.0	2.5	10	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 0.50		ug/L	0.50	0.42	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 1.0		ug/L	1.0	0.50	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50		ug/L	0.50	0.45	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	**1.2**		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
79-01-6	Trichloroethene	**0.55**		ug/L	0.50	0.25	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-01-4	Vinyl chloride	**170**		ug/L	5.0	2.5	10	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*101*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*97*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*101*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*100*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-12 121218 SC52617-20	60284002	Ground Water	12-Dec-18 14:10	13-Dec-18

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	E624.1	12-Dec-18 14:10	17-Dec-18 11:10	11301	460364A	
79-34-5	1,1,2,2-tetrachloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	1.0		ug/L	0.50	0.25	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50		ug/L	0.50	0.50	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 0.50		ug/L	0.50	0.42	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 1.0		ug/L	1.0	0.50	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50		ug/L	0.50	0.45	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*100*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*97*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*104*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*100*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-1 121218 SC52617-21	60284002	Ground Water	12-Dec-18 15:30	13-Dec-18

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	E624.1	12-Dec-18 15:30	16-Dec-18 15:20	11301	460155A	
79-34-5	1,1,2,2-tetrachloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50		ug/L	0.50	0.50	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 0.50		ug/L	0.50	0.42	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 1.0		ug/L	1.0	0.50	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50		ug/L	0.50	0.45	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*101*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*95*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*101*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*99*			*70-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Trip Blank SC52617-22	60284002	Trip Blank	12-Dec-18 00:00	13-Dec-18

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Subcontracted Analyses													
Subcontracted Analyses													
*Analysis performed by Phoenix Environmental Labs, Inc. * - CT007*													
71-55-6	1,1,1-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	E624.1	12-Dec-18	16-Dec-18 12:07	11301	460155A	
79-34-5	1,1,2,2-tetrachloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
71-43-2	Benzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-25-2	Bromoform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-83-9	Bromomethane	< 0.50		ug/L	0.50	0.50	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-00-3	Chloroethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
67-66-3	Chloroform	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
74-87-3	Chloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
179601-23-1	m&p-Xylene	< 0.50		ug/L	0.50	0.42	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether (MTBE)	< 1.0		ug/L	1.0	0.50	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
95-47-6	o-Xylene	< 0.50		ug/L	0.50	0.45	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
108-88-3	Toluene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.40		ug/L	0.40	0.25	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 0.50		ug/L	0.50	0.25	1	"	"	"	"	"	
Surrogate recoveries:													
2199-69-1	*% 1,2-dichlorobenzene-d4*	*100*			*70-130 %*			"	"	"	"	"	
460-00-4	*% Bromofluorobenzene*	*97*			*70-130 %*			"	"	"	"	"	
1868-53-7	*% Dibromofluoromethane*	*102*			*70-130 %*			"	"	"	"	"	
2037-26-5	*% Toluene-d8*	*100*			*70-130 %*			"	"	"	"	"	

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460149A - E624.1										
BLK (CC14404-BLK)						Prepared: Analyzed: 14-Dec-18				
m&p-Xylene	**ND**		ug/L	1.0			ND	-		
Chlorobenzene	**ND**		ug/L	1.0			ND	-		
Chloroethane	**ND**		ug/L	1.0			ND	-		
Chloroform	**ND**		ug/L	1.0			ND	-		
Chloromethane	**ND**		ug/L	1.0			ND	-		
cis-1,2-Dichloroethene	**ND**		ug/L	1.0			ND	-		
cis-1,3-Dichloropropene	**ND**		ug/L	0.40			ND	-		
trans-1,3-Dichloropropene	**ND**		ug/L	0.40			ND	-		
Ethylbenzene	**ND**		ug/L	1.0			ND	-		
Bromoform	**ND**		ug/L	1.0			ND	-		
Methyl tert-butyl ether (MTBE)	**ND**		ug/L	1.0			ND	-		
Methylene chloride	**ND**		ug/L	1.0			ND	-		
o-Xylene	**ND**		ug/L	1.0			ND	-		
Tetrachloroethene	**ND**		ug/L	1.0			ND	-		
Toluene	**ND**		ug/L	1.0			ND	-		
trans-1,2-Dichloroethene	**ND**		ug/L	1.0			ND	-		
Dibromochloromethane	**ND**		ug/L	0.50			ND	-		
1,2-Dichlorobenzene	**ND**		ug/L	1.0			ND	-		
Trichlorofluoromethane	**ND**		ug/L	1.0			ND	-		
Trichloroethene	**ND**		ug/L	1.0			ND	-		
1,1,1-Trichloroethane	**ND**		ug/L	1.0			ND	-		
1,1,2,2-tetrachloroethane	**ND**		ug/L	0.50			ND	-		
1,1,2-Trichloroethane	**ND**		ug/L	1.0			ND	-		
Carbon tetrachloride	**ND**		ug/L	1.0			ND	-		
1,1-Dichloroethene	**ND**		ug/L	1.0			ND	-		
Bromomethane	**ND**		ug/L	1.0			ND	-		
1,2-Dichloroethane	**ND**		ug/L	1.0			ND	-		
1,2-Dichloropropane	**ND**		ug/L	1.0			ND	-		
1,3-Dichlorobenzene	**ND**		ug/L	1.0			ND	-		
1,4-Dichlorobenzene	**ND**		ug/L	1.0			ND	-		
Benzene	**ND**		ug/L	0.70			ND	-		
Bromodichloromethane	**ND**		ug/L	0.50			ND	-		
Vinyl chloride	**ND**		ug/L	1.0			ND	-		
1,1-Dichloroethane	**ND**		ug/L	1.0			ND	-		
Surrogate: % 1,2-dichlorobenzene-d4	*102*		ug/L		*30*		*102*	*70-130*		
Surrogate: % Dibromofluoromethane	*108*		ug/L		*30*		*108*	*70-130*		
Surrogate: % Bromofluorobenzene	*94*		ug/L		*30*		*94*	*70-130*		
Surrogate: % Toluene-d8	*96*		ug/L		*30*		*96*	*70-130*		
LCS (CC14404-LCS)						Prepared: Analyzed: 14-Dec-18				
1,2-Dichloroethane	**19.29**		ug/L	1.0	20		96	68-132		20
Chlorobenzene	**19.38**		ug/L	1.0	20		97	66-134		20
Trichlorofluoromethane	**18.83**		ug/L	1.0	20		94	48-152		20
Bromomethane	**15.93**		ug/L	1.0	20		80	40-160		20
Bromoform	**24.37**		ug/L	1.0	20		122	71-129		20
Bromodichloromethane	**19.26**		ug/L	0.50	20		96	65-135		20
Benzene	**18.40**		ug/L	0.70	20		92	64-136		20
1,4-Dichlorobenzene	**19.97**		ug/L	1.0	20		100	63-137		20
1,3-Dichlorobenzene	**20.30**		ug/L	1.0	20		101	73-127		20
1,2-Dichloropropane	**18.16**		ug/L	1.0	20		91	40-160		20
Chloroethane	**16.83**		ug/L	1.0	20		84	40-160		20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460149A - E624.1										
LCS (CC14404-LCS)						Prepared:	Analyzed: 14-Dec-18			
1,2-Dichlorobenzene	**20.33**		ug/L	1.0	20		102	63-137		20
1,1-Dichloroethene	**19.62**		ug/L	1.0	20		98	50-150		20
1,1-Dichloroethane	**18.89**		ug/L	1.0	20		94	72-128		20
1,1,2-Trichloroethane	**19.94**		ug/L	1.0	20		100	71-129		20
1,1,2,2-tetrachloroethane	**23.40**		ug/L	0.50	20		117	60-140		20
1,1,1-Trichloroethane	**19.07**		ug/L	1.0	20		95	75-125		20
Vinyl chloride	**18.92**		ug/L	1.0	20		95	40-160		20
o-Xylene	**20.08**		ug/L	1.0	20		100	70-130		30
Trichloroethene	**19.69**		ug/L	1.0	20		98	66-134		20
trans-1,3-Dichloropropene	**19.49**		ug/L	0.40	20		97	50-150		20
trans-1,2-Dichloroethene	**19.94**		ug/L	1.0	20		100	69-131		20
Carbon tetrachloride	**19.70**		ug/L	1.0	20		99	73-127		20
Tetrachloroethene	**19.93**		ug/L	1.0	20		100	73-127		20
Chloroform	**18.74**		ug/L	1.0	20		94	67-133		20
Methylene chloride	**18.91**		ug/L	1.0	20		95	60-140		20
Methyl tert-butyl ether (MTBE)	**18.64**		ug/L	1.0	20		93	70-130		30
m&p-Xylene	**39.54**		ug/L	1.0	40		99	70-130		30
Ethylbenzene	**19.56**		ug/L	1.0	20		98	59-141		20
Dibromochloromethane	**22.67**		ug/L	0.50	20		113	67-133		20
cis-1,3-Dichloropropene	**18.61**		ug/L	0.40	20		93	40-160		20
cis-1,2-Dichloroethene	**18.49**		ug/L	1.0	20		92	69-131		20
Chloromethane	**16.89**		ug/L	1.0	20		84	40-160		20
Toluene	**17.98**		ug/L	1.0	20		90	74-126		20
Surrogate: % 1,2-dichlorobenzene-d4	*30.23*		ug/L		*30*		*101*	*70-130*		
Surrogate: % Toluene-d8	*28.89*		ug/L		*30*		*96*	*70-130*		
Surrogate: % Dibromofluoromethane	*31.02*		ug/L		*30*		*103*	*70-130*		
Surrogate: % Bromofluorobenzene	*29.31*		ug/L		*30*		*98*	*70-130*		
LCSD (CC14404-LCSD)						Prepared:	Analyzed: 14-Dec-18			
1,2-Dichloropropane	**18.51**		ug/L	1.0	20		93	40-160	2.2	20
o-Xylene	**20.09**		ug/L	1.0	20		100	70-130	0.0	30
Chloroform	**18.67**		ug/L	1.0	20		93	67-133	1.1	20
Chloromethane	**16.37**		ug/L	1.0	20		82	40-160	2.4	20
cis-1,2-Dichloroethene	**18.83**		ug/L	1.0	20		94	69-131	2.2	20
cis-1,3-Dichloropropene	**18.67**		ug/L	0.40	20		93	40-160	0.0	20
Dibromochloromethane	**22.95**		ug/L	0.50	20		115	67-133	1.8	20
Ethylbenzene	**19.18**		ug/L	1.0	20		96	59-141	2.1	20
Chloroethane	**17.08**		ug/L	1.0	20		85	40-160	1.2	20
1,2-Dichlorobenzene	**20.23**		ug/L	1.0	20		101	63-137	1.0	20
m&p-Xylene	**39.54**		ug/L	1.0	40		99	70-130	0.0	30
Tetrachloroethene	**17.49**		ug/L	1.0	20		87	73-127	13.9	20
Toluene	**17.92**		ug/L	1.0	20		90	74-126	0.0	20
trans-1,2-Dichloroethene	**19.53**		ug/L	1.0	20		98	69-131	2.0	20
trans-1,3-Dichloropropene	**18.78**		ug/L	0.40	20		94	50-150	3.1	20
Trichloroethene	**19.10**		ug/L	1.0	20		95	66-134	3.1	20
Trichlorofluoromethane	**18.20**		ug/L	1.0	20		91	48-152	3.2	20
Vinyl chloride	**18.09**		ug/L	1.0	20		90	40-160	5.4	20
Methyl tert-butyl ether (MTBE)	**18.70**		ug/L	1.0	20		93	70-130	0.0	30
1,1-Dichloroethane	**18.59**		ug/L	1.0	20		93	72-128	1.1	20
Methylene chloride	**18.64**		ug/L	1.0	20		93	60-140	2.1	20
Chlorobenzene	**19.42**		ug/L	1.0	20		97	66-134	0.0	20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460149A - E624.1										
LCSD (CC14404-LCSD)					Prepared: Analyzed: 14-Dec-18					
1,1,1-Trichloroethane	**18.54**		ug/L	1.0	20		93	75-125	2.1	20
1,1,2-Trichloroethane	**19.41**		ug/L	1.0	20		97	71-129	3.0	20
1,1-Dichloroethene	**18.90**		ug/L	1.0	20		95	50-150	3.1	20
1,2-Dichloroethane	**19.49**		ug/L	1.0	20		97	68-132	1.0	20
Bromomethane	**16.12**		ug/L	1.0	20		81	40-160	1.2	20
1,4-Dichlorobenzene	**19.72**		ug/L	1.0	20		99	63-137	1.0	20
Carbon tetrachloride	**19.70**		ug/L	1.0	20		99	73-127	0.0	20
Benzene	**18.37**		ug/L	0.70	20		92	64-136	0.0	20
1,1,2,2-tetrachloroethane	**23.15**		ug/L	0.50	20		116	60-140	0.9	20
Bromodichloromethane	**18.98**		ug/L	0.50	20		95	65-135	1.0	20
Bromoform	**24.76**		ug/L	1.0	20		124	71-129	1.6	20
1,3-Dichlorobenzene	**20.18**		ug/L	1.0	20		101	73-127	0.0	20
Surrogate: % Bromofluorobenzene	*29.52*		ug/L		*30*		*98*	*70-130*		
Surrogate: % Toluene-d8	*28.64*		ug/L		*30*		*95*	*70-130*		
Surrogate: % Dibromofluoromethane	*30.71*		ug/L		*30*		*102*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*30.24*		ug/L		*30*		*101*	*70-130*		
MS (CC14404-MS)			**Source: CC14404**		Prepared: Analyzed: 14-Dec-18					
1,2-Dichloropropane	**18.08**		ug/L	1.0	20		90	40-160		20
Carbon tetrachloride	**18.72**		ug/L	1.0	20		94	73-127		20
Bromoform	**23.49**		ug/L	1.0	20		117	71-129		20
Bromodichloromethane	**18.63**		ug/L	0.50	20		93	65-135		20
Benzene	**18.00**		ug/L	0.70	20		90	64-136		20
1,4-Dichlorobenzene	**19.65**		ug/L	1.0	20		98	63-137		20
1,3-Dichlorobenzene	**19.73**		ug/L	1.0	20		99	73-127		20
Bromomethane	**14.29**		ug/L	1.0	20		71	40-160		20
1,2-Dichloroethane	**19.44**		ug/L	1.0	20		97	68-132		20
1,2-Dichlorobenzene	**20.05**		ug/L	1.0	20		100	63-137		20
1,1-Dichloroethene	**18.43**		ug/L	1.0	20		92	50-150		20
1,1-Dichloroethane	**18.60**		ug/L	1.0	20		93	72-128		20
1,1,2-Trichloroethane	**19.56**		ug/L	1.0	20		98	71-129		20
1,1,2,2-tetrachloroethane	**22.89**		ug/L	0.50	20		114	60-140		20
Vinyl chloride	**17.55**		ug/L	1.0	20		88	40-160		20
Chlorobenzene	**19.08**		ug/L	1.0	20		95	66-134		20
1,1,1-Trichloroethane	**18.50**		ug/L	1.0	20		93	75-125		20
Methyl tert-butyl ether (MTBE)	**18.43**		ug/L	1.0	20		92	70-130		30
Chloroethane	**18.63**		ug/L	1.0	20		93	40-160		20
Trichlorofluoromethane	**18.57**		ug/L	1.0	20		93	48-152		20
trans-1,3-Dichloropropene	**18.15**		ug/L	0.40	20		91	50-150		20
trans-1,2-Dichloroethene	**19.44**		ug/L	1.0	20		97	69-131		20
Toluene	**17.55**		ug/L	1.0	20		88	74-126		20
Tetrachloroethene	**18.42**		ug/L	1.0	20		92	73-127		20
Trichloroethene	**18.65**		ug/L	1.0	20		93	66-134		20
Methylene chloride	**18.55**		ug/L	1.0	20		93	60-140		20
m&p-Xylene	**38.58**		ug/L	1.0	40		96	70-130		30
Ethylbenzene	**19.01**		ug/L	1.0	20		95	59-141		20
Dibromochloromethane	**22.12**		ug/L	0.50	20		111	67-133		20
cis-1,3-Dichloropropene	**17.76**		ug/L	0.40	20		89	40-160		20
cis-1,2-Dichloroethene	**18.41**		ug/L	1.0	20		92	69-131		20
Chloromethane	**16.20**		ug/L	1.0	20		81	40-160		20
Chloroform	**18.65**		ug/L	1.0	20		93	67-133		20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460149A - E624.1										
MS (CC14404-MS)			**Source: CC14404**			Prepared: Analyzed: 14-Dec-18				
o-Xylene	**19.87**		ug/L	1.0	20		99	70-130		30
Surrogate: % Dibromofluoromethane	*31.50*		ug/L		*20*		*105*	*70-130*		
Surrogate: % Toluene-d8	*28.50*		ug/L		*20*		*95*	*70-130*		
Surrogate: % Bromofluorobenzene	*28.91*		ug/L		*20*		*96*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*29.91*		ug/L		*20*		*100*	*70-130*		
MSD (CC14404-MSD)			**Source: CC14404**			Prepared: Analyzed: 14-Dec-18				
Chlorobenzene	**19.68**		ug/L	1.0	20		98	66-134	3.1	20
Carbon tetrachloride	**19.79**		ug/L	1.0	20		99	73-127	5.2	20
Bromomethane	**16.23**		ug/L	1.0	20		81	40-160	13.2	20
Bromoform	**25.28**		ug/L	1.0	20		126	71-129	7.4	20
Bromodichloromethane	**19.33**		ug/L	0.50	20		97	65-135	4.2	20
Benzene	**18.47**		ug/L	0.70	20		92	64-136	2.2	20
1,4-Dichlorobenzene	**19.61**		ug/L	1.0	20		98	63-137	0.0	20
1,2-Dichloropropane	**18.54**		ug/L	1.0	20		93	40-160	3.3	20
1,2-Dichlorobenzene	**20.22**		ug/L	1.0	20		101	63-137	1.0	20
1,2-Dichloroethane	**19.61**		ug/L	1.0	20		98	68-132	1.0	20
1,1-Dichloroethane	**18.83**		ug/L	1.0	20		94	72-128	1.1	20
1,1,2-Trichloroethane	**19.75**		ug/L	1.0	20		99	71-129	1.0	20
1,1,2,2-tetrachloroethane	**23.48**		ug/L	0.50	20		117	60-140	2.6	20
1,1,1-Trichloroethane	**19.04**		ug/L	1.0	20		95	75-125	2.1	20
Chloroethane	**18.75**		ug/L	1.0	20		94	40-160	1.1	20
1,3-Dichlorobenzene	**19.85**		ug/L	1.0	20		99	73-127	0.0	20
o-Xylene	**20.40**		ug/L	1.0	20		102	70-130	3.0	30
Chloroform	**19.10**		ug/L	1.0	20		96	67-133	3.2	20
1,1-Dichloroethene	**19.69**		ug/L	1.0	20		98	50-150	6.3	20
Vinyl chloride	**18.26**		ug/L	1.0	20		91	40-160	3.4	20
Trichlorofluoromethane	**18.76**		ug/L	1.0	20		94	48-152	1.1	20
Trichloroethene	**19.39**		ug/L	1.0	20		97	66-134	4.2	20
trans-1,3-Dichloropropene	**18.69**		ug/L	0.40	20		93	50-150	2.2	20
trans-1,2-Dichloroethene	**20.15**		ug/L	1.0	20		101	69-131	4.0	20
Tetrachloroethene	**19.27**		ug/L	1.0	20		96	73-127	4.3	20
Methylene chloride	**19.00**		ug/L	1.0	20		95	60-140	2.1	20
Methyl tert-butyl ether (MTBE)	**18.97**		ug/L	1.0	20		95	70-130	3.2	30
m&p-Xylene	**39.76**		ug/L	1.0	40		99	70-130	3.1	30
Ethylbenzene	**19.26**		ug/L	1.0	20		96	59-141	1.0	20
Dibromochloromethane	**23.07**		ug/L	0.50	20		115	67-133	3.5	20
cis-1,3-Dichloropropene	**18.09**		ug/L	0.40	20		90	40-160	1.1	20
cis-1,2-Dichloroethene	**18.72**		ug/L	1.0	20		94	69-131	2.2	20
Chloromethane	**16.71**		ug/L	1.0	20		84	40-160	3.6	20
Toluene	**18.04**		ug/L	1.0	20		90	74-126	2.2	20
Surrogate: % Toluene-d8	*28.76*		ug/L		*20*		*96*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*30.09*		ug/L		*20*		*100*	*70-130*		
Surrogate: % Dibromofluoromethane	*31.70*		ug/L		*20*		*106*	*70-130*		
Surrogate: % Bromofluorobenzene	*29.74*		ug/L		*20*		*99*	*70-130*		
Batch 460155A - E624.1										
BLK (CC14807-BLK)						Prepared: Analyzed: 16-Dec-18				
1,2-Dichloropropane	**ND**		ug/L	1.0			ND	-		
Carbon tetrachloride	**ND**		ug/L	1.0			ND	-		
Bromomethane	**ND**		ug/L	1.0			ND	-		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460155A - E624.1										
BLK (CC14807-BLK)						Prepared: Analyzed: 16-Dec-18				
Bromoform	**ND**		ug/L	1.0			ND	-		
Bromodichloromethane	**ND**		ug/L	0.50			ND	-		
Benzene	**ND**		ug/L	0.70			ND	-		
1,4-Dichlorobenzene	**ND**		ug/L	1.0			ND	-		
1,1,1-Trichloroethane	**ND**		ug/L	1.0			ND	-		
o-Xylene	**ND**		ug/L	1.0			ND	-		
Chlorobenzene	**ND**		ug/L	1.0			ND	-		
1,2-Dichloroethane	**ND**		ug/L	1.0			ND	-		
1,2-Dichlorobenzene	**ND**		ug/L	1.0			ND	-		
1,1-Dichloroethene	**ND**		ug/L	1.0			ND	-		
1,1-Dichloroethane	**ND**		ug/L	1.0			ND	-		
1,1,2-Trichloroethane	**ND**		ug/L	1.0			ND	-		
1,1,2,2-tetrachloroethane	**ND**		ug/L	0.50			ND	-		
1,3-Dichlorobenzene	**ND**		ug/L	1.0			ND	-		
Toluene	**ND**		ug/L	1.0			ND	-		
Vinyl chloride	**ND**		ug/L	1.0			ND	-		
Trichlorofluoromethane	**ND**		ug/L	1.0			ND	-		
Trichloroethene	**ND**		ug/L	1.0			ND	-		
Methyl tert-butyl ether (MTBE)	**ND**		ug/L	1.0			ND	-		
trans-1,2-Dichloroethene	**ND**		ug/L	1.0			ND	-		
Chloroethane	**ND**		ug/L	1.0			ND	-		
Tetrachloroethene	**ND**		ug/L	1.0			ND	-		
Methylene chloride	**ND**		ug/L	1.0			ND	-		
m&p-Xylene	**ND**		ug/L	1.0			ND	-		
Ethylbenzene	**ND**		ug/L	1.0			ND	-		
Dibromochloromethane	**ND**		ug/L	0.50			ND	-		
cis-1,3-Dichloropropene	**ND**		ug/L	0.40			ND	-		
cis-1,2-Dichloroethene	**ND**		ug/L	1.0			ND	-		
Chloromethane	**ND**		ug/L	1.0			ND	-		
Chloroform	**ND**		ug/L	1.0			ND	-		
trans-1,3-Dichloropropene	**ND**		ug/L	0.40			ND	-		
Surrogate: % Toluene-d8	*100*		ug/L		*30*		*100*	*70-130*		
Surrogate: % Dibromofluoromethane	*101*		ug/L		*30*		*101*	*70-130*		
Surrogate: % Bromofluorobenzene	*95*		ug/L		*30*		*95*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*102*		ug/L		*30*		*102*	*70-130*		
LCS (CC14807-LCS)						Prepared: Analyzed: 16-Dec-18				
Trichloroethene	**23.24**		ug/L	1.0	20		116	66-134		20
Methyl tert-butyl ether (MTBE)	**18.50**		ug/L	1.0	20		93	70-130		30
Chloroform	**21.71**		ug/L	1.0	20		109	67-133		20
Chloromethane	**18.55**		ug/L	1.0	20		93	40-160		20
cis-1,2-Dichloroethene	**22.52**		ug/L	1.0	20		113	69-131		20
cis-1,3-Dichloropropene	**22.96**		ug/L	0.40	20		115	40-160		20
Dibromochloromethane	**25.39**		ug/L	0.50	20		127	67-133		20
Trichlorofluoromethane	**18.16**		ug/L	1.0	20		91	48-152		20
m&p-Xylene	**47.33**		ug/L	1.0	40		118	70-130		30
Carbon tetrachloride	**21.72**		ug/L	1.0	20		109	73-127		20
Methylene chloride	**21.13**		ug/L	1.0	20		106	60-140		20
o-Xylene	**23.90**		ug/L	1.0	20		119	70-130		30
Tetrachloroethene	**23.91**		ug/L	1.0	20		120	73-127		20
Toluene	**22.96**		ug/L	1.0	20		115	74-126		20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460155A - E624.1										
LCS (CC14807-LCS)						Prepared: Analyzed: 16-Dec-18				
Vinyl chloride	**19.32**		ug/L	1.0	20		97	40-160		20
trans-1,2-Dichloroethene	**22.99**		ug/L	1.0	20		115	69-131		20
Ethylbenzene	**23.05**		ug/L	1.0	20		115	59-141		20
1,3-Dichlorobenzene	**22.48**		ug/L	1.0	20		112	73-127		20
1,1,1-Trichloroethane	**22.72**		ug/L	1.0	20		114	75-125		20
1,1,2,2-tetrachloroethane	**23.71**		ug/L	0.50	20		119	60-140		20
1,1,2-Trichloroethane	**23.06**		ug/L	1.0	20		115	71-129		20
1,1-Dichloroethane	**22.50**		ug/L	1.0	20		113	72-128		20
1,1-Dichloroethene	**22.74**		ug/L	1.0	20		114	50-150		20
1,2-Dichlorobenzene	**22.40**		ug/L	1.0	20		112	63-137		20
Chloroethane	**17.96**		ug/L	1.0	20		90	40-160		20
1,2-Dichloropropane	**22.13**		ug/L	1.0	20		111	40-160		20
Chlorobenzene	**22.60**		ug/L	1.0	20		113	66-134		20
1,4-Dichlorobenzene	**22.40**		ug/L	1.0	20		112	63-137		20
Benzene	**22.48**		ug/L	0.70	20		112	64-136		20
Bromodichloromethane	**22.45**		ug/L	0.50	20		112	65-135		20
Bromoform	**25.45**		ug/L	1.0	20		127	71-129		20
Bromomethane	**18.49**		ug/L	1.0	20		92	40-160		20
trans-1,3-Dichloropropene	**23.47**		ug/L	0.40	20		117	50-150		20
1,2-Dichloroethane	**22.84**		ug/L	1.0	20		114	68-132		20
Surrogate: % 1,2-dichlorobenzene-d4	*29.91*		ug/L		*30*		*100*	*70-130*		
Surrogate: % Bromofluorobenzene	*29.90*		ug/L		*30*		*100*	*70-130*		
Surrogate: % Dibromofluoromethane	*30.04*		ug/L		*30*		*100*	*70-130*		
Surrogate: % Toluene-d8	*29.93*		ug/L		*30*		*100*	*70-130*		
LCSD (CC14807-LCSD)						Prepared: Analyzed: 16-Dec-18				
1,2-Dichlorobenzene	**20.35**		ug/L	1.0	20		102	63-137	9.3	20
Vinyl chloride	**17.82**		ug/L	1.0	20		89	40-160	8.6	20
Bromomethane	**17.86**		ug/L	1.0	20		89	40-160	3.3	20
Bromoform	**23.72**		ug/L	1.0	20		119	71-129	6.5	20
Bromodichloromethane	**20.38**		ug/L	0.50	20		102	65-135	9.3	20
Benzene	**20.08**		ug/L	0.70	20		100	64-136	11.3	20
1,4-Dichlorobenzene	**20.37**		ug/L	1.0	20		102	63-137	9.3	20
1,3-Dichlorobenzene	**20.31**		ug/L	1.0	20		102	73-127	9.3	20
Chlorobenzene	**20.64**		ug/L	1.0	20		103	66-134	9.3	20
1,2-Dichloroethane	**20.46**		ug/L	1.0	20		102	68-132	11.1	20
Chloroethane	**15.56**		ug/L	1.0	20		78	40-160	14.3	20
1,1-Dichloroethene	**20.60**		ug/L	1.0	20		103	50-150	10.1	20
1,1-Dichloroethane	**20.55**		ug/L	1.0	20		103	72-128	9.3	20
1,1,2-Trichloroethane	**21.23**		ug/L	1.0	20		106	71-129	8.1	20
1,2-Dichloropropane	**19.78**		ug/L	1.0	20		99	40-160	11.4	20
Methyl tert-butyl ether (MTBE)	**18.78**		ug/L	1.0	20		94	70-130	1.1	30
1,1,2,2-tetrachloroethane	**21.61**		ug/L	0.50	20		108	60-140	9.7	20
1,1,1-Trichloroethane	**20.84**		ug/L	1.0	20		104	75-125	9.2	20
Trichloroethene	**20.50**		ug/L	1.0	20		103	66-134	11.9	20
trans-1,3-Dichloropropene	**22.13**		ug/L	0.40	20		111	50-150	5.3	20
trans-1,2-Dichloroethene	**20.29**		ug/L	1.0	20		101	69-131	13.0	20
Toluene	**20.79**		ug/L	1.0	20		104	74-126	10.0	20
Tetrachloroethene	**21.55**		ug/L	1.0	20		108	73-127	10.5	20
Carbon tetrachloride	**20.25**		ug/L	1.0	20		101	73-127	7.6	20
Methylene chloride	**18.73**		ug/L	1.0	20		94	60-140	12.0	20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460155A - E624.1										
LCSD (CC14807-LCSD)					Prepared: Analyzed: 16-Dec-18					
Trichlorofluoromethane	**17.44**		ug/L	1.0	20		87	48-152	4.5	20
m&p-Xylene	**42.87**		ug/L	1.0	40		107	70-130	9.8	30
Ethylbenzene	**20.69**		ug/L	1.0	20		103	59-141	11.0	20
Dibromochloromethane	**21.97**		ug/L	0.50	20		110	67-133	14.3	20
cis-1,3-Dichloropropene	**20.85**		ug/L	0.40	20		104	40-160	10.0	20
cis-1,2-Dichloroethene	**20.64**		ug/L	1.0	20		103	69-131	9.3	20
Chloromethane	**17.64**		ug/L	1.0	20		88	40-160	5.5	20
Chloroform	**20.07**		ug/L	1.0	20		100	67-133	8.6	20
o-Xylene	**21.40**		ug/L	1.0	20		107	70-130	10.6	30
Surrogate: % 1,2-dichlorobenzene-d4	*30.12*		ug/L		*30*		*100*	*70-130*		
Surrogate: % Bromofluorobenzene	*30.56*		ug/L		*30*		*102*	*70-130*		
Surrogate: % Dibromofluoromethane	*31.16*		ug/L		*30*		*104*	*70-130*		
Surrogate: % Toluene-d8	*30.04*		ug/L		*30*		*100*	*70-130*		
MS (CC14807-MS)			**Source: SC52617-22**		Prepared: Analyzed: 16-Dec-18					
1,1-Dichloroethene	**23.00**		ug/L	1.0	20	BRL	115	50-150		20
Chlorobenzene	**22.20**		ug/L	1.0	20	BRL	111	66-134		20
Carbon tetrachloride	**22.04**		ug/L	1.0	20	BRL	110	73-127		20
Bromomethane	**18.60**		ug/L	1.0	20	BRL	92	40-160		20
Bromoform	**24.08**		ug/L	1.0	20	BRL	120	71-129		20
Bromodichloromethane	**21.77**		ug/L	0.50	20	BRL	109	65-135		20
Benzene	**22.05**		ug/L	0.70	20	BRL	110	64-136		20
1,4-Dichlorobenzene	**21.83**		ug/L	1.0	20	BRL	109	63-137		20
Chloroethane	**18.86**		ug/L	1.0	20	BRL	94	40-160		20
1,2-Dichlorobenzene	**21.87**		ug/L	1.0	20	BRL	109	63-137		20
1,3-Dichlorobenzene	**21.90**		ug/L	1.0	20	BRL	110	73-127		20
1,1-Dichloroethane	**22.94**		ug/L	1.0	20	BRL	115	72-128		20
1,1,2-Trichloroethane	**22.46**		ug/L	1.0	20	BRL	112	71-129		20
1,1,2,2-tetrachloroethane	**23.79**		ug/L	0.50	20	BRL	119	60-140		20
1,1,1-Trichloroethane	**22.75**		ug/L	1.0	20	BRL	114	75-125		20
1,2-Dichloropropane	**21.20**		ug/L	1.0	20	BRL	106	40-160		20
Vinyl chloride	**19.45**		ug/L	1.0	20	BRL	97	40-160		20
Trichlorofluoromethane	**18.61**		ug/L	1.0	20	BRL	93	48-152		20
Trichloroethene	**22.78**		ug/L	1.0	20	BRL	114	66-134		20
trans-1,3-Dichloropropene	**21.15**		ug/L	0.40	20	BRL	106	50-150		20
trans-1,2-Dichloroethene	**23.58**		ug/L	1.0	20	BRL	118	69-131		20
Toluene	**22.47**		ug/L	1.0	20	BRL	112	74-126		20
Tetrachloroethene	**22.89**		ug/L	1.0	20	BRL	114	73-127		20
Chloroform	**22.18**		ug/L	1.0	20	BRL	111	67-133		20
o-Xylene	**23.41**		ug/L	1.0	20	BRL	117	70-130		30
Methylene chloride	**21.54**		ug/L	1.0	20	BRL	108	60-140		20
Methyl tert-butyl ether (MTBE)	**18.38**		ug/L	1.0	20	BRL	92	70-130		30
m&p-Xylene	**46.80**		ug/L	1.0	40	BRL	117	70-130		30
Ethylbenzene	**22.59**		ug/L	1.0	20	BRL	113	59-141		20
Dibromochloromethane	**24.33**		ug/L	0.50	20	BRL	122	67-133		20
cis-1,3-Dichloropropene	**21.13**		ug/L	0.40	20	BRL	106	40-160		20
cis-1,2-Dichloroethene	**22.65**		ug/L	1.0	20	BRL	113	69-131		20
Chloromethane	**18.39**		ug/L	1.0	20	BRL	92	40-160		20
1,2-Dichloroethane	**22.59**		ug/L	1.0	20	BRL	113	68-132		20
Surrogate: % Dibromofluoromethane	*31.02*		ug/L		*20*		*103*	*70-130*		
Surrogate: % Bromofluorobenzene	*30.83*		ug/L		*20*		*103*	*70-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460155A - E624.1										
MS (CC14807-MS)			**Source: SC52617-22**			Prepared: Analyzed: 16-Dec-18				
Surrogate: % 1,2-dichlorobenzene-d4	*30.38*		ug/L		*20*		*101*	*70-130*		
Surrogate: % Toluene-d8	*29.96*		ug/L		*20*		*100*	*70-130*		
MSD (CC14807-MSD)			**Source: SC52617-22**			Prepared: Analyzed: 16-Dec-18				
1,2-Dichlorobenzene	**21.60**		ug/L	1.0	20	BRL	108	63-137	0.9	20
Carbon tetrachloride	**21.04**		ug/L	1.0	20	BRL	105	73-127	4.7	20
Bromomethane	**18.19**		ug/L	1.0	20	BRL	89	40-160	3.3	20
Bromoform	**24.38**		ug/L	1.0	20	BRL	122	71-129	1.7	20
Bromodichloromethane	**21.56**		ug/L	0.50	20	BRL	108	65-135	0.9	20
Benzene	**21.42**		ug/L	0.70	20	BRL	107	64-136	2.8	20
1,4-Dichlorobenzene	**21.42**		ug/L	1.0	20	BRL	107	63-137	1.9	20
1,3-Dichlorobenzene	**21.50**		ug/L	1.0	20	BRL	108	73-127	1.8	20
1,2-Dichloroethane	**22.25**		ug/L	1.0	20	BRL	111	68-132	1.8	20
1,1-Dichloroethene	**21.83**		ug/L	1.0	20	BRL	109	50-150	5.4	20
1,1-Dichloroethane	**21.85**		ug/L	1.0	20	BRL	109	72-128	5.4	20
1,1,2-Trichloroethane	**22.25**		ug/L	1.0	20	BRL	111	71-129	0.9	20
1,1,2,2-tetrachloroethane	**24.21**		ug/L	0.50	20	BRL	121	60-140	1.7	20
1,1,1-Trichloroethane	**21.57**		ug/L	1.0	20	BRL	108	75-125	5.4	20
Vinyl chloride	**18.77**		ug/L	1.0	20	BRL	94	40-160	3.1	20
Toluene	**21.81**		ug/L	1.0	20	BRL	109	74-126	2.7	20
Chlorobenzene	**21.70**		ug/L	1.0	20	BRL	108	66-134	2.7	20
1,2-Dichloropropane	**21.09**		ug/L	1.0	20	BRL	105	40-160	0.9	20
Methyl tert-butyl ether (MTBE)	**18.38**		ug/L	1.0	20	BRL	92	70-130	0.0	30
Trichloroethene	**21.96**		ug/L	1.0	20	BRL	110	66-134	3.6	20
trans-1,3-Dichloropropene	**20.84**		ug/L	0.40	20	BRL	104	50-150	1.9	20
trans-1,2-Dichloroethene	**22.62**		ug/L	1.0	20	BRL	113	69-131	4.3	20
o-Xylene	**22.65**		ug/L	1.0	20	BRL	113	70-130	3.5	30
Tetrachloroethene	**22.09**		ug/L	1.0	20	BRL	110	73-127	3.6	20
Chloroethane	**17.20**		ug/L	1.0	20	BRL	86	40-160	8.9	20
Methylene chloride	**20.41**		ug/L	1.0	20	BRL	102	60-140	5.7	20
m&p-Xylene	**45.10**		ug/L	1.0	40	BRL	113	70-130	3.5	30
Ethylbenzene	**21.89**		ug/L	1.0	20	BRL	109	59-141	3.6	20
Dibromochloromethane	**23.68**		ug/L	0.50	20	BRL	118	67-133	3.3	20
cis-1,3-Dichloropropene	**20.92**		ug/L	0.40	20	BRL	105	40-160	0.9	20
cis-1,2-Dichloroethene	**21.99**		ug/L	1.0	20	BRL	110	69-131	2.7	20
Chloromethane	**17.46**		ug/L	1.0	20	BRL	87	40-160	5.6	20
Chloroform	**21.45**		ug/L	1.0	20	BRL	107	67-133	3.7	20
Trichlorofluoromethane	**17.84**		ug/L	1.0	20	BRL	89	48-152	4.4	20
Surrogate: % Dibromofluoromethane	*30.90*		ug/L		*20*		*103*	*70-130*		
Surrogate: % Bromofluorobenzene	*30.52*		ug/L		*20*		*102*	*70-130*		
Surrogate: % Toluene-d8	*29.91*		ug/L		*20*		*100*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*29.91*		ug/L		*20*		*100*	*70-130*		
Batch 460364A - E624.1										
BLK (CC14805-BLK)						Prepared: Analyzed: 17-Dec-18				
Tetrachloroethene	**ND**		ug/L	1.0			ND	-		
Chloroform	**ND**		ug/L	1.0			ND	-		
cis-1,2-Dichloroethene	**ND**		ug/L	1.0			ND	-		
cis-1,3-Dichloropropene	**ND**		ug/L	0.40			ND	-		
Dibromochloromethane	**ND**		ug/L	0.50			ND	-		
Ethylbenzene	**ND**		ug/L	1.0			ND	-		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460364A - E624.1										
BLK (CC14805-BLK)						Prepared: Analyzed: 17-Dec-18				
m&p-Xylene	**ND**		ug/L	1.0			ND	-		
Methyl tert-butyl ether (MTBE)	**ND**		ug/L	1.0			ND	-		
o-Xylene	**ND**		ug/L	1.0			ND	-		
Toluene	**ND**		ug/L	1.0			ND	-		
trans-1,2-Dichloroethene	**ND**		ug/L	1.0			ND	-		
trans-1,3-Dichloropropene	**ND**		ug/L	0.40			ND	-		
Trichloroethene	**ND**		ug/L	1.0			ND	-		
Trichlorofluoromethane	**ND**		ug/L	1.0			ND	-		
Vinyl chloride	**ND**		ug/L	1.0			ND	-		
Chloroethane	**ND**		ug/L	1.0			ND	-		
Methylene chloride	**ND**		ug/L	1.0			ND	-		
1,3-Dichlorobenzene	**ND**		ug/L	1.0			ND	-		
Chloromethane	**ND**		ug/L	1.0			ND	-		
1,1,2,2-tetrachloroethane	**ND**		ug/L	0.50			ND	-		
1,1,2-Trichloroethane	**ND**		ug/L	1.0			ND	-		
1,1-Dichloroethane	**ND**		ug/L	1.0			ND	-		
1,1-Dichloroethene	**ND**		ug/L	1.0			ND	-		
1,2-Dichlorobenzene	**ND**		ug/L	1.0			ND	-		
1,2-Dichloropropane	**ND**		ug/L	1.0			ND	-		
1,1,1-Trichloroethane	**ND**		ug/L	1.0			ND	-		
1,4-Dichlorobenzene	**ND**		ug/L	1.0			ND	-		
Benzene	**ND**		ug/L	0.70			ND	-		
Bromodichloromethane	**ND**		ug/L	0.50			ND	-		
Bromoform	**ND**		ug/L	1.0			ND	-		
Bromomethane	**ND**		ug/L	1.0			ND	-		
Carbon tetrachloride	**ND**		ug/L	1.0			ND	-		
Chlorobenzene	**ND**		ug/L	1.0			ND	-		
1,2-Dichloroethane	**ND**		ug/L	1.0			ND	-		
Surrogate: % Dibromofluoromethane	*103*		ug/L		*30*		*103*	*70-130*		
Surrogate: % Toluene-d8	*98*		ug/L		*30*		*98*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*102*		ug/L		*30*		*102*	*70-130*		
Surrogate: % Bromofluorobenzene	*96*		ug/L		*30*		*96*	*70-130*		
LCS (CC14805-LCS)						Prepared: Analyzed: 17-Dec-18				
1,2-Dichloroethane	**16.60**		ug/L	1.0	20		83	68-132		20
Bromomethane	**14.22**		ug/L	1.0	20		71	40-160		20
Bromoform	**17.46**		ug/L	1.0	20		87	71-129		20
Bromodichloromethane	**16.25**		ug/L	0.50	20		81	65-135		20
Benzene	**16.24**		ug/L	0.70	20		81	64-136		20
1,4-Dichlorobenzene	**16.05**		ug/L	1.0	20		80	63-137		20
1,2-Dichloropropane	**15.49**		ug/L	1.0	20		77	40-160		20
Carbon tetrachloride	**15.16**		ug/L	1.0	20		76	73-127		20
1,2-Dichlorobenzene	**16.23**		ug/L	1.0	20		81	63-137		20
1,1-Dichloroethene	**15.63**		ug/L	1.0	20		78	50-150		20
1,1-Dichloroethane	**16.34**		ug/L	1.0	20		82	72-128		20
1,1,2,2-tetrachloroethane	**16.30**		ug/L	0.50	20		81	60-140		20
1,1,2-Trichloroethane	**16.57**		ug/L	1.0	20		83	71-129		20
1,3-Dichlorobenzene	**16.39**		ug/L	1.0	20		82	73-127		20
trans-1,3-Dichloropropene	**16.53**		ug/L	0.40	20		83	50-150		20
1,1,1-Trichloroethane	**15.94**		ug/L	1.0	20		80	75-125		20
Chlorobenzene	**16.38**		ug/L	1.0	20		82	66-134		20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460364A - E624.1										
LCS (CC14805-LCS)					Prepared: Analyzed: 17-Dec-18					
Vinyl chloride	**12.99**		ug/L	1.0	20		65	40-160		20
Trichlorofluoromethane	**13.13**		ug/L	1.0	20		66	48-152		20
Trichloroethene	**16.58**		ug/L	1.0	20		83	66-134		20
trans-1,2-Dichloroethene	**16.46**		ug/L	1.0	20		82	69-131		20
Toluene	**16.62**		ug/L	1.0	20		83	74-126		20
Tetrachloroethene	**16.35**		ug/L	1.0	20		82	73-127		20
o-Xylene	**16.97**		ug/L	1.0	20		85	70-130		30
Methyl tert-butyl ether (MTBE)	**12.96**	I	ug/L	1.0	20		65	70-130		30
m&p-Xylene	**33.60**		ug/L	1.0	40		84	70-130		30
Methylene chloride	**15.64**		ug/L	1.0	20		78	60-140		20
Ethylbenzene	**16.30**		ug/L	1.0	20		82	59-141		20
Dibromochloromethane	**17.79**		ug/L	0.50	20		89	67-133		20
Chloromethane	**12.49**		ug/L	1.0	20		62	40-160		20
cis-1,3-Dichloropropene	**16.58**		ug/L	0.40	20		83	40-160		20
cis-1,2-Dichloroethene	**16.41**		ug/L	1.0	20		82	69-131		20
Chloroethane	**13.08**		ug/L	1.0	20		65	40-160		20
Chloroform	**16.10**		ug/L	1.0	20		81	67-133		20
Surrogate: % Dibromofluoromethane	*30.08*		ug/L		*30*		*100*	*70-130*		
Surrogate: % Bromofluorobenzene	*30.16*		ug/L		*30*		*101*	*70-130*		
Surrogate: % Toluene-d8	*29.87*		ug/L		*30*		*100*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*30.14*		ug/L		*30*		*100*	*70-130*		
MS (CC14805-MS)			**Source: SC52617-20**		Prepared: Analyzed: 17-Dec-18					
1,4-Dichlorobenzene	**21.34**		ug/L	1.0	20	BRL	107	63-137		20
Benzene	**21.59**		ug/L	0.70	20		108	64-136		20
1,3-Dichlorobenzene	**21.27**		ug/L	1.0	20	BRL	106	73-127		20
Bromodichloromethane	**22.01**		ug/L	0.50	20	BRL	110	65-135		20
Bromoform	**23.46**		ug/L	1.0	20	BRL	117	71-129		20
Carbon tetrachloride	**21.56**		ug/L	1.0	20	BRL	108	73-127		20
1,1,2-Trichloroethane	**22.21**		ug/L	1.0	20	BRL	111	71-129		20
Chlorobenzene	**21.64**		ug/L	1.0	20	BRL	108	66-134		20
Bromomethane	**19.83**		ug/L	1.0	20	BRL	98	40-160		20
1,2-Dichloropropane	**21.08**		ug/L	1.0	20	BRL	105	40-160		20
1,2-Dichloroethane	**22.41**		ug/L	1.0	20	BRL	112	68-132		20
1,2-Dichlorobenzene	**20.96**		ug/L	1.0	20	BRL	105	63-137		20
1,1,2,2-tetrachloroethane	**22.01**		ug/L	0.50	20	BRL	110	60-140		20
1,1-Dichloroethane	**22.20**		ug/L	1.0	20	BRL	111	72-128		20
Chloroethane	**18.40**		ug/L	1.0	20	BRL	92	40-160		20
Toluene	**22.25**		ug/L	1.0	20	BRL	111	74-126		20
1,1,1-Trichloroethane	**21.87**		ug/L	1.0	20	BRL	109	75-125		20
1,1-Dichloroethene	**22.12**		ug/L	1.0	20	BRL	111	50-150		20
Tetrachloroethene	**22.95**		ug/L	1.0	20	BRL	115	73-127		20
Vinyl chloride	**18.17**		ug/L	1.0	20	BRL	91	40-160		20
Trichlorofluoromethane	**18.36**		ug/L	1.0	20	BRL	92	48-152		20
Trichloroethene	**22.55**		ug/L	1.0	20	BRL	113	66-134		20
o-Xylene	**22.68**		ug/L	1.0	20	BRL	113	70-130		30
trans-1,2-Dichloroethene	**22.67**		ug/L	1.0	20	BRL	113	69-131		20
Chloroform	**21.60**		ug/L	1.0	20	BRL	108	67-133		20
Methylene chloride	**20.80**		ug/L	1.0	20	BRL	104	60-140		20
Methyl tert-butyl ether (MTBE)	**17.87**		ug/L	1.0	20	BRL	89	70-130		30
m&p-Xylene	**45.13**		ug/L	1.0	40	BRL	113	70-130		30

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460364A - E624.1										
MS (CC14805-MS)			**Source: SC52617-20**			Prepared: Analyzed: 17-Dec-18				
Ethylbenzene	**21.97**		ug/L	1.0	20	BRL	110	59-141		20
Dibromochloromethane	**23.89**		ug/L	0.50	20	BRL	119	67-133		20
cis-1,3-Dichloropropene	**21.87**		ug/L	0.40	20	BRL	109	40-160		20
cis-1,2-Dichloroethene	**22.35**		ug/L	1.0	20	BRL	112	69-131		20
Chloromethane	**16.77**		ug/L	1.0	20	BRL	84	40-160		20
trans-1,3-Dichloropropene	**22.20**		ug/L	0.40	20	BRL	111	50-150		20
Surrogate: % Toluene-d8	*30.26*		ug/L		*20*		*101*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*29.41*		ug/L		*20*		*98*	*70-130*		
Surrogate: % Bromofluorobenzene	*30.17*		ug/L		*20*		*101*	*70-130*		
Surrogate: % Dibromofluoromethane	*31.59*		ug/L		*20*		*105*	*70-130*		
MSD (CC14805-MSD)			**Source: SC52617-20**			Prepared: Analyzed: 17-Dec-18				
Vinyl chloride	**17.21**		ug/L	1.0	20	BRL	86	40-160	5.6	20
Methylene chloride	**20.10**		ug/L	1.0	20	BRL	101	60-140	2.9	20
Chlorobenzene	**21.05**		ug/L	1.0	20	BRL	105	66-134	2.8	20
Chloroethane	**16.81**		ug/L	1.0	20	BRL	84	40-160	9.1	20
Chloroform	**20.63**		ug/L	1.0	20	BRL	103	67-133	4.7	20
Chloromethane	**16.20**		ug/L	1.0	20	BRL	81	40-160	3.6	20
cis-1,2-Dichloroethene	**21.22**		ug/L	1.0	20	BRL	106	69-131	5.5	20
cis-1,3-Dichloropropene	**20.88**		ug/L	0.40	20	BRL	104	40-160	4.7	20
Carbon tetrachloride	**20.28**		ug/L	1.0	20	BRL	101	73-127	6.7	20
Methyl tert-butyl ether (MTBE)	**17.09**		ug/L	1.0	20	BRL	85	70-130	4.6	30
Dibromochloromethane	**23.22**		ug/L	0.50	20	BRL	116	67-133	2.6	20
o-Xylene	**22.18**		ug/L	1.0	20	BRL	111	70-130	1.8	30
Tetrachloroethene	**21.05**		ug/L	1.0	20	BRL	105	73-127	9.1	20
Toluene	**20.79**		ug/L	1.0	20	BRL	104	74-126	6.5	20
trans-1,2-Dichloroethene	**21.34**		ug/L	1.0	20	BRL	107	69-131	5.5	20
trans-1,3-Dichloropropene	**21.03**		ug/L	0.40	20	BRL	105	50-150	5.6	20
Trichlorofluoromethane	**17.38**		ug/L	1.0	20	BRL	87	48-152	5.6	20
Trichloroethene	**21.41**		ug/L	1.0	20	BRL	107	66-134	5.5	20
Ethylbenzene	**21.22**		ug/L	1.0	20	BRL	106	59-141	3.7	20
1,2-Dichloroethane	**21.04**		ug/L	1.0	20	BRL	105	68-132	6.5	20
1,1,1-Trichloroethane	**20.97**		ug/L	1.0	20	BRL	105	75-125	3.7	20
1,1,2,2-tetrachloroethane	**21.63**		ug/L	0.50	20	BRL	108	60-140	1.8	20
1,1,2-Trichloroethane	**21.23**		ug/L	1.0	20	BRL	106	71-129	4.6	20
1,1-Dichloroethane	**20.92**		ug/L	1.0	20	BRL	105	72-128	5.6	20
1,1-Dichloroethene	**21.51**		ug/L	1.0	20	BRL	108	50-150	2.7	20
1,2-Dichlorobenzene	**20.47**		ug/L	1.0	20	BRL	102	63-137	2.9	20
Bromomethane	**18.89**		ug/L	1.0	20	BRL	93	40-160	5.2	20
m&p-Xylene	**43.53**		ug/L	1.0	40	BRL	109	70-130	3.6	30
1,2-Dichloropropane	**20.18**		ug/L	1.0	20	BRL	101	40-160	3.9	20
1,3-Dichlorobenzene	**20.86**		ug/L	1.0	20	BRL	104	73-127	1.9	20
1,4-Dichlorobenzene	**20.38**		ug/L	1.0	20	BRL	102	63-137	4.8	20
Benzene	**20.40**		ug/L	0.70	20		102	64-136	5.7	20
Bromodichloromethane	**20.78**		ug/L	0.50	20	BRL	104	65-135	5.6	20
Bromoform	**23.12**		ug/L	1.0	20	BRL	116	71-129	0.9	20
Surrogate: % Toluene-d8	*29.73*		ug/L		*20*		*99*	*70-130*		
Surrogate: % Bromofluorobenzene	*30.23*		ug/L		*20*		*101*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*29.96*		ug/L		*20*		*100*	*70-130*		
Surrogate: % Dibromofluoromethane	*30.33*		ug/L		*20*		*101*	*70-130*		
Batch 460366A - E624.1										

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460366A - E624.1										
BLK (CC15501-BLK)						Prepared: Analyzed: 17-Dec-18				
1,2-Dichloropropane	**ND**		ug/L	1.0			ND	-		
Chlorobenzene	**ND**		ug/L	1.0			ND	-		
Chloroethane	**ND**		ug/L	1.0			ND	-		
Bromomethane	**ND**		ug/L	1.0			ND	-		
Bromoform	**ND**		ug/L	1.0			ND	-		
Bromodichloromethane	**ND**		ug/L	0.50			ND	-		
Benzene	**ND**		ug/L	0.70			ND	-		
1,1,1-Trichloroethane	**ND**		ug/L	1.0			ND	-		
1,3-Dichlorobenzene	**ND**		ug/L	1.0			ND	-		
1,2-Dichloroethane	**ND**		ug/L	1.0			ND	-		
1,2-Dichlorobenzene	**ND**		ug/L	1.0			ND	-		
1,1-Dichloroethene	**ND**		ug/L	1.0			ND	-		
1,1-Dichloroethane	**ND**		ug/L	1.0			ND	-		
1,1,2-Trichloroethane	**ND**		ug/L	1.0			ND	-		
1,1,2,2-tetrachloroethane	**ND**		ug/L	0.50			ND	-		
1,4-Dichlorobenzene	**ND**		ug/L	1.0			ND	-		
o-Xylene	**ND**		ug/L	1.0			ND	-		
Chloroform	**ND**		ug/L	1.0			ND	-		
Carbon tetrachloride	**ND**		ug/L	1.0			ND	-		
Vinyl chloride	**ND**		ug/L	1.0			ND	-		
Trichlorofluoromethane	**ND**		ug/L	1.0			ND	-		
Trichloroethene	**ND**		ug/L	1.0			ND	-		
trans-1,3-Dichloropropene	**ND**		ug/L	0.40			ND	-		
trans-1,2-Dichloroethene	**ND**		ug/L	1.0			ND	-		
Tetrachloroethene	**ND**		ug/L	1.0			ND	-		
Methylene chloride	**ND**		ug/L	1.0			ND	-		
Methyl tert-butyl ether (MTBE)	**ND**		ug/L	1.0			ND	-		
m&p-Xylene	**ND**		ug/L	1.0			ND	-		
Ethylbenzene	**ND**		ug/L	1.0			ND	-		
Dibromochloromethane	**ND**		ug/L	0.50			ND	-		
cis-1,3-Dichloropropene	**ND**		ug/L	0.40			ND	-		
cis-1,2-Dichloroethene	**ND**		ug/L	1.0			ND	-		
Chloromethane	**ND**		ug/L	1.0			ND	-		
Toluene	**ND**		ug/L	1.0			ND	-		
Surrogate: % Toluene-d8	*100*		ug/L		*30*		*100*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*101*		ug/L		*30*		*101*	*70-130*		
Surrogate: % Dibromofluoromethane	*99*		ug/L		*30*		*99*	*70-130*		
Surrogate: % Bromofluorobenzene	*95*		ug/L		*30*		*95*	*70-130*		
LCS (CC15501-LCS)						Prepared: Analyzed: 17-Dec-18				
Tetrachloroethene	**22.95**		ug/L	1.0	20		115	73-127		20
Carbon tetrachloride	**21.56**		ug/L	1.0	20		108	73-127		20
Bromomethane	**19.83**		ug/L	1.0	20		99	40-160		20
Bromoform	**23.46**		ug/L	1.0	20		117	71-129		20
Bromodichloromethane	**22.01**		ug/L	0.50	20		110	65-135		20
Benzene	**21.59**		ug/L	0.70	20		108	64-136		20
1,4-Dichlorobenzene	**21.34**		ug/L	1.0	20		107	63-137		20
1,3-Dichlorobenzene	**21.27**		ug/L	1.0	20		106	73-127		20
1,2-Dichloropropane	**21.08**		ug/L	1.0	20		105	40-160		20
Chlorobenzene	**21.64**		ug/L	1.0	20		108	66-134		20
1,2-Dichloroethane	**22.41**		ug/L	1.0	20		112	68-132		20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460366A - E624.1										
LCS (CC15501-LCS)					Prepared: Analyzed: 17-Dec-18					
1,2-Dichlorobenzene	**20.96**		ug/L	1.0	20		105	63-137		20
1,1-Dichloroethene	**22.12**		ug/L	1.0	20		111	50-150		20
1,1-Dichloroethane	**22.20**		ug/L	1.0	20		111	72-128		20
1,1,2-Trichloroethane	**22.21**		ug/L	1.0	20		111	71-129		20
1,1,2,2-tetrachloroethane	**22.01**		ug/L	0.50	20		110	60-140		20
1,1,1-Trichloroethane	**21.87**		ug/L	1.0	20		109	75-125		20
Methyl tert-butyl ether (MTBE)	**17.87**		ug/L	1.0	20		89	70-130		30
Vinyl chloride	**18.17**		ug/L	1.0	20		91	40-160		20
Trichlorofluoromethane	**18.36**		ug/L	1.0	20		92	48-152		20
Trichloroethene	**22.55**		ug/L	1.0	20		113	66-134		20
trans-1,3-Dichloropropene	**22.20**		ug/L	0.40	20		111	50-150		20
trans-1,2-Dichloroethene	**22.67**		ug/L	1.0	20		113	69-131		20
Methylene chloride	**20.80**		ug/L	1.0	20		104	60-140		20
o-Xylene	**22.68**		ug/L	1.0	20		113	70-130		30
Chloroethane	**18.40**		ug/L	1.0	20		92	40-160		20
m&p-Xylene	**45.13**		ug/L	1.0	40		113	70-130		30
Ethylbenzene	**21.97**		ug/L	1.0	20		110	59-141		20
Dibromochloromethane	**23.89**		ug/L	0.50	20		119	67-133		20
cis-1,3-Dichloropropene	**21.87**		ug/L	0.40	20		109	40-160		20
cis-1,2-Dichloroethene	**22.35**		ug/L	1.0	20		112	69-131		20
Chloromethane	**16.77**		ug/L	1.0	20		84	40-160		20
Chloroform	**21.60**		ug/L	1.0	20		108	67-133		20
Toluene	**22.25**		ug/L	1.0	20		111	74-126		20
Surrogate: % Dibromofluoromethane	*31.59*		ug/L		*30*		*105*	*70-130*		
Surrogate: % Bromofluorobenzene	*30.17*		ug/L		*30*		*101*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*29.41*		ug/L		*30*		*98*	*70-130*		
Surrogate: % Toluene-d8	*30.26*		ug/L		*30*		*101*	*70-130*		
LCSD (CC15501-LCSD)					Prepared: Analyzed: 17-Dec-18					
Tetrachloroethene	**21.05**		ug/L	1.0	20		105	73-127	9.1	20
cis-1,2-Dichloroethene	**21.22**		ug/L	1.0	20		106	69-131	5.5	20
cis-1,3-Dichloropropene	**20.88**		ug/L	0.40	20		104	40-160	4.7	20
Dibromochloromethane	**23.22**		ug/L	0.50	20		116	67-133	2.6	20
Ethylbenzene	**21.22**		ug/L	1.0	20		106	59-141	3.7	20
m&p-Xylene	**43.53**		ug/L	1.0	40		109	70-130	3.6	30
Methyl tert-butyl ether (MTBE)	**17.09**		ug/L	1.0	20		85	70-130	4.6	30
Chloromethane	**16.20**		ug/L	1.0	20		81	40-160	3.6	20
o-Xylene	**22.18**		ug/L	1.0	20		111	70-130	1.8	30
Chlorobenzene	**21.05**		ug/L	1.0	20		105	66-134	2.8	20
Toluene	**20.79**		ug/L	1.0	20		104	74-126	6.5	20
trans-1,2-Dichloroethene	**21.34**		ug/L	1.0	20		107	69-131	5.5	20
trans-1,3-Dichloropropene	**21.03**		ug/L	0.40	20		105	50-150	5.6	20
Trichloroethene	**21.41**		ug/L	1.0	20		107	66-134	5.5	20
Trichlorofluoromethane	**17.38**		ug/L	1.0	20		87	48-152	5.6	20
Methylene chloride	**20.10**		ug/L	1.0	20		101	60-140	2.9	20
Benzene	**20.40**		ug/L	0.70	20		102	64-136	5.7	20
1,1,2-Trichloroethane	**21.23**		ug/L	1.0	20		106	71-129	4.6	20
1,1,1-Trichloroethane	**20.97**		ug/L	1.0	20		105	75-125	3.7	20
1,1-Dichloroethene	**21.51**		ug/L	1.0	20		108	50-150	2.7	20
1,2-Dichlorobenzene	**20.47**		ug/L	1.0	20		102	63-137	2.9	20
1,2-Dichloroethane	**21.04**		ug/L	1.0	20		105	68-132	6.5	20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460366A - E624.1										
LCSD (CC15501-LCSD)					Prepared: Analyzed: 17-Dec-18					
1,2-Dichloropropane	**20.18**		ug/L	1.0	20		101	40-160	3.9	20
Chloroform	**20.63**		ug/L	1.0	20		103	67-133	4.7	20
1,4-Dichlorobenzene	**20.38**		ug/L	1.0	20		102	63-137	4.8	20
Vinyl chloride	**17.21**		ug/L	1.0	20		86	40-160	5.6	20
Bromodichloromethane	**20.78**		ug/L	0.50	20		104	65-135	5.6	20
Bromoform	**23.12**		ug/L	1.0	20		116	71-129	0.9	20
Bromomethane	**18.89**		ug/L	1.0	20		94	40-160	5.2	20
Carbon tetrachloride	**20.28**		ug/L	1.0	20		101	73-127	6.7	20
1,1-Dichloroethane	**20.92**		ug/L	1.0	20		105	72-128	5.6	20
Chloroethane	**16.81**		ug/L	1.0	20		84	40-160	9.1	20
1,3-Dichlorobenzene	**20.86**		ug/L	1.0	20		104	73-127	1.9	20
1,1,2,2-tetrachloroethane	**21.63**		ug/L	0.50	20		108	60-140	1.8	20
Surrogate: % Toluene-d8	*29.73*		ug/L		*30*		*99*	*70-130*		
Surrogate: % Dibromofluoromethane	*30.33*		ug/L		*30*		*101*	*70-130*		
Surrogate: % Bromofluorobenzene	*30.23*		ug/L		*30*		*101*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*29.96*		ug/L		*30*		*100*	*70-130*		
MS (CC15501-MS)			**Source: CC15501**		Prepared: Analyzed: 17-Dec-18					
Toluene	**22.93**		ug/L	1.0	20		115	74-126		20
Chloromethane	**18.51**		ug/L	1.0	20		93	40-160		20
cis-1,3-Dichloropropene	**21.93**		ug/L	0.40	20		110	40-160		20
Dibromochloromethane	**24.11**		ug/L	0.50	20		121	67-133		20
Ethylbenzene	**23.00**		ug/L	1.0	20		115	59-141		20
m&p-Xylene	**47.30**		ug/L	1.0	40		118	70-130		30
Methyl tert-butyl ether (MTBE)	**17.80**		ug/L	1.0	20		89	70-130		30
Methylene chloride	**22.17**		ug/L	1.0	20		111	60-140		20
Tetrachloroethene	**22.39**		ug/L	1.0	20		112	73-127		20
Carbon tetrachloride	**23.52**		ug/L	1.0	20		118	73-127		20
trans-1,2-Dichloroethene	**24.08**		ug/L	1.0	20		120	69-131		20
trans-1,3-Dichloropropene	**20.56**		ug/L	0.40	20		103	50-150		20
Trichloroethene	**23.52**		ug/L	1.0	20		118	66-134		20
Trichlorofluoromethane	**21.38**		ug/L	1.0	20		107	48-152		20
Vinyl chloride	**20.23**		ug/L	1.0	20		101	40-160		20
o-Xylene	**23.86**		ug/L	1.0	20		119	70-130		30
1,3-Dichlorobenzene	**21.81**		ug/L	1.0	20		109	73-127		20
1,1,1-Trichloroethane	**23.38**		ug/L	1.0	20		117	75-125		20
1,1,2,2-tetrachloroethane	**22.22**		ug/L	0.50	20		111	60-140		20
1,1,2-Trichloroethane	**22.26**		ug/L	1.0	20		111	71-129		20
1,1-Dichloroethane	**23.49**		ug/L	1.0	20		117	72-128		20
1,1-Dichloroethene	**24.49**		ug/L	1.0	20		122	50-150		20
1,2-Dichlorobenzene	**21.90**		ug/L	1.0	20		110	63-137		20
Chloroethane	**21.18**		ug/L	1.0	20		106	40-160		20
1,2-Dichloropropane	**22.15**		ug/L	1.0	20		111	40-160		20
Chlorobenzene	**22.74**		ug/L	1.0	20		114	66-134		20
1,4-Dichlorobenzene	**21.89**		ug/L	1.0	20		109	63-137		20
Benzene	**22.55**		ug/L	0.70	20		113	64-136		20
Bromodichloromethane	**22.55**		ug/L	0.50	20		113	65-135		20
Bromoform	**24.00**		ug/L	1.0	20		120	71-129		20
Bromomethane	**17.03**		ug/L	1.0	20		85	40-160		20
cis-1,2-Dichloroethene	**23.35**		ug/L	1.0	20		117	69-131		20
1,2-Dichloroethane	**22.74**		ug/L	1.0	20		114	68-132		20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460366A - E624.1										
MS (CC15501-MS)			**Source: CC15501**				Prepared: Analyzed: 17-Dec-18			
Chloroform	**22.96**		ug/L	1.0	20		115	67-133		20
Surrogate: % 1,2-dichlorobenzene-d4	*30.01*		ug/L		*20*		*100*	*70-130*		
Surrogate: % Bromofluorobenzene	*30.39*		ug/L		*20*		*101*	*70-130*		
Surrogate: % Dibromofluoromethane	*30.65*		ug/L		*20*		*102*	*70-130*		
Surrogate: % Toluene-d8	*29.49*		ug/L		*20*		*98*	*70-130*		
MSD (CC15501-MSD)			**Source: CC15501**				Prepared: Analyzed: 17-Dec-18			
1,1-Dichloroethene	**24.33**		ug/L	1.0	20		122	50-150	0.0	20
Bromoform	**24.26**		ug/L	1.0	20		121	71-129	0.8	20
Bromodichloromethane	**22.46**		ug/L	0.50	20		112	65-135	0.9	20
Benzene	**22.13**		ug/L	0.70	20		111	64-136	1.8	20
1,4-Dichlorobenzene	**21.64**		ug/L	1.0	20		108	63-137	0.9	20
1,3-Dichlorobenzene	**21.77**		ug/L	1.0	20		109	73-127	0.0	20
1,2-Dichloropropane	**21.32**		ug/L	1.0	20		107	40-160	3.7	20
Carbon tetrachloride	**23.25**		ug/L	1.0	20		116	73-127	1.7	20
1,2-Dichlorobenzene	**21.63**		ug/L	1.0	20		108	63-137	1.8	20
1,1,1-Trichloroethane	**23.38**		ug/L	1.0	20		117	75-125	0.0	20
1,1-Dichloroethane	**22.77**		ug/L	1.0	20		114	72-128	2.6	20
1,1,2-Trichloroethane	**22.74**		ug/L	1.0	20		114	71-129	2.7	20
1,1,2,2-tetrachloroethane	**22.30**		ug/L	0.50	20		111	60-140	0.0	20
trans-1,3-Dichloropropene	**21.81**		ug/L	0.40	20		109	50-150	5.7	20
1,2-Dichloroethane	**22.56**		ug/L	1.0	20		113	68-132	0.9	20
m&p-Xylene	**46.87**		ug/L	1.0	40		117	70-130	0.9	30
Trichloroethene	**23.17**		ug/L	1.0	20		116	66-134	1.7	20
Trichlorofluoromethane	**21.47**		ug/L	1.0	20		107	48-152	0.0	20
Vinyl chloride	**20.58**		ug/L	1.0	20		103	40-160	2.0	20
trans-1,2-Dichloroethene	**23.59**		ug/L	1.0	20		118	69-131	1.7	20
Toluene	**23.05**		ug/L	1.0	20		115	74-126	0.0	20
Tetrachloroethene	**23.85**		ug/L	1.0	20		119	73-127	6.1	20
o-Xylene	**23.46**		ug/L	1.0	20		117	70-130	1.7	30
Bromomethane	**19.34**		ug/L	1.0	20		97	40-160	13.2	20
Methyl tert-butyl ether (MTBE)	**17.96**		ug/L	1.0	20		90	70-130	1.1	30
Ethylbenzene	**22.61**		ug/L	1.0	20		113	59-141	1.8	20
Dibromochloromethane	**24.33**		ug/L	0.50	20		122	67-133	0.8	20
cis-1,3-Dichloropropene	**21.70**		ug/L	0.40	20		108	40-160	1.8	20
cis-1,2-Dichloroethene	**22.66**		ug/L	1.0	20		113	69-131	3.5	20
Chloromethane	**18.50**		ug/L	1.0	20		93	40-160	0.0	20
Chloroform	**22.17**		ug/L	1.0	20		111	67-133	3.5	20
Chloroethane	**20.50**		ug/L	1.0	20		102	40-160	3.8	20
Chlorobenzene	**22.24**		ug/L	1.0	20		111	66-134	2.7	20
Methylene chloride	**21.46**		ug/L	1.0	20		107	60-140	3.7	20
Surrogate: % 1,2-dichlorobenzene-d4	*30.17*		ug/L		*20*		*101*	*70-130*		
Surrogate: % Toluene-d8	*29.94*		ug/L		*20*		*100*	*70-130*		
Surrogate: % Bromofluorobenzene	*30.10*		ug/L		*20*		*100*	*70-130*		
Surrogate: % Dibromofluoromethane	*30.23*		ug/L		*20*		*101*	*70-130*		
Batch 460528A - E624.1										
BLK (CC16131-BLK)							Prepared: Analyzed: 18-Dec-18			
1,2-Dichloroethane	**ND**		ug/L	1.0			ND	-		
Carbon tetrachloride	**ND**		ug/L	1.0			ND	-		
Bromomethane	**ND**		ug/L	1.0			ND	-		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460528A - E624.1										
BLK (CC16131-BLK)						Prepared: Analyzed: 18-Dec-18				
Bromoform	**ND**		ug/L	1.0			ND	-		
Bromodichloromethane	**ND**		ug/L	0.50			ND	-		
Benzene	**ND**		ug/L	0.70			ND	-		
1,4-Dichlorobenzene	**ND**		ug/L	1.0			ND	-		
Chlorobenzene	**ND**		ug/L	1.0			ND	-		
1,2-Dichloropropane	**ND**		ug/L	1.0			ND	-		
Chloromethane	**ND**		ug/L	1.0			ND	-		
1,2-Dichlorobenzene	**ND**		ug/L	1.0			ND	-		
1,1-Dichloroethene	**ND**		ug/L	1.0			ND	-		
1,1-Dichloroethane	**ND**		ug/L	1.0			ND	-		
1,1,2-Trichloroethane	**ND**		ug/L	1.0			ND	-		
1,1,2,2-tetrachloroethane	**ND**		ug/L	0.50			ND	-		
1,1,1-Trichloroethane	**ND**		ug/L	1.0			ND	-		
1,3-Dichlorobenzene	**ND**		ug/L	1.0			ND	-		
Methylene chloride	**ND**		ug/L	1.0			ND	-		
Vinyl chloride	**ND**		ug/L	1.0			ND	-		
Trichlorofluoromethane	**ND**		ug/L	1.0			ND	-		
Trichloroethene	**ND**		ug/L	1.0			ND	-		
trans-1,3-Dichloropropene	**ND**		ug/L	0.40			ND	-		
trans-1,2-Dichloroethene	**ND**		ug/L	1.0			ND	-		
Toluene	**ND**		ug/L	1.0			ND	-		
Chloroethane	**ND**		ug/L	1.0			ND	-		
o-Xylene	**ND**		ug/L	1.0			ND	-		
Methyl tert-butyl ether (MTBE)	**ND**		ug/L	1.0			ND	-		
m&p-Xylene	**ND**		ug/L	1.0			ND	-		
Ethylbenzene	**ND**		ug/L	1.0			ND	-		
Dibromochloromethane	**ND**		ug/L	0.50			ND	-		
cis-1,3-Dichloropropene	**ND**		ug/L	0.40			ND	-		
cis-1,2-Dichloroethene	**ND**		ug/L	1.0			ND	-		
Chloroform	**ND**		ug/L	1.0			ND	-		
Tetrachloroethene	**ND**		ug/L	1.0			ND	-		
Surrogate: % Bromofluorobenzene	*94*		ug/L		*30*		*94*	*70-130*		
Surrogate: % Toluene-d8	*98*		ug/L		*30*		*98*	*70-130*		
Surrogate: % Dibromofluoromethane	*103*		ug/L		*30*		*103*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*101*		ug/L		*30*		*101*	*70-130*		
LCS (CC16131-LCS)						Prepared: Analyzed: 18-Dec-18				
o-Xylene	**23.77**		ug/L	1.0	20		119	70-130		30
Chloroethane	**17.95**		ug/L	1.0	20		90	40-160		20
Chloroform	**22.47**		ug/L	1.0	20		112	67-133		20
Chloromethane	**17.79**		ug/L	1.0	20		89	40-160		20
cis-1,2-Dichloroethene	**22.52**		ug/L	1.0	20		113	69-131		20
cis-1,3-Dichloropropene	**22.64**		ug/L	0.40	20		113	40-160		20
Dibromochloromethane	**25.53**		ug/L	0.50	20		128	67-133		20
Ethylbenzene	**23.34**		ug/L	1.0	20		117	59-141		20
m&p-Xylene	**47.42**		ug/L	1.0	40		119	70-130		30
Chlorobenzene	**22.79**		ug/L	1.0	20		114	66-134		20
Methylene chloride	**20.72**		ug/L	1.0	20		104	60-140		20
Tetrachloroethene	**24.53**		ug/L	1.0	20		123	73-127		20
Toluene	**22.37**		ug/L	1.0	20		112	74-126		20
trans-1,2-Dichloroethene	**23.01**		ug/L	1.0	20		115	69-131		20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460528A - E624.1										
LCS (CC16131-LCS)						Prepared: Analyzed: 18-Dec-18				
trans-1,3-Dichloropropene	**23.18**		ug/L	0.40	20		116	50-150		20
Trichloroethene	**23.35**		ug/L	1.0	20		117	66-134		20
Vinyl chloride	**19.42**		ug/L	1.0	20		97	40-160		20
Methyl tert-butyl ether (MTBE)	**17.82**		ug/L	1.0	20		89	70-130		30
1,2-Dichloroethane	**22.31**		ug/L	1.0	20		112	68-132		20
Carbon tetrachloride	**23.57**		ug/L	1.0	20		118	73-127		20
Trichlorofluoromethane	**19.79**		ug/L	1.0	20		99	48-152		20
1,1,1-Trichloroethane	**22.93**		ug/L	1.0	20		115	75-125		20
1,1,2,2-tetrachloroethane	**22.60**		ug/L	0.50	20		113	60-140		20
1,1,2-Trichloroethane	**22.88**		ug/L	1.0	20		114	71-129		20
1,1-Dichloroethane	**21.98**		ug/L	1.0	20		110	72-128		20
1,2-Dichlorobenzene	**21.85**		ug/L	1.0	20		109	63-137		20
1,2-Dichloropropane	**21.13**		ug/L	1.0	20		106	40-160		20
1,3-Dichlorobenzene	**22.23**		ug/L	1.0	20		111	73-127		20
1,4-Dichlorobenzene	**22.22**		ug/L	1.0	20		111	63-137		20
Benzene	**21.85**		ug/L	0.70	20		109	64-136		20
Bromodichloromethane	**22.57**		ug/L	0.50	20		113	65-135		20
Bromoform	**25.90**		ug/L	1.0	20		129	71-129		20
Bromomethane	**20.38**		ug/L	1.0	20		102	40-160		20
1,1-Dichloroethene	**23.08**		ug/L	1.0	20		115	50-150		20
Surrogate: % Dibromofluoromethane	*30.24*		ug/L		*30*		*101*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*29.91*		ug/L		*30*		*100*	*70-130*		
Surrogate: % Toluene-d8	*29.80*		ug/L		*30*		*99*	*70-130*		
Surrogate: % Bromofluorobenzene	*30.17*		ug/L		*30*		*101*	*70-130*		
LCSD (CC16131-LCSD)						Prepared: Analyzed: 18-Dec-18				
Chloromethane	**17.09**		ug/L	1.0	20		85	40-160	4.6	20
cis-1,2-Dichloroethene	**21.76**		ug/L	1.0	20		109	69-131	3.6	20
cis-1,3-Dichloropropene	**21.88**		ug/L	0.40	20		109	40-160	3.6	20
Dibromochloromethane	**24.27**		ug/L	0.50	20		121	67-133	5.6	20
Ethylbenzene	**22.40**		ug/L	1.0	20		112	59-141	4.4	20
m&p-Xylene	**45.47**		ug/L	1.0	40		114	70-130	4.3	30
Methyl tert-butyl ether (MTBE)	**17.37**		ug/L	1.0	20		87	70-130	2.3	30
Trichloroethene	**22.82**		ug/L	1.0	20		114	66-134	2.6	20
Methylene chloride	**20.22**		ug/L	1.0	20		101	60-140	2.9	20
o-Xylene	**22.79**		ug/L	1.0	20		114	70-130	4.3	30
Tetrachloroethene	**23.70**		ug/L	1.0	20		118	73-127	4.1	20
Toluene	**22.10**		ug/L	1.0	20		111	74-126	0.9	20
trans-1,2-Dichloroethene	**22.22**		ug/L	1.0	20		111	69-131	3.5	20
trans-1,3-Dichloropropene	**22.75**		ug/L	0.40	20		114	50-150	1.7	20
1,2-Dichloroethane	**21.85**		ug/L	1.0	20		109	68-132	2.7	20
Chloroform	**21.57**		ug/L	1.0	20		108	67-133	3.6	20
Trichlorofluoromethane	**19.23**		ug/L	1.0	20		96	48-152	3.1	20
1,4-Dichlorobenzene	**21.34**		ug/L	1.0	20		107	63-137	3.7	20
1,1,1-Trichloroethane	**22.24**		ug/L	1.0	20		111	75-125	3.5	20
Vinyl chloride	**18.49**		ug/L	1.0	20		92	40-160	5.3	20
1,1,2,2-tetrachloroethane	**21.73**		ug/L	0.50	20		109	60-140	3.6	20
1,1,2-Trichloroethane	**22.78**		ug/L	1.0	20		114	71-129	0.0	20
1,1-Dichloroethane	**21.31**		ug/L	1.0	20		107	72-128	2.8	20
1,1-Dichloroethene	**22.43**		ug/L	1.0	20		112	50-150	2.6	20
1,3-Dichlorobenzene	**21.33**		ug/L	1.0	20		107	73-127	3.7	20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460528A - E624.1										
LCSD (CC16131-LCSD)					Prepared: Analyzed: 18-Dec-18					
1,2-Dichloropropane	**20.63**		ug/L	1.0	20		103	40-160	2.9	20
Chloroethane	**17.84**		ug/L	1.0	20		89	40-160	1.1	20
Benzene	**21.40**		ug/L	0.70	20		107	64-136	1.9	20
Bromodichloromethane	**22.14**		ug/L	0.50	20		111	65-135	1.8	20
Bromoform	**24.82**		ug/L	1.0	20		124	71-129	4.0	20
Bromomethane	**19.18**		ug/L	1.0	20		96	40-160	6.1	20
Carbon tetrachloride	**22.42**		ug/L	1.0	20		112	73-127	5.2	20
Chlorobenzene	**21.64**		ug/L	1.0	20		108	66-134	5.4	20
1,2-Dichlorobenzene	**21.23**		ug/L	1.0	20		106	63-137	2.8	20
Surrogate: % Dibromofluoromethane	*29.92*		ug/L		*30*		*100*	*70-130*		
Surrogate: % Bromofluorobenzene	*29.82*		ug/L		*30*		*99*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*29.71*		ug/L		*30*		*99*	*70-130*		
Surrogate: % Toluene-d8	*29.81*		ug/L		*30*		*99*	*70-130*		
MS (CC16131-MS)			**Source: CC16131**		Prepared: Analyzed: 18-Dec-18					
Trichloroethene	**23.68**		ug/L	1.0	20		118	66-134		20
1,2-Dichlorobenzene	**21.63**		ug/L	1.0	20		108	63-137		20
Bromoform	**25.05**		ug/L	1.0	20		125	71-129		20
Bromodichloromethane	**22.29**		ug/L	0.50	20		111	65-135		20
Benzene	**21.84**		ug/L	0.70	20		109	64-136		20
1,4-Dichlorobenzene	**21.59**		ug/L	1.0	20		108	63-137		20
1,3-Dichlorobenzene	**22.03**		ug/L	1.0	20		110	73-127		20
Carbon tetrachloride	**23.63**		ug/L	1.0	20		118	73-127		20
1,2-Dichloroethane	**22.82**		ug/L	1.0	20		114	68-132		20
Chlorobenzene	**22.55**		ug/L	1.0	20		113	66-134		20
1,1-Dichloroethene	**23.33**		ug/L	1.0	20		117	50-150		20
1,1-Dichloroethane	**21.89**		ug/L	1.0	20		109	72-128		20
1,1,2-Trichloroethane	**23.18**		ug/L	1.0	20		116	71-129		20
1,1,2,2-tetrachloroethane	**22.78**		ug/L	0.50	20		114	60-140		20
1,1,1-Trichloroethane	**23.40**		ug/L	1.0	20		117	75-125		20
Vinyl chloride	**19.58**		ug/L	1.0	20		98	40-160		20
1,2-Dichloropropane	**20.60**		ug/L	1.0	20		103	40-160		20
Ethylbenzene	**23.03**		ug/L	1.0	20		115	59-141		20
trans-1,3-Dichloropropene	**22.84**		ug/L	0.40	20		114	50-150		20
trans-1,2-Dichloroethene	**22.55**		ug/L	1.0	20		113	69-131		20
Toluene	**23.73**		ug/L	1.0	20		119	74-126		20
Tetrachloroethene	**24.87**		ug/L	1.0	20		124	73-127		20
o-Xylene	**23.66**		ug/L	1.0	20		118	70-130		30
Methylene chloride	**21.23**		ug/L	1.0	20		106	60-140		20
Bromomethane	**13.23**		ug/L	1.0	20		66	40-160		20
m&p-Xylene	**47.13**		ug/L	1.0	40		118	70-130		30
Trichlorofluoromethane	**20.90**		ug/L	1.0	20		105	48-152		20
Dibromochloromethane	**25.18**		ug/L	0.50	20		126	67-133		20
cis-1,3-Dichloropropene	**21.98**		ug/L	0.40	20		110	40-160		20
cis-1,2-Dichloroethene	**22.47**		ug/L	1.0	20		112	69-131		20
Chloromethane	**16.94**		ug/L	1.0	20		85	40-160		20
Chloroform	**22.13**		ug/L	1.0	20		111	67-133		20
Chloroethane	**18.81**		ug/L	1.0	20		94	40-160		20
Methyl tert-butyl ether (MTBE)	**17.42**		ug/L	1.0	20		87	70-130		30
Surrogate: % Bromofluorobenzene	*30.63*		ug/L		*20*		*102*	*70-130*		
Surrogate: % Dibromofluoromethane	*31.05*		ug/L		*20*		*104*	*70-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
E624.1										
Batch 460528A - E624.1										
MS (CC16131-MS)			**Source: CC16131**			Prepared: Analyzed: 18-Dec-18				
Surrogate: % Toluene-d8	*29.85*		ug/L		*20*		*100*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*30.05*		ug/L		*20*		*100*	*70-130*		
MSD (CC16131-MSD)			**Source: CC16131**			Prepared: Analyzed: 18-Dec-18				
Ethylbenzene	**22.15**		ug/L	1.0	20		111	59-141	3.5	20
Bromomethane	**15.31**		ug/L	1.0	20		77	40-160	15.4	20
Carbon tetrachloride	**22.96**		ug/L	1.0	20		115	73-127	2.6	20
Chlorobenzene	**21.62**		ug/L	1.0	20		108	66-134	4.5	20
Chloroethane	**17.50**		ug/L	1.0	20		87	40-160	7.7	20
Chloroform	**20.94**		ug/L	1.0	20		105	67-133	5.6	20
Chloromethane	**16.71**		ug/L	1.0	20		84	40-160	1.2	20
cis-1,2-Dichloroethene	**21.80**		ug/L	1.0	20		109	69-131	2.7	20
Dibromochloromethane	**24.14**		ug/L	0.50	20		121	67-133	4.0	20
Benzene	**21.42**		ug/L	0.70	20		107	64-136	1.9	20
m&p-Xylene	**45.37**		ug/L	1.0	40		113	70-130	4.3	30
Methyl tert-butyl ether (MTBE)	**17.06**		ug/L	1.0	20		85	70-130	2.3	30
Methylene chloride	**20.32**		ug/L	1.0	20		102	60-140	3.8	20
o-Xylene	**22.87**		ug/L	1.0	20		114	70-130	3.4	30
Tetrachloroethene	**23.68**		ug/L	1.0	20		118	73-127	5.0	20
Toluene	**22.16**		ug/L	1.0	20		111	74-126	7.0	20
cis-1,3-Dichloropropene	**21.45**		ug/L	0.40	20		107	40-160	2.8	20
1,1-Dichloroethene	**23.00**		ug/L	1.0	20		115	50-150	1.7	20
trans-1,2-Dichloroethene	**22.27**		ug/L	1.0	20		111	69-131	1.8	20
Trichlorofluoromethane	**19.97**		ug/L	1.0	20		100	48-152	4.9	20
Trichloroethene	**22.84**		ug/L	1.0	20		114	66-134	3.4	20
trans-1,3-Dichloropropene	**22.33**		ug/L	0.40	20		112	50-150	1.8	20
1,1,1-Trichloroethane	**22.76**		ug/L	1.0	20		114	75-125	2.6	20
1,1,2,2-tetrachloroethane	**21.83**		ug/L	0.50	20		109	60-140	4.5	20
Bromoform	**24.17**		ug/L	1.0	20		121	71-129	3.3	20
1,1-Dichloroethane	**21.34**		ug/L	1.0	20		107	72-128	1.9	20
Bromodichloromethane	**21.76**		ug/L	0.50	20		109	65-135	1.8	20
1,2-Dichlorobenzene	**21.24**		ug/L	1.0	20		106	63-137	1.9	20
1,2-Dichloroethane	**22.14**		ug/L	1.0	20		111	68-132	2.7	20
1,2-Dichloropropane	**20.76**		ug/L	1.0	20		104	40-160	1.0	20
1,3-Dichlorobenzene	**21.28**		ug/L	1.0	20		106	73-127	3.7	20
1,4-Dichlorobenzene	**21.11**		ug/L	1.0	20		106	63-137	1.9	20
Vinyl chloride	**18.91**		ug/L	1.0	20		95	40-160	3.1	20
1,1,2-Trichloroethane	**22.50**		ug/L	1.0	20		113	71-129	2.6	20
Surrogate: % Toluene-d8	*30.03*		ug/L		*20*		*100*	*70-130*		
Surrogate: % Dibromofluoromethane	*30.85*		ug/L		*20*		*103*	*70-130*		
Surrogate: % 1,2-dichlorobenzene-d4	*30.03*		ug/L		*20*		*100*	*70-130*		
Surrogate: % Bromofluorobenzene	*30.20*		ug/L		*20*		*101*	*70-130*		

Notes and Definitions

J	Estimated Value
l	This parameter is outside laboratory lcs/lcsd specified recovery limits.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

SCS2617 8pg

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CHAIN OF CUSTODY RECORD

Page 1 of 3

Special Handling:
- [X] Standard TAT - 7 to 10 business days
- [ ] Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 30 days unless otherwise instructed.

Report To: Lindsay Mitchell
AECOM
40 British American BLVD
Latham, NY 12110
Telephone #: (518)-951-2373
Project Mgr: Lindsay Mitchell

Invoice To: Lindsay Mitchell

P.O No.: _____ Quote #: _____

Project No: 60284002
Site Name: NE Alloys
Location: UTICA, NY State: NY
Sampler(s): AG + JK

F=Field Filtered 1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

DW=Drinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1=_____ X2=_____ X3=_____

G= Grab C=Compsite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass VOA's	# of Clear Glass	# of Plastic	Analysis: EPA 624	Analysis	Analysis	Analysis	Analysis	Analysis	Check if chlorinated
SCS2617 01	BR-1 121018	12/10/18	0930	G	GW		3			X						
02	BR-2 121018		1020							X						
03	MW-3 121018		1055							X						
04	MW-13 121018		1135							X						
05	MW-14 121018		1230							X						
06	MW-16 121018		1220							X						
07	MW-11 121018		1450							X						
08	MW-4 121018		1440							X						
09	DUP	—	—							X						
10	BR-3 121118	12/11/18	09:10							X						

List Preservative Code below: 2 2

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? [ ] Yes [ ] No
CT DPH RCP Report? [ ] Yes [ ] No
[ ] Standard [ ] No QC [ ] DQA*
[ ] ASP A* [ ] ASP B*
[ ] NJ Reduced* [ ] NJ Full*
[ ] Tier II* [ ] Tier IV*
[ ] Other: _____
State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:	Temp °C
Alexael DiNi	Fedex	12/12/18	1900	Observed 9.6
Ledl	Dr Brandes	12/13/18	1030	Correction Factor 0
				Corrected 2.6
				IR ID # 01

[ ] EDD format: NYS Equis, AECOM Equis + Standard
[ ] E-mail to: Lindsay.Mitchell@aecom.com

Condition upon receipt: Custody Seals: [ ] Present [ ] Intact [ ] Broken
[ ] Ambient [ ] Iced [ ] Refrigerated [ ] DI VOA Frozen [ ] Soil Jar Frozen

SC52617 Boy

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CHAIN OF CUSTODY RECORD

Page 2 of 3

Special Handling:

- [X] Standard TAT - 7 to 10 business days
- [ ] Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 30 days unless otherwise instructed.

Report To: Lindsay Mitchell
AECOM
40 British American Blvd
Latham, NY 12110
Telephone #: (518) 951-2373
Project Mgr: Lindsay Mitchell

Invoice To: Lindsay Mitchell

P.O No.: _____ Quote #: _____

Project No: 60284002
Site Name: NE Alloys
Location: Utica, NY State: NY
Sampler(s): AG + JK

F=Field Filtered 1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

DW=Drinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1=_____ X2=_____ X3=_____

G= Grab C=Composite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass VOA's	# of Clear Glass	# of Plastic	Analysis: EDA624	List Preservative Code below: 2	Check if chlorinated
SC52617-11	MW-7R 121118	12/11/18	09:30		GW		3			X		☐
12	MW-9 121118	12/11/18	10:35		GW					X		☐
13	MW-10 121118	12/11/18	11:05							X		☐
14	MW-8 121118	12/11/18	11:45							X		☐
15	MW-6 121118	12/11/18	14:15							X		☐
16	MW-17 121118	12/11/18	14:30							X		☐
17	MW-15 121218	12/12/18	09:40							X		☐
18	MW-5 121218	12/12/18	11:00							X		☐
19	MW-18 121218									X		☐
20	MW-12 121218	12/12/18	1410							X		☐

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? ☐ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
☐ Standard ☐ No QC ☐ DQA*
☐ ASP A* ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
☐ Other: _____
State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:
Jessica Holt	Fedex	12/12/18	1900
Fedex	[signature]	12/13/18	1030

Temp °C: Observed 2.6; Correction Factor 0; Corrected 2.6; IR ID # 01

☐ EDD format: _____
☐ E-mail to: see pg 1

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SC52617 By

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CHAIN OF CUSTODY RECORD

Page 3 of 3

Special Handling:

- [X] Standard TAT - 7 to 10 business days
- [ ] Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 30 days unless otherwise instructed.

Report To: see pg 1

Telephone #:
Project Mgr:

Invoice To: see pg 1

P.O No.: Quote #:

Project No: 60284002
Site Name: NE Alloys
Location: UTICA, NY State: NY
Sampler(s): AG, JK

F=Field Filtered 1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= 12=

DW=Drinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1= X2= X3=

G= Grab C=Composite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analysis: List Preservative Code below: 2 — EPA 624	Check if chlorinated
SC52617-2	MW-1 121218	12/12/18	1530	G	GW	3				X	

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? [ ] Yes [ ] No
CT DPH RCP Report? [ ] Yes [ ] No
[ ] Standard [ ] No QC [ ] DQA*
[ ] ASP A* [ ] ASP B*
[ ] NJ Reduced* [ ] NJ Full*
[ ] Tier II* [ ] Tier IV*
[ ] Other:
State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:
Alwar Ali	Fedex	12/12/18	1900
Jack		12/13/18	1130

Temp °C: Observed 2.6; Correction Factor 0; Corrected 2.6; IR ID # 01

[ ] EDD format:
[ ] E-mail to:

Condition upon receipt: Custody Seals: [ ] Present [X] Intact [ ] Broken
[ ] Ambient [X] Iced [ ] Refrigerated [ ] DI VOA Frozen [ ] Soil Jar Frozen

SC52617 · Bm

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CHAIN OF CUSTODY RECORD

Page 2 of 3

Special Handling:

- [X] Standard TAT - 7 to 10 business days
- [ ] Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 30 days unless otherwise instructed.

Report To: Lindsay Mitchell
AECOM
40 British American Blvd
Latham, NY 12110
Telephone #: (518) - 951 - 2373
Project Mgr: Lindsay Mitchell

Invoice To: Lindsay Mitchell

P.O No.: _____ Quote #: _____

Project No: 60284002
Site Name: NE Alloys
Location: Utica, NY State: NY
Sampler(s): AG + JK

F=Field Filtered 1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

DW=Drinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1=_____ X2=_____ X3=_____

G= Grab C=Composite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass VOA's	# of Clear Glass	# of Plastic	Analysis: EDA624	List Preservative Code below: 2	Check if chlorinated
SC52617-11	MW-7R 121118	12/11/18	09:30		GW		3			X		☐
12	MW-9 121118	12/11/18	10:35		GW					X		☐
13	MW-10 121118	12/11/18	11:05							X		☐
14	MW-8 121118	12/11/18	11:45							X		☐
15	MW-6 121118	12/11/18	14:15							X		☐
16	MW-17 121118	12/11/18	14:30							X		☐
17	MW-15 121218	12/12/18	09:40							X		☐
18	MW-5 121218	12/12/18	11:00							X		☐
19	MW-18 121218	12/12/18	12:50							X		☐
20	MW-12 121218	12/12/18	1410							X		☐

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? ☐ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
☐ Standard ☐ No QC ☐ DQA*
☐ ASP A* ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
☐ Other: _____
State-specific reporting standards:

Coll. date and time added per sample labels. Client notified. Bm 12/18

Relinquished by:	Received by:	Date:	Time:
Alexa Goh Fedex	Fedex	12/12/18	1900
		12/13/18	1030

Temp °C: Observed 2.6; Correction Factor 0; Corrected 2.6; IR ID # 01

☐ EDD format: _____
☐ E-mail to: see pg 1

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SC52617 Bm

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CHAIN OF CUSTODY RECORD

Page 3 of 3

Special Handling:

- [X] Standard TAT - 7 to 10 business days
- [ ] Rush TAT - Date Needed: _____

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 30 days unless otherwise instructed.

Report To: _____
see pg 1

Invoice To: _____
see pg 1

Telephone #: _____
Project Mgr: _____

P.O No.: _____ Quote #: _____

Project No: 60284002
Site Name: NE Alloys
Location: UTICA, NY State: NY
Sampler(s): AG, JK

F=Field Filtered 1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11=_____ 12=_____

DW=Drinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1=_____ X2=_____ X3=_____

G= Grab C=Composite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analysis: List Preservative Code below: 2 — EPA 624	Check if chlorinated	QA/QC Reporting Notes: * additional charges may appply
SC52617-21	MW-1 121218	12/12/18	1530	G	GW	3				X		TB added. client notified. Bm 12/13
↓ 22	Trip Blank					1				X		

MA DEP MCP CAM Report? [ ] Yes [ ] No
CT DPH RCP Report? [ ] Yes [ ] No
[ ] Standard [ ] No QC [ ] DQA*
[ ] ASP A* [ ] ASP B*
[ ] NJ Reduced* [ ] NJ Full*
[ ] Tier II* [ ] Tier IV*
[ ] Other: _____
State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:	Temp °C
Alwad Ali	Fedex	12/12/18	1900	Observed 2.6
Jack				Correction Factor 0
	Ck Knowles	12/13/18	1130	Corrected 2.6
				IR ID # 01

[ ] EDD format: _____
[ ] E-mail to: _____

Condition upon receipt: Custody Seals: [ ] Present [X] Intact [ ] Broken
[ ] Ambient [X] Iced [ ] Refrigerated [ ] DI VOA Frozen [ ] Soil Jar Frozen

ODY SEAL

12/18

00055

00076

1678

FedEx Express Package US Airbill

*FedEx Tracking Number 8113 0089 4530

Form ID No. 0215

Recipient's Copy

1 From

Date 12/12/18

Sender's Name Alexandra Golden Phone 518 951-2200

Company AECOM TECHNICAL SERVICES

Address 40 BRITISH AMERICAN BLVD Dept./Floor/Suite/Room

City LATHAM State NY ZIP 12110-1421

2 Your Internal Billing Reference NE Ames

3 To

Recipient's Name Sample Recipient Phone

Company Eurofins

Address 11 Aberjona Drive Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Agawam State MA ZIP 01001

0126479001

Hold Weekday
FedEx location address REQUIRED. NOT available for FedEx First Overnight.

Hold Saturday
FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

8113 0089 4530

4 Express Package Service * To most locations.

Packages up to 150 lbs.
For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
- FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options Fees may apply. See the FedEx Service Guide.

Saturday Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

- No Signature Required — Package may be left without obtaining a signature for delivery.
- Direct Signature — Someone at recipient's address may sign for delivery.
- Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

Does this shipment contain dangerous goods?

One box must be checked.

- No
- Yes — As per attached Shipper's Declaration.
- Yes — Shipper's Declaration not required.
- Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Restrictions apply for dangerous goods — see the current FedEx Service Guide.

Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below. Obtain recip. Acct. No.

Sender Acct. No. in Section 1 will be billed. Recipient Third Party Credit Card Cash/Check

Total Packages 1 Total Weight ____ lbs. Credit Card Auth.

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

611

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06440036

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Batch Summary

460149A

Subcontracted Analyses

CC14404-BLK
CC14404-LCS
CC14404-LCSD
CC14404-MS
CC14404-MSD
SC52617-01 (BR-1 121018)
SC52617-02 (BR-2 121018)
SC52617-03 (MW-3 121018)
SC52617-04 (MW-13 121018)

460155A

Subcontracted Analyses

CC14807-BLK
CC14807-LCS
CC14807-LCSD
CC14807-MS
CC14807-MSD
SC52617-05 (MW-14 121018)
SC52617-06 (MW-16 121018)
SC52617-07 (MW-11 121018)
SC52617-08 (MW-4 121018)
SC52617-11 (MW-7R 121118)
SC52617-12 (MW-9 121118)
SC52617-13 (MW-10 121118)
SC52617-18 (MW-5 121218)
SC52617-19 (MW-18 121218)
SC52617-21 (MW-1 121218)
SC52617-22 (Trip Blank)

460364A

Subcontracted Analyses

CC14805-BLK
CC14805-LCS
CC14805-MS
CC14805-MSD
SC52617-16 (MW-17 121118)
SC52617-20 (MW-12 121218)

460366A

Subcontracted Analyses

CC15501-BLK
CC15501-LCS
CC15501-LCSD
CC15501-MS
CC15501-MSD
SC52617-09 (DUP)
SC52617-14 (MW-8 121118)
SC52617-15 (MW-6 121118)
SC52617-17 (MW-15 121218)

460528A

Subcontracted Analyses

CC16131-BLK
CC16131-LCS
CC16131-LCSD
CC16131-MS
CC16131-MSD
SC52617-10 (BR-3 121118)

Data Package

con-test®
ANALYTICAL LABORATORY

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

December 28, 2018

Lindsay Mitchell
AECOM Environment - Latham, NY
40 British American Blvd.
Latham, NY 12110

Project Location: Utica, NY
Client Job Number:
Project Number: 60284002
Laboratory Work Order Number: 18L0603

Enclosed are results of analyses for samples received by the laboratory on December 12, 2018. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Aaron L. Benoit
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

AECOM Environment - Latham, NY
40 British American Blvd.
Latham, NY 12110
ATTN: Lindsay Mitchell

REPORT DATE: 12/28/2018

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 60284002

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 18L0603

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Utica, NY

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-15 121218	18L0603-01	Ground Water		SOP 434-PFAAS	
				SW-846 8270D	
MW-5 121218	18L0603-02	Ground Water		SOP 434-PFAAS	
				SW-846 8270D	
MW-18 121218	18L0603-03	Ground Water		SOP 434-PFAAS	
				SW-846 8270D	
MW-12 121218	18L0603-04	Ground Water		SOP 434-PFAAS	
				SW-846 8270D	
MW-1 121218	18L0603-05	Ground Water		SOP 434-PFAAS	
				SW-846 8270D	
field blank	18L0603-06	Field Blank		SOP 434-PFAAS	
equipment blank	18L0603-07	Equipment Blank Water		SOP 434-PFAAS	
DUP	18L0603-08	Ground Water		SOP 434-PFAAS	
				SW-846 8270D	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

SOP 434-PFAAS

Qualifications:

L-02

Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.

Analyte & Samples(s) Qualified:

8:2 Fluorotelomersulfonate (8:2 FT
B219828-BS1

L-03

Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

Perfluorooctanesulfonamide (FOS
B219828-BS1

MS-08

Matrix spike recovery outside of control limits. Possibility of sample matrix effects that lead to a low bias for reported result or non-homogeneous sample aliquots cannot be eliminated.

Analyte & Samples(s) Qualified:

Perfluorotetradecanoic acid (PFTA
B219828-MS1

Perfluorotridecanoic acid (PFTrD
B219828-MS1

MS-11

Matrix spike recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.

Analyte & Samples(s) Qualified:

Perfluorohexanesulfonic acid (PFH
B219828-MS1

MS-12

Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.

Analyte & Samples(s) Qualified:

6:2 Fluorotelomersulfonate (6:2 FT
B219828-MS1, B219828-MSD1

8:2 Fluorotelomersulfonate (8:2 FT
B219828-MS1, B219828-MSD1

Perfluorobutanesulfonic acid (PFB
B219828-MS1, B219828-MSD1

Perfluoroheptanesulfonic acid (PFI
B219828-MS1, B219828-MSD1

Perfluoroheptanoic acid (PFHpA)
B219828-MS1, B219828-MSD1

Perfluorohexanoic acid (PFHxA)
B219828-MS1, B219828-MSD1

Perfluorononanoic acid (PFNA)
B219828-MS1, B219828-MSD1

MS-23

Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is outside of the method specified criteria. Reduced precision anticipated for any reported result for this compound.

Analyte & Samples(s) Qualified:

Perfluorohexanesulfonic acid (PFH
B219828-MSD1

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

R-02

Duplicate RPD is outside of control limits. Outlier can be attributed to sample non-homogeneity encountered during sample prep.

Analyte & Samples(s) Qualified:

NMeFOSAA
B219828-MSD1

Perfluorooctanesulfonamide (FOSA
B219828-MSD1

Perfluorotetradecanoic acid (PFTA
B219828-MSD1

Perfluorotridecanoic acid (PFTrDA
B219828-MSD1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Project Manager

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Utica, NY | Sample Description: | Work Order: 18L0603

Date Received: 12/12/2018

Field Sample #: MW-15 121218 | Sampled: 12/12/2018 09:40

Sample ID: 18L0603-01

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	0.56	0.20	µg/L	1		SW-846 8270D	12/19/18	12/24/18 13:17	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual				
1,4-Dioxane-d8	25.7	15-110				12/24/18 13:17	

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Project Location: Utica, NY | Sample Description: | Work Order: 18L0603

Date Received: 12/12/2018

Field Sample #: MW-15 121218 | Sampled: 12/12/2018 09:40

Sample ID: 18L0603-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - GC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
Perfluorohexanoic acid (PFHxA)	2.6	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	110	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
Perfluorooctanoic acid (PFOA)	2.6	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
NEtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:34	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	97.8	70-130		12/27/18 11:34
13C-PFDA	88.5	70-130		12/27/18 11:34
d5-NEtFOSAA	87.0	70-130		12/27/18 11:34

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Utica, NY | Sample Description: | Work Order: 18L0603

Date Received: 12/12/2018

Field Sample #: MW-5 121218 | Sampled: 12/12/2018 11:00

Sample ID: 18L0603-02

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	4.0	0.19	µg/L	1		SW-846 8270D	12/19/18	12/24/18 13:36	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual				
1,4-Dioxane-d8	22.6	15-110				12/24/18 13:36	

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Project Location: Utica, NY | Sample Description: | Work Order: 18L0603

Date Received: 12/12/2018

Field Sample #: MW-5 121218 | Sampled: 12/12/2018 11:00

Sample ID: 18L0603-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - GC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	3.1	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	6.6	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
Perfluorohexanesulfonic acid (PFHxS)	2.7	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
Perfluorooctanoic acid (PFOA)	9.6	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
Perfluorooctanesulfonic acid (PFOS)	10	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
NEtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:47	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	90.5	70-130		12/27/18 11:47
13C-PFDA	85.8	70-130		12/27/18 11:47
d5-NEtFOSAA	80.7	70-130		12/27/18 11:47

con-test® ANALYTICAL LABORATORY
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Project Location: Utica, NY | Sample Description: | Work Order: 18L0603

Date Received: 12/12/2018

Field Sample #: MW-18 121218 | Sampled: 12/12/2018 12:50

Sample ID: 18L0603-03

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.20	µg/L	1		SW-846 8270D	12/19/18	12/24/18 13:56	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual				
1,4-Dioxane-d8	23.2	15-110				12/24/18 13:56	

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Project Location: Utica, NY | Sample Description: | Work Order: 18L0603

Date Received: 12/12/2018

Field Sample #: MW-18 121218 | Sampled: 12/12/2018 12:50

Sample ID: 18L0603-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - GC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	11	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
Perfluorohexanoic acid (PFHxA)	11	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
Perfluoroheptanoic acid (PFHpA)	12	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
Perfluorobutanoic acid (PFBA)	2.9	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
Perfluoropentanoic acid (PFPeA)	9.8	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
Perfluorohexanesulfonic acid (PFHxS)	5.4	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
Perfluorooctanoic acid (PFOA)	79	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
Perfluorooctanesulfonic acid (PFOS)	20	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
Perfluorononanoic acid (PFNA)	4.4	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
NEtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 11:59	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
13C-PFHxA	104	70-130			12/27/18 11:59
13C-PFDA	87.1	70-130			12/27/18 11:59
d5-NEtFOSAA	85.3	70-130			12/27/18 11:59

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Utica, NY | Sample Description: | Work Order: 18L0603

Date Received: 12/12/2018

Field Sample #: MW-12 121218 | Sampled: 12/12/2018 14:10

Sample ID: 18L0603-04

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.19	µg/L	1		SW-846 8270D	12/19/18	12/24/18 14:15	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual				
1,4-Dioxane-d8	26.9	15-110				12/24/18 14:15	

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Utica, NY | Sample Description: | Work Order: 18L0603

Date Received: 12/12/2018

Field Sample #: MW-12 121218 | Sampled: 12/12/2018 14:10

Sample ID: 18L0603-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - GC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	3.6	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
Perfluorobutanoic acid (PFBA)	3.3	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	5.6	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
Perfluorohexanesulfonic acid (PFHxS)	4.8	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
Perfluorooctanoic acid (PFOA)	3.1	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
NEtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:12	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	78.4	70-130		12/27/18 12:12
13C-PFDA	94.9	70-130		12/27/18 12:12
d5-NEtFOSAA	89.7	70-130		12/27/18 12:12

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Utica, NY | Sample Description: | Work Order: 18L0603

Date Received: 12/12/2018

Field Sample #: MW-1 121218 | Sampled: 12/12/2018 15:30

Sample ID: 18L0603-05

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.19	µg/L	1		SW-846 8270D	12/19/18	12/24/18 14:35	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual				
1,4-Dioxane-d8	22.0	15-110				12/24/18 14:35	

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Project Location: Utica, NY | Sample Description: | Work Order: 18L0603

Date Received: 12/12/2018

Field Sample #: MW-1 121218 | Sampled: 12/12/2018 15:30

Sample ID: 18L0603-05

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - GC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
Perfluoropentanoic acid (PFPeA)	2.5	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
NEtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:25	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	111	70-130		12/27/18 12:25
13C-PFDA	98.3	70-130		12/27/18 12:25
d5-NEtFOSAA	85.9	70-130		12/27/18 12:25

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Utica, NY | Sample Description: | Work Order: 18L0603

Date Received: 12/12/2018

Field Sample #: field blank | Sampled: 12/12/2018 11:10

Sample ID: 18L0603-06

Sample Matrix: Field Blank

Semivolatile Organic Compounds by - GC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
NEtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:38	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	112	70-130		12/27/18 12:38
13C-PFDA	93.9	70-130		12/27/18 12:38
d5-NEtFOSAA	87.8	70-130		12/27/18 12:38

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Utica, NY | Sample Description: | Work Order: 18L0603

Date Received: 12/12/2018

Field Sample #: equipment blank | Sampled: 12/12/2018 12:55

Sample ID: 18L0603-07

Sample Matrix: Equipment Blank Water

Semivolatile Organic Compounds by - GC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
NEtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 12:50	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	103	70-130		12/27/18 12:50
13C-PFDA	94.5	70-130		12/27/18 12:50
d5-NEtFOSAA	100	70-130		12/27/18 12:50

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Utica, NY | Sample Description: | Work Order: 18L0603

Date Received: 12/12/2018

Field Sample #: DUP | Sampled: 12/12/2018 00:00

Sample ID: 18L0603-08

Sample Matrix: Ground Water

1,4-Dioxane by isotope dilution GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	4.0	0.19	µg/L	1		SW-846 8270D	12/19/18	12/24/18 14:54	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual				
1,4-Dioxane-d8	23.9	15-110				12/24/18 14:54	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Utica, NY | Sample Description: | Work Order: 18L0603

Date Received: 12/12/2018

Field Sample #: DUP | Sampled: 12/12/2018 00:00

Sample ID: 18L0603-08

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - GC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	13	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
Perfluorohexanoic acid (PFHxA)	45	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
Perfluoroheptanoic acid (PFHpA)	18	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
Perfluorobutanoic acid (PFBA)	12	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
Perfluoropentanoic acid (PFPeA)	47	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
Perfluorohexanesulfonic acid (PFHxS)	10	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
Perfluorooctanoic acid (PFOA)	94	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
Perfluorooctanesulfonic acid (PFOS)	21	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
Perfluorononanoic acid (PFNA)	4.1	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
NMeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
NEtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	12/24/18	12/27/18 13:03	KAF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
13C-PFHxA	93.3	70-130		12/27/18 13:03
13C-PFDA	77.9	70-130		12/27/18 13:03
d5-NEtFOSAA	75.7	70-130		12/27/18 13:03

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Sample Extraction Data

Prep Method: EPA 537-SOP 434-PFAAS

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18L0603-01 [MW-15 121218]	B219828	250	1.00	12/24/18
18L0603-02 [MW-5 121218]	B219828	250	1.00	12/24/18
18L0603-03 [MW-18 121218]	B219828	250	1.00	12/24/18
18L0603-04 [MW-12 121218]	B219828	250	1.00	12/24/18
18L0603-05 [MW-1 121218]	B219828	250	1.00	12/24/18
18L0603-06 [field blank]	B219828	250	1.00	12/24/18
18L0603-07 [equipment blank]	B219828	250	1.00	12/24/18
18L0603-08 [DUP]	B219828	250	1.00	12/24/18

Prep Method: SW-846 3510C-SW-846 8270D

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18L0603-01 [MW-15 121218]	B219578	1020	1.00	12/19/18
18L0603-02 [MW-5 121218]	B219578	1030	1.00	12/19/18
18L0603-03 [MW-18 121218]	B219578	1020	1.00	12/19/18
18L0603-04 [MW-12 121218]	B219578	1040	1.00	12/19/18
18L0603-05 [MW-1 121218]	B219578	1040	1.00	12/19/18
18L0603-08 [DUP]	B219578	1040	1.00	12/19/18

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QUALITY CONTROL

1,4-Dioxane by isotope dilution GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B219578 - SW-846 3510C										
Blank (B219578-BLK1)				Prepared: 12/19/18 Analyzed: 12/24/18						
1,4-Dioxane	ND	0.20	µg/L							
Surrogate: 1,4-Dioxane-d8	*3.07*		µg/L	10.0		30.7	15-110			
LCS (B219578-BS1)				Prepared: 12/19/18 Analyzed: 12/24/18						
1,4-Dioxane	10.5	0.20	µg/L	10.0		105	40-140			
Surrogate: 1,4-Dioxane-d8	*2.65*		µg/L	10.0		26.5	15-110			
LCS Dup (B219578-BSD1)				Prepared: 12/19/18 Analyzed: 12/24/18						
1,4-Dioxane	10.7	0.20	µg/L	10.0		107	40-140	1.92	30	
Surrogate: 1,4-Dioxane-d8	*2.51*		µg/L	10.0		25.1	15-110			
Matrix Spike (B219578-MS1)	**Source: 18L0603-02**			Prepared: 12/19/18 Analyzed: 12/24/18						
1,4-Dioxane	14.8	0.19	µg/L	9.71	3.99	111	40-140			
Surrogate: 1,4-Dioxane-d8	*2.34*		µg/L	9.71		24.1	15-110			
Matrix Spike Dup (B219578-MSD1)	**Source: 18L0603-02**			Prepared: 12/19/18 Analyzed: 12/24/18						
1,4-Dioxane	14.3	0.20	µg/L	9.80	3.99	106	40-140	3.02	20	
Surrogate: 1,4-Dioxane-d8	*2.49*		µg/L	9.80		25.4	15-110			

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B219828 - EPA 537											
Blank (B219828-BLK1)				Prepared: 12/24/18 Analyzed: 12/27/18							
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L								
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L								
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L								
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L								
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L								
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L								
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L								
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L								
6:2 Fluorotelomersulfonate (6:2 FTS)	ND	2.0	ng/L								
8:2 Fluorotelomersulfonate (8:2 FTS)	ND	2.0	ng/L								
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L								
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L								
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L								
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L								
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L								
NMeFOSAA	ND	2.0	ng/L								
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L								
NEtFOSAA	ND	2.0	ng/L								
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L								
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L								
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L								
Surrogate: 13C-PFHxA	*42.5*		ng/L	40.0		106		70-130			
Surrogate: 13C-PFDA	*37.2*		ng/L	40.0		93.1		70-130			
Surrogate: d5-NEtFOSAA	*144*		ng/L	160		89.9		70-130			
LCS (B219828-BS1)				Prepared: 12/24/18 Analyzed: 12/27/18							
Perfluorobutanesulfonic acid (PFBS)	11.5	0.0	ng/L	8.85		130		70-130			
Perfluorohexanoic acid (PFHxA)	12.9	0.0	ng/L	10.0		129		70-130			
Perfluoroheptanoic acid (PFHpA)	12.6	0.0	ng/L	10.0		126		70-130			
Perfluorobutanoic acid (PFBA)	4.66	0.0	ng/L	10.0		46.6		30-110			
Perfluorodecanesulfonic acid (PFDS)	12.2	0.0	ng/L	9.65		127		70-130			
Perfluoroheptanesulfonic acid (PFHpS)	12.1	0.0	ng/L	9.50		127		70-130			
Perfluorooctanesulfonamide (FOSA)	0.824	0.0	ng/L	10.0		**8.24**	*	30-110			L-03
Perfluoropentanoic acid (PFPeA)	13.0	0.0	ng/L	10.0		130		70-130			
6:2 Fluorotelomersulfonate (6:2 FTS)	11.1	0.0	ng/L	9.50		117		70-130			
8:2 Fluorotelomersulfonate (8:2 FTS)	15.2	0.0	ng/L	9.60		**158**	*	70-130			L-02
Perfluorohexanesulfonic acid (PFHxS)	11.4	0.0	ng/L	9.10		125		70-130			
Perfluorooctanoic acid (PFOA)	12.0	0.0	ng/L	10.0		120		70-130			
Perfluorooctanesulfonic acid (PFOS)	9.48	0.0	ng/L	9.25		102		70-130			
Perfluorononanoic acid (PFNA)	13.0	0.0	ng/L	10.0		130		70-130			
Perfluorodecanoic acid (PFDA)	11.8	0.0	ng/L	10.0		118		70-130			
NMeFOSAA	9.87	0.0	ng/L	10.0		98.7		70-130			
Perfluoroundecanoic acid (PFUnA)	11.8	0.0	ng/L	10.0		118		70-130			
NEtFOSAA	11.8	0.0	ng/L	10.0		118		70-130			
Perfluorododecanoic acid (PFDoA)	10.9	0.0	ng/L	10.0		109		70-130			
Perfluorotridecanoic acid (PFTrDA)	10.3	0.0	ng/L	10.0		103		70-130			
Perfluorotetradecanoic acid (PFTA)	10.9	0.0	ng/L	10.0		109		70-130			
Surrogate: 13C-PFHxA	*42.7*		ng/L	40.0		107		70-130			
Surrogate: 13C-PFDA	*38.1*		ng/L	40.0		95.2		70-130			
Surrogate: d5-NEtFOSAA	*157*		ng/L	160		98.1		70-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD		RPD Limit	Notes
Batch B219828 - EPA 537												
Matrix Spike (B219828-MS1)	**Source: 18L0603-02**			Prepared: 12/24/18 Analyzed: 12/27/18								
Perfluorobutanesulfonic acid (PFBS)	19.7	2.0	ng/L	8.85	3.14	**187**	*	70-130				MS-12
Perfluorohexanoic acid (PFHxA)	14.9	2.0	ng/L	10.0	ND	**149**	*	70-130				MS-12
Perfluoroheptanoic acid (PFHpA)	13.4	2.0	ng/L	10.0	ND	**134**	*	70-130				MS-12
Perfluorobutanoic acid (PFBA)	4.97	2.0	ng/L	10.0	ND	49.7		30-110				
Perfluorodecanesulfonic acid (PFDS)	12.1	2.0	ng/L	9.65	ND	125		70-130				
Perfluoroheptanesulfonic acid (PFHpS)	15.5	2.0	ng/L	9.50	ND	**163**	*	70-130				MS-12
Perfluorooctanesulfonamide (FOSA)	4.40	2.0	ng/L	10.0	ND	44.0		30-110				
Perfluoropentanoic acid (PFPeA)	12.5	2.0	ng/L	10.0	ND	125		70-130				
6:2 Fluorotelomersulfonate (6:2 FTS)	46.0	2.0	ng/L	9.50	6.57	**415**	*	70-130				MS-12
8:2 Fluorotelomersulfonate (8:2 FTS)	21.7	2.0	ng/L	9.60	ND	**226**	*	70-130				MS-12
Perfluorohexanesulfonic acid (PFHxS)	19.4	2.0	ng/L	9.10	2.66	**184**	*	70-130				MS-11
Perfluorooctanoic acid (PFOA)	21.7	2.0	ng/L	10.0	9.60	121		70-130				
Perfluorooctanesulfonic acid (PFOS)	19.0	2.0	ng/L	9.25	10.5	92.4		70-130				
Perfluorononanoic acid (PFNA)	14.1	2.0	ng/L	10.0	ND	**141**	*	70-130				MS-12
Perfluorodecanoic acid (PFDA)	10.2	2.0	ng/L	10.0	ND	102		70-130				
NMeFOSAA	8.83	2.0	ng/L	10.0	ND	88.3		70-130				
Perfluoroundecanoic acid (PFUnA)	10.4	2.0	ng/L	10.0	ND	104		70-130				
NEtFOSAA	12.1	2.0	ng/L	10.0	ND	121		70-130				
Perfluorododecanoic acid (PFDoA)	8.18	2.0	ng/L	10.0	ND	81.8		70-130				
Perfluorotridecanoic acid (PFTrDA)	6.01	2.0	ng/L	10.0	ND	**60.1**	*	70-130				MS-08
Perfluorotetradecanoic acid (PFTA)	4.00	2.0	ng/L	10.0	ND	**40.0**	*	70-130				MS-08
Surrogate: 13C-PFHxA	*37.5*		ng/L	40.0		93.7		70-130				
Surrogate: 13C-PFDA	*32.5*		ng/L	40.0		81.3		70-130				
Surrogate: d5-NEtFOSAA	*137*		ng/L	160		85.8		70-130				
Matrix Spike Dup (B219828-MSD1)	**Source: 18L0603-02**			Prepared: 12/24/18 Analyzed: 12/27/18								
Perfluorobutanesulfonic acid (PFBS)	17.9	2.0	ng/L	8.85	3.14	**167**	*	70-130	9.29		30	MS-12
Perfluorohexanoic acid (PFHxA)	14.8	2.0	ng/L	10.0	ND	**148**	*	70-130	0.207		30	MS-12
Perfluoroheptanoic acid (PFHpA)	13.6	2.0	ng/L	10.0	ND	**136**	*	70-130	1.42		30	MS-12
Perfluorobutanoic acid (PFBA)	5.00	2.0	ng/L	10.0	ND	50.0		30-110	0.603		30	
Perfluorodecanesulfonic acid (PFDS)	9.57	2.0	ng/L	9.65	ND	99.2		70-130	23.4		30	
Perfluoroheptanesulfonic acid (PFHpS)	16.0	2.0	ng/L	9.50	ND	**168**	*	70-130	3.10		30	MS-12
Perfluorooctanesulfonamide (FOSA)	6.06	2.0	ng/L	10.0	ND	60.6		30-110	**31.8**	*	30	R-02
Perfluoropentanoic acid (PFPeA)	12.8	2.0	ng/L	10.0	ND	128		70-130	1.71		30	
6:2 Fluorotelomersulfonate (6:2 FTS)	37.7	2.0	ng/L	9.50	6.57	**328**	*	70-130	19.8		30	MS-12
8:2 Fluorotelomersulfonate (8:2 FTS)	22.4	2.0	ng/L	9.60	ND	**233**	*	70-130	3.04		30	MS-12
Perfluorohexanesulfonic acid (PFHxS)	12.9	2.0	ng/L	9.10	2.66	113		70-130	**40.3**	*	30	MS-23
Perfluorooctanoic acid (PFOA)	22.3	2.0	ng/L	10.0	9.60	127		70-130	2.74		30	
Perfluorooctanesulfonic acid (PFOS)	20.2	2.0	ng/L	9.25	10.5	105		70-130	5.73		30	
Perfluorononanoic acid (PFNA)	14.8	2.0	ng/L	10.0	ND	**148**	*	70-130	4.51		30	MS-12
Perfluorodecanoic acid (PFDA)	12.1	2.0	ng/L	10.0	ND	121		70-130	17.1		30	
NMeFOSAA	12.8	2.0	ng/L	10.0	ND	128		70-130	**36.7**	*	30	R-02
Perfluoroundecanoic acid (PFUnA)	10.2	2.0	ng/L	10.0	ND	102		70-130	1.65		30	
NEtFOSAA	10.1	2.0	ng/L	10.0	ND	101		70-130	18.4		30	
Perfluorododecanoic acid (PFDoA)	10.0	2.0	ng/L	10.0	ND	100		70-130	20.3		30	
Perfluorotridecanoic acid (PFTrDA)	8.51	2.0	ng/L	10.0	ND	85.1		70-130	**34.4**	*	30	R-02
Perfluorotetradecanoic acid (PFTA)	7.52	2.0	ng/L	10.0	ND	75.2		70-130	**61.0**	*	30	R-02
Surrogate: 13C-PFHxA	*37.3*		ng/L	40.0		93.4		70-130				
Surrogate: 13C-PFDA	*35.4*		ng/L	40.0		88.6		70-130				
Surrogate: d5-NEtFOSAA	*128*		ng/L	160		80.1		70-130				

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.

L-02	Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
L-03	Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the low side.
MS-08	Matrix spike recovery outside of control limits. Possibility of sample matrix effects that lead to a low bias for reported result or non-homogeneous sample aliquots cannot be eliminated.
MS-11	Matrix spike recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.
MS-12	Matrix spike recovery and matrix spike duplicate recovery outside of control limits. Possibility of sample matrix effects that lead to a high bias for reported result or non-homogeneous sample aliquots cannot be eliminated.
MS-23	Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is outside of the method specified criteria. Reduced precision anticipated for any reported result for this compound.
R-02	Duplicate RPD is outside of control limits. Outlier can be attributed to sample non-homogeneity encountered during sample prep.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SOP 434-PFAAS in Water	
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorobutanoic acid (PFBA)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
6:2 Fluorotelomersulfonate (6:2 FTS)	NH-P
8:2 Fluorotelomersulfonate (8:2 FTS)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
NMeFOSAA	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
NEtFOSAA	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
SW-846 8270D in Water	
1,4-Dioxane	NY

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2019
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2019
NY	New York State Department of Health	10899 NELAP	04/1/2019
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2019
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2019
FL	Florida Department of Health	E871027 NELAP	06/30/2019
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2019
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2019
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2019
NC-DW	North Carolina Department of Health	25703	07/31/2019

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CHAIN OF CUSTODY RECORD (New York)

39 Spruce Street
East Longmeadow, MA 01028

Page 1 of 1

Company Name: AECOM
Address: 40 British American BVD, Latham
Phone: 518-951-2200
Project Name: NE ALLOYS
Project Location: UTICA, NY
Project Number: 60284002
Project Manager: Lindsay Mitchell
Con-Test Quote Name/Number:
Invoice Recipient: PM
Sampled By: Alexandra Golden / Jillian Kosiorek

Requested Turnaround Time
7-Day ☐ 10-Day ☒
Due Date: Standard TAT

Rush Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To: Lindsay.mitchell@aecom.com
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	Matrix Code	Conc Code	PFAS TRACE	1,4-DIOXANE	# of Containers	Preservation Code	Container Code
								2	2			
								P	A			
1	MW-15 121218	12/12/18	0940		G	GW	U	X	X			
2	MW-5 121218		1100					X	X			
3	MW-18 121218		~~1150~~	1250				X	X			
4	MW-12 121218		1410					X	X			
5	MW-1 121218		1530					X	X			
6	Field blank		1110					X				
7	Equipment blank		1255					X				
8	DUP		—					X	X			
2 per 9	MS		—					X	X			
10 per	MSD	✓	—		✓	✓	✓	X	X			

Dissolved Metals Samples
☐ Field Filtered
☐ Lab to Filter

Orthophosphate Samples
☐ Field Filtered
☐ Lab to Filter

[1] Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

[3] Container Codes:
A = Amber Glass
G = Glass
P = Plastic
ST = Sterile
V = Vial
S = Summa Canister
T = Tedlar Bag
O = Other (please define)

Comments:

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

	Relinquished by: (signature)	Date/Time:	Received by: (signature)	Date/Time:
1		12/12/18 1725		12/12/18 1725
2		12/12/18 1800		12/13/18 854
3				

Program & Regulatory Information
☐ AWQ STDS ☐ NY TOGS
☐ NYC Sewer Discharge ☐ NY CP-51
☐ Part 360 GW (Landfill)
☐ NY Restricted Use
☐ NY Unrestricted Use
☐ NY Part 375
Other:

Deliverables
☐ Enhanced Data Package
☒ NYSDEC EQuIS EDD
☐ EQuIS (Standard) EDD
☐ NY Regulatory EDD
☐ NY Regs Hits-Only EDD
Other:

NELAC and AIHA-LAP, LLC Accredited

Project Entity
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☐ School
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ *AIHA-LAP, LLC*

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

Page 27 of 29

Table of Contents

773957972790

Delivered
Thursday 12/13/2018 at 8:54 am

DELIVERED

Signed for by: M.PETRAITIS

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

FROM	TO
ALBANY, NY US	EAST LONGMEADOW, MA US

Shipment Facts

TRACKING NUMBER
773957972790

SERVICE
FedEx Priority Overnight

WEIGHT
45 lbs / 20.41 kgs

DIMENSIONS
24x14x14 in.

DELIVERED TO
Shipping/Receiving

TOTAL PIECES
1

TOTAL SHIPMENT WEIGHT
45 lbs / 20.41 kgs

TERMS
Recipient

SHIPPER REFERENCE
85

PACKAGING
Your Packaging

SPECIAL HANDLING SECTION
Deliver Weekday, Additional Handling Surcharge

STANDARD TRANSIT
12/13/2018 by 10:30 am

SHIP DATE
Wed 12/12/2018

ACTUAL DELIVERY
Thu 12/13/2018 8:54 am

Travel History

Local Scan Time

Thursday , 12/13/2018		
8:54 am	EAST LONGMEADOW, MA	Delivered
8:08 am	WINDSOR LOCKS, CT	On FedEx vehicle for delivery
7:00 am	WINDSOR LOCKS, CT	At local FedEx facility
2:26 am	NEWARK, NJ	Departed FedEx location
Wednesday , 12/12/2018		
11:49 pm	NEWARK, NJ	Arrived at FedEx location

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client AeCom

Received By mp Date 12/13/18 Time 854

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____ Direct from Sampling _____ Ambient _____ Melted Ice _____

By Gun # 1 Actual Temp - 4.4 | 4.8

Were samples within Temperature? 2-6°C T By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA

Was COC Relinquished ? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T

Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? F MS/MSD? T

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? T

Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.	16	1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	20	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:

SVOA

SAMPLE DATA

1 - FORM I
ANALYSIS DATA SHEET

MW-15 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-01	File ID:	F1224009.D
Sampled:	12/12/18 09:40	Prepared:	12/19/18 11:29	Analyzed:	12/24/18 13:17
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1020 mL / 1 mL				
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	0.56	0.032	0.20	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224009.D
Acq On : 24 Dec 2018 1:17 pm
Operator : CJM
Sample : 18L0603-01 Inst : GCMSSV6
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 26 08:04:34 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration

CHECKED BY Irina Radu DEC 27 2018

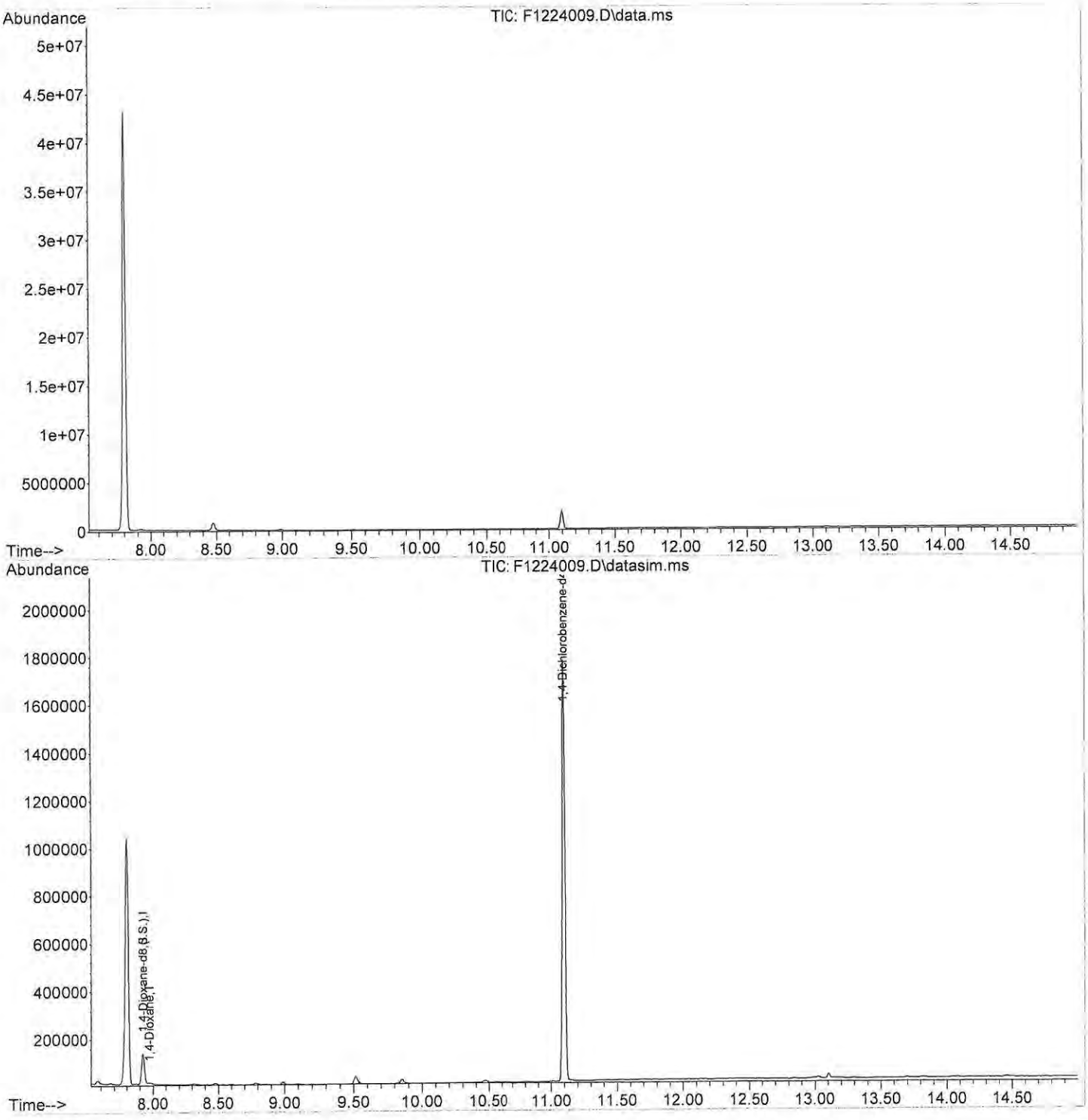
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	11.095	150	1293213	10.000	ug/mL	0.00
3) 1,4-Dioxane-d8 (I.S.)	7.924	96	102734	10.000	ug/mL	0.01
System Monitoring Compounds						
2) 1,4-Dioxane-d8	7.924	96	102734	2.573	ug/mL	0.00
Target Compounds						Qvalue
4] 1,4-Dioxane	7.971	88	6282	0.574	ug/mL#	61

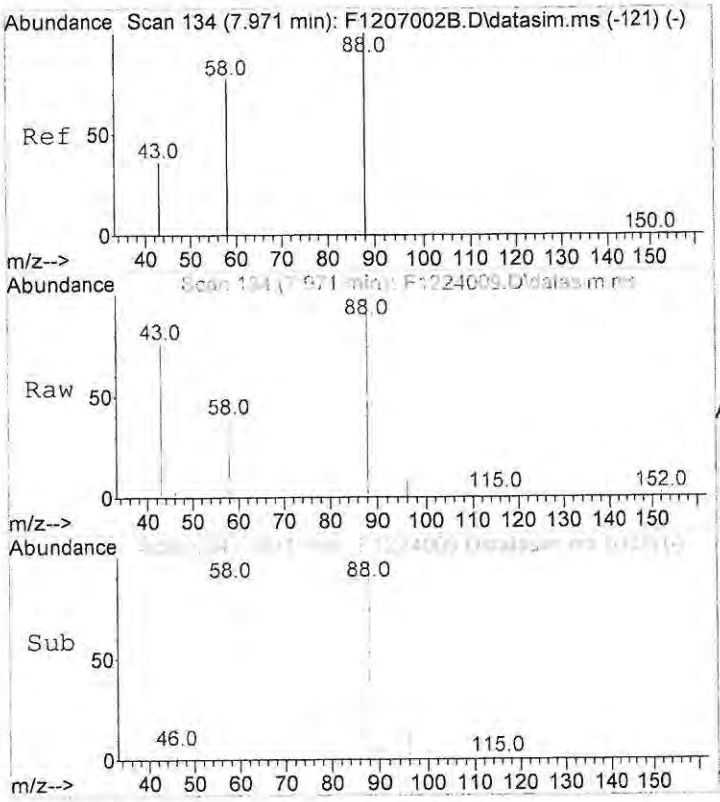
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224009.D
Acq On : 24 Dec 2018 1:17 pm
Operator : CJM
Sample : 18L0603-01 Inst : GCMSSV6
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 26 08:04:34 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration

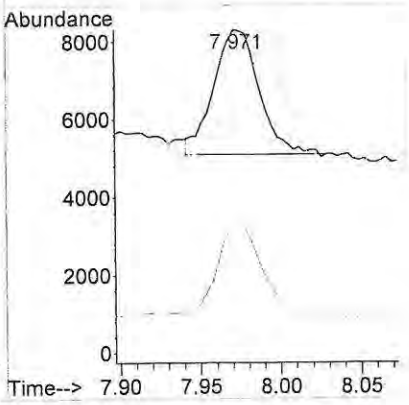




#4
1,4-Dioxane
Concen: 0.57 ug/mL
RT: 7.971 min Scan# 134
Delta R.T. 0.010 min
Lab File: F1224009.D
Acq: 24 Dec 2018 1:17 pm

Tgt Ion: 88 Resp: 6282

Ion	Ratio	Lower	Upper
88	100		
58	75.2	53.3	99.1
43	106.8	25.8	48.0#



1 - FORM I
ANALYSIS DATA SHEET

MW-5 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-02	File ID:	F1224010.D
Sampled:	12/12/18 11:00	Prepared:	12/19/18 11:29	Analyzed:	12/24/18 13:36
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1030 mL / 1 mL				
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	4.0	0.032	0.19	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224010.D
Acq On : 24 Dec 2018 1:36 pm
Operator : CJM
Sample : 18L0603-02 Inst : GCMSSV6
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 26 08:04:36 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	11.095	150	1376197	10.000	ug/mL	0.00
3) 1,4-Dioxane-d8 (I.S.)	7.924	96	96166	10.000	ug/mL	0.01
System Monitoring Compounds						
2) 1,4-Dioxane-d8	7.924	96	96166	2.263	ug/mL	0.00
Target Compounds						Qvalue
4] 1,4-Dioxane	7.971	88	42048	4.108	ug/mL	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

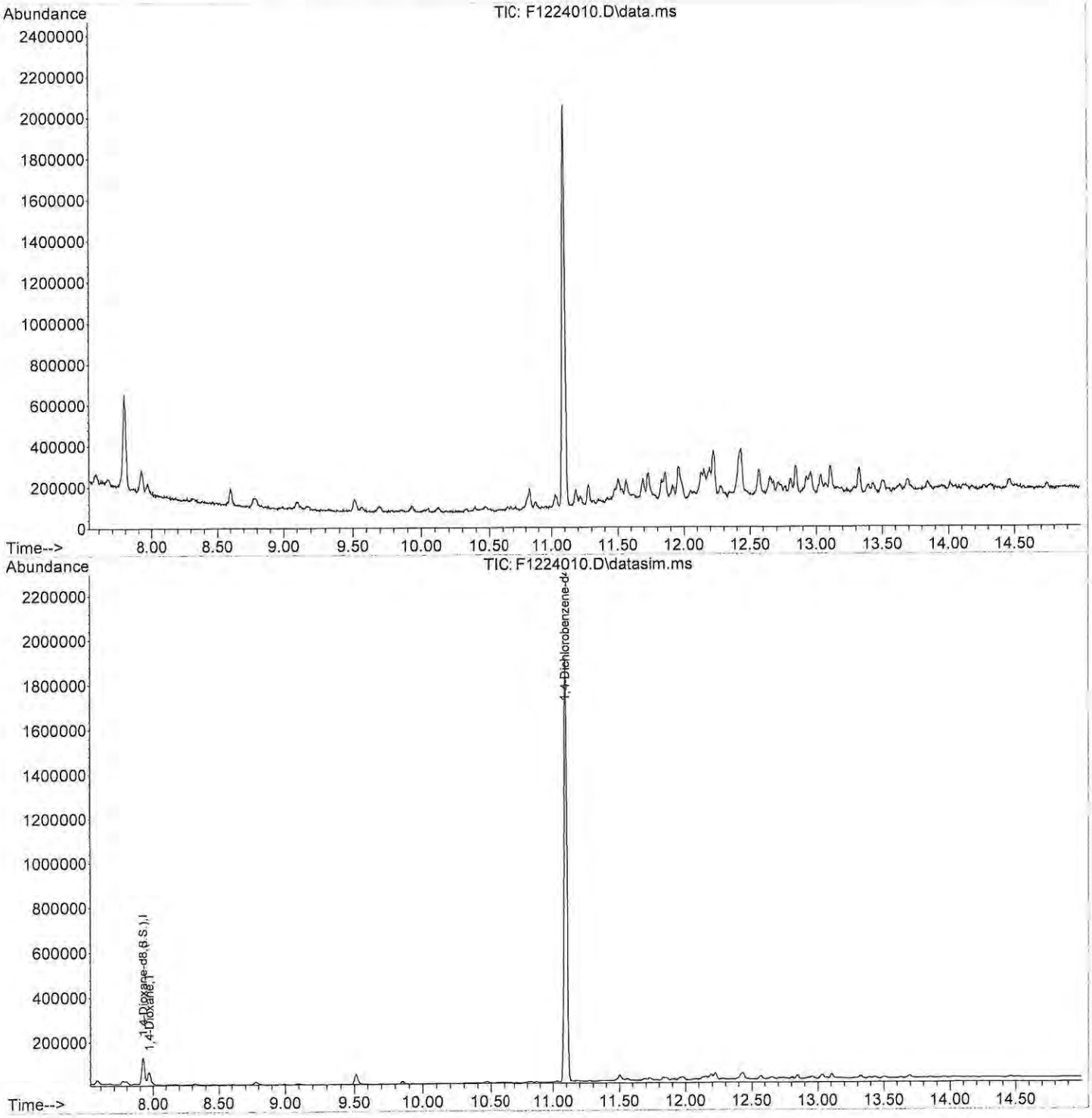
DEC 26 2018

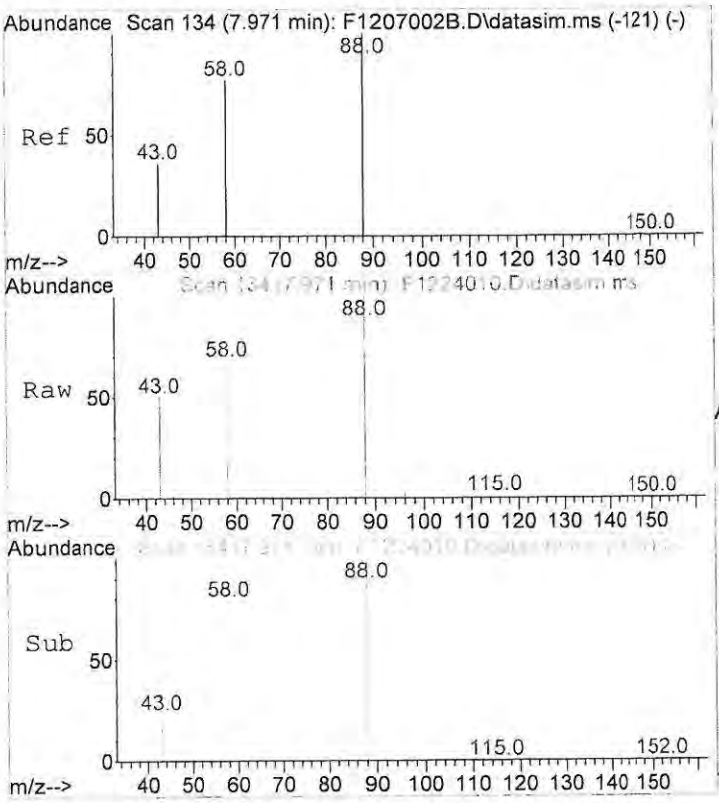
CHECKED BY
Irina Rasin

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224010.D
Acq On : 24 Dec 2018 1:36 pm
Operator : CJM
Sample : 18L0603-02 Inst : GCMSSV6
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 26 08:04:36 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration

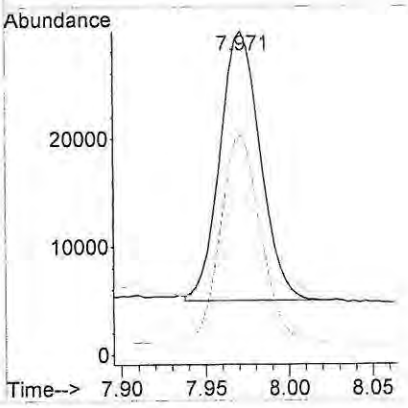




#4
1,4-Dioxane
Concen: 4.11 ug/mL
RT: 7.971 min Scan# 134
Delta R.T. 0.010 min
Lab File: F1224010.D
Acq: 24 Dec 2018 1:36 pm

Tgt Ion: 88 Resp: 42048

Ion	Ratio	Lower	Upper
88	100		
58	79.0	53.3	99.1
43	46.8	25.8	48.0



1 - FORM I
ANALYSIS DATA SHEET

MW-18 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-03	File ID:	F1224011.D
Sampled:	12/12/18 12:50	Prepared:	12/19/18 11:29	Analyzed:	12/24/18 13:56
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1020 mL / 1 mL				
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.032	0.20	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224011.D
Acq On : 24 Dec 2018 1:56 pm
Operator : CJM
Sample : 18L0603-03 Inst : GCMSSV6
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 26 08:12:24 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	11.095	150	1353646	10.000	ug/mL	0.00
3) 1,4-Dioxane-d8 (I.S.)	7.924	96	96836	10.000	ug/mL	0.01
System Monitoring Compounds						
2) 1,4-Dioxane-d8	7.924	96	96836	2.317	ug/mL	0.00
Target Compounds						Qvalue
4] 1,4-Dioxane	7.971	88	1730m	0.168	ug/mL	

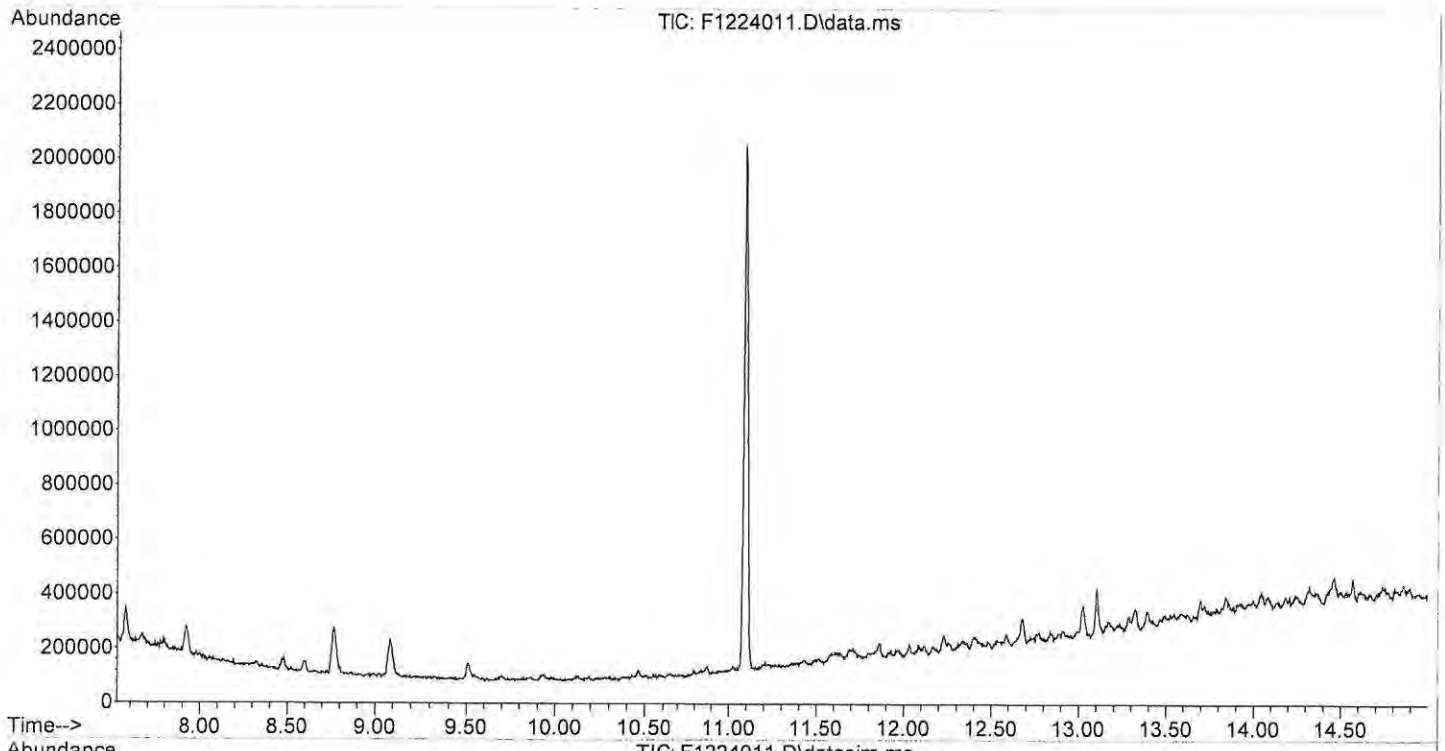
(#) = qualifier out of range (m) = manual integration (+) = signals summed

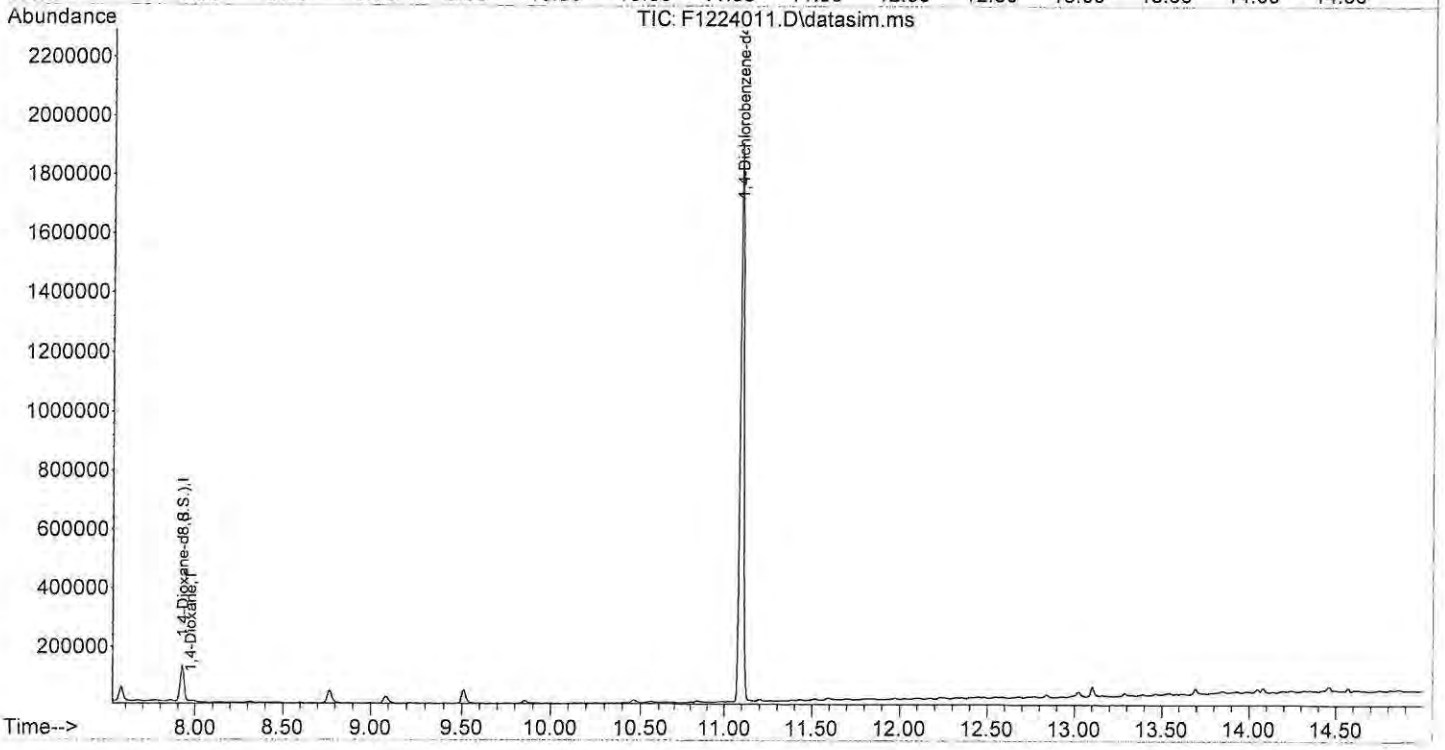
DEC 26 2018

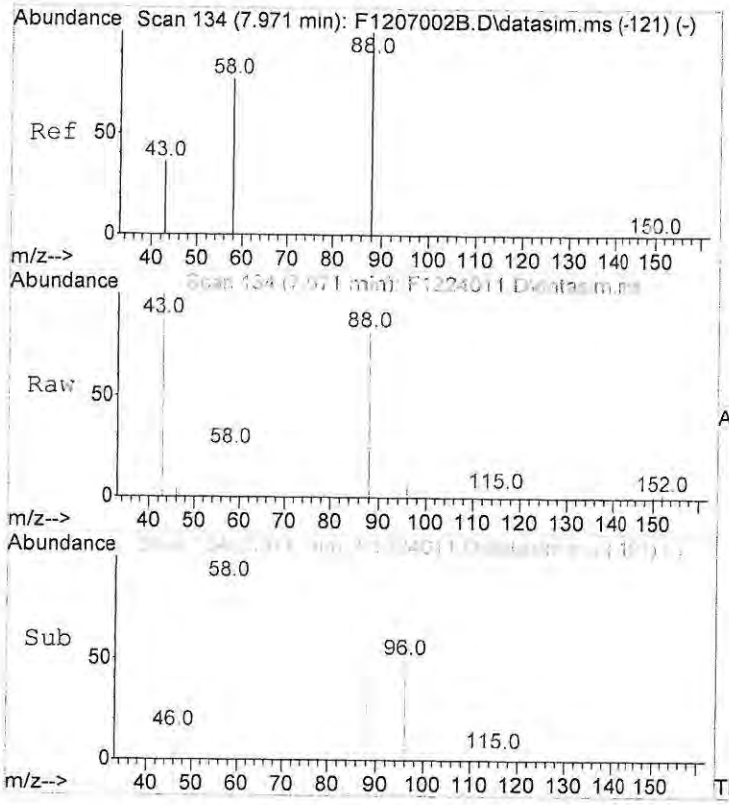
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224011.D
Acq On : 24 Dec 2018 1:56 pm
Operator : CJM
Sample : 18L0603-03 Inst : GCMSSV6
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 26 08:12:24 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration



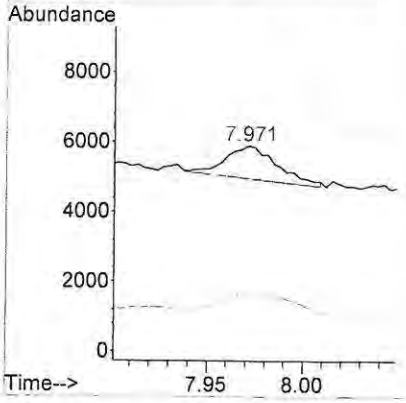




#4
1,4-Dioxane
Concen: 0.17 ug/mL m
RT: 7.971 min Scan# 134
Delta R.T. 0.010 min
Lab File: F1224011.D
Acq: 24 Dec 2018 1:56 pm

Tgt Ion: 88 Resp: 1730

Ion	Ratio	Lower	Upper
88	100		
58	65.8	53.3	99.1
43	35.5	25.8	48.0



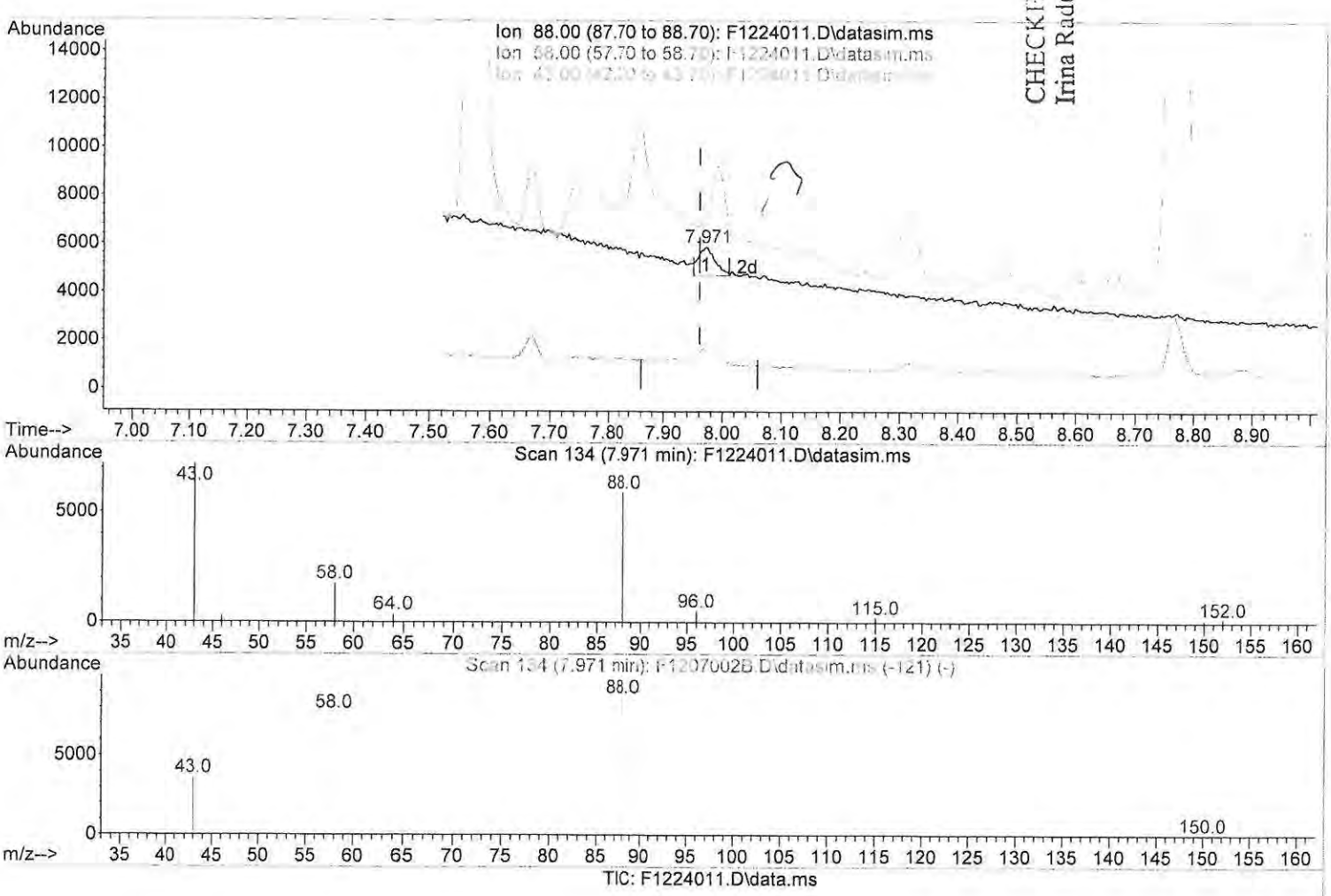
CHECKED BY

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224011.D
Acq On : 24 Dec 2018 1:56 pm
Operator : CJM
Sample : 18L0603-03 Inst : GCMSSV6
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 26 08:04:38 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration

DEC 26 2018
CHECKED
Irina Radu...



TIC: F1224011.D\data.ms

(4) 1,4-Dioxane (T)

7.971min (+ 0.010) 0.220 ug/mL

response 2263

Ion	Exp%	Act%
88.00	100.00	100.00
58.00	76.20	82.85
43.00	36.90	273.75#
0.00	0.00	0.00

1 - FORM I
ANALYSIS DATA SHEET

MW-12 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-04	File ID:	F1224012.D
Sampled:	12/12/18 14:10	Prepared:	12/19/18 11:29	Analyzed:	12/24/18 14:15
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1040 mL / 1 mL				
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.031	0.19	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224012.D
Acq On : 24 Dec 2018 2:15 pm
Operator : CJM
Sample : 18L0603-04 Inst : GCMSSV6
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 26 08:13:24 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	11.095	150	1372733	10.000	ug/mL	0.00
3) 1,4-Dioxane-d8 (I.S.)	7.927	96	114091	10.000	ug/mL	0.01
System Monitoring Compounds						
2) 1,4-Dioxane-d8	7.927	96	114135	2.693	ug/mL	0.01
Target Compounds						Qvalue
4) 1,4-Dioxane	0.000		0	N.D.	d	

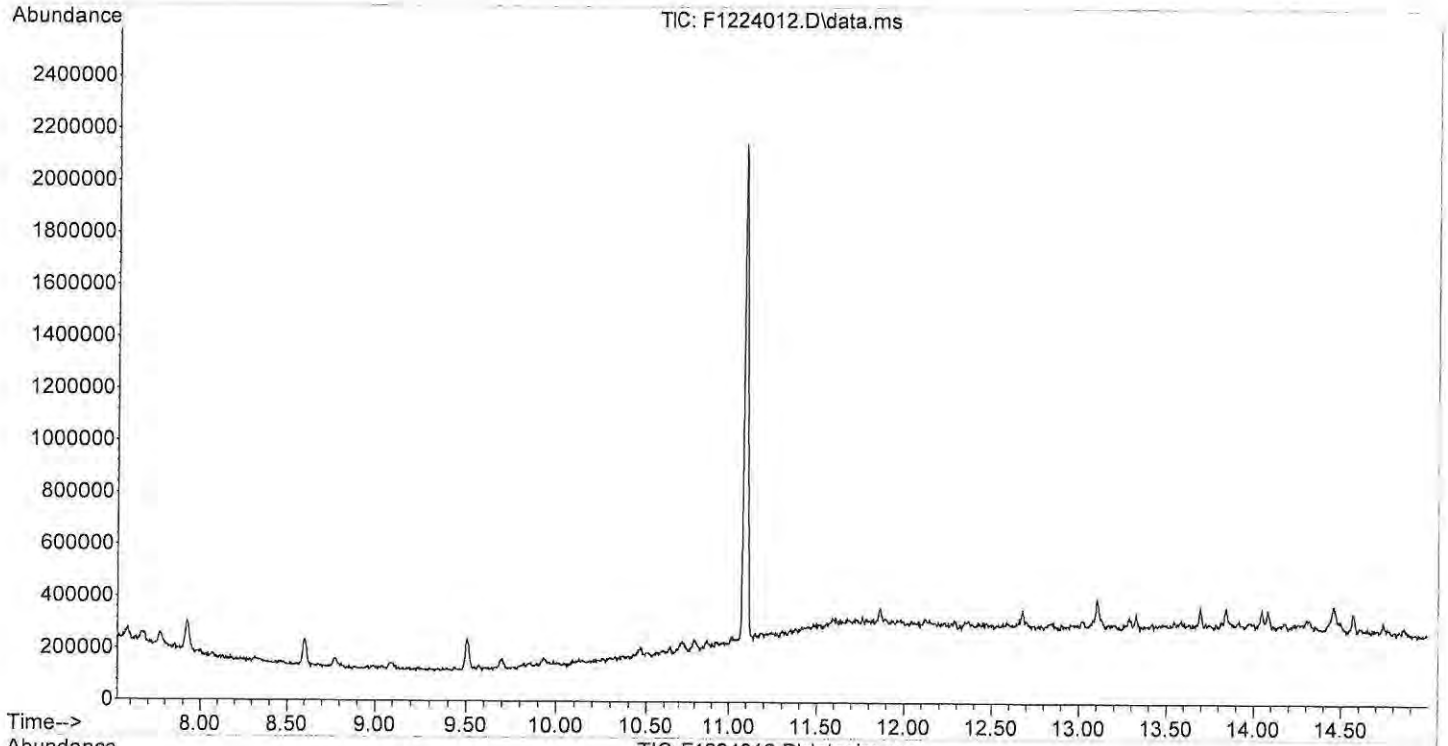
(#) = qualifier out of range (m) = manual integration (+) = signals summed

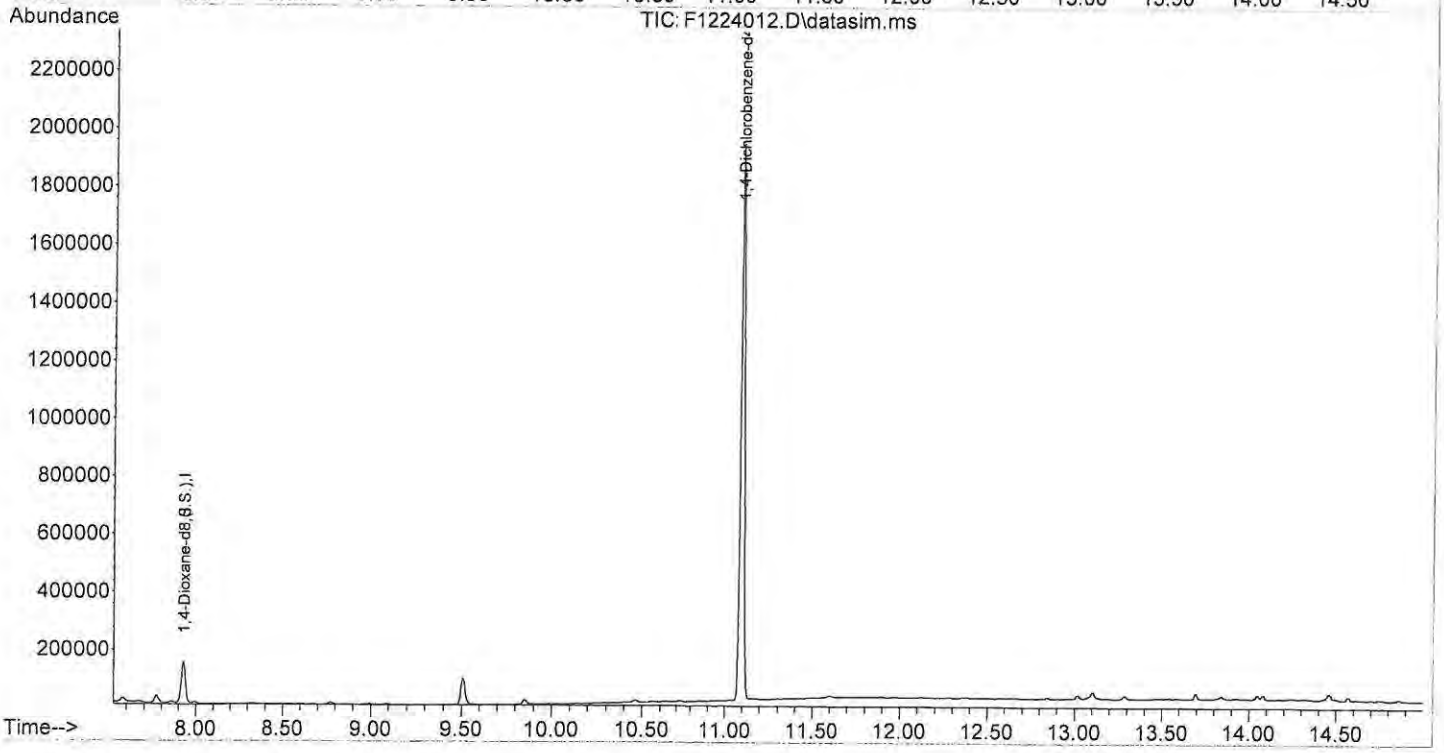
CHECK
Irina Ri

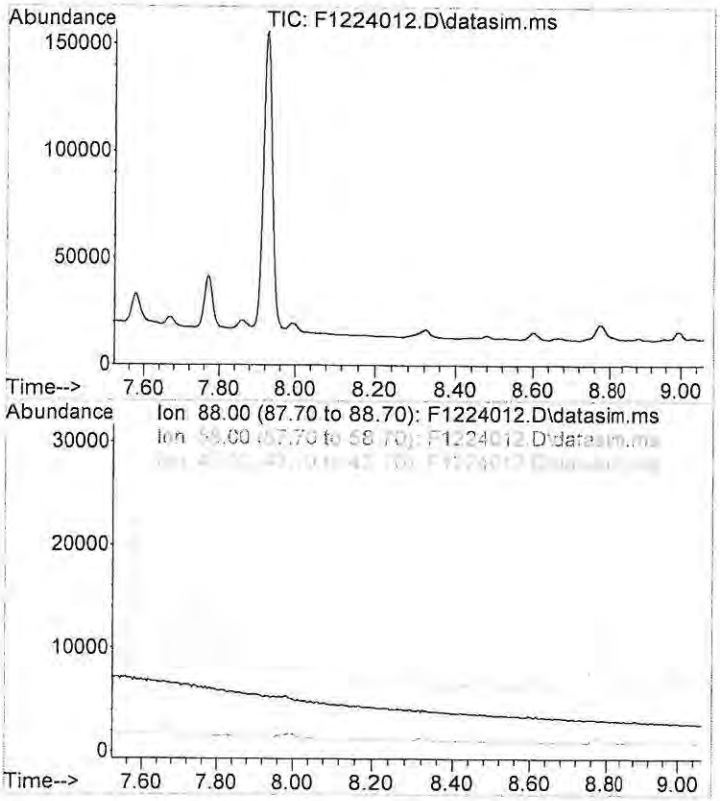
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224012.D
Acq On : 24 Dec 2018 2:15 pm
Operator : CJM
Sample : 18L0603-04 Inst : GCMSSV6
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 26 08:13:24 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration







#4
1,4-Dioxane
Concen: N.D.
Expected RT: 7.96 min

Lab File: F1224012.D
Acq: 24 Dec 2018 2:15 pm

Tgt Ion: 88

Sig	Exp Ratio
88	100
58	76.2
43	36.9

1 - FORM I
ANALYSIS DATA SHEET

MW-1 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-05	File ID:	F1224013.D
Sampled:	12/12/18 15:30	Prepared:	12/19/18 11:29	Analyzed:	12/24/18 14:35
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1040 mL / 1 mL				
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.031	0.19	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224013.D
Acq On : 24 Dec 2018 2:35 pm
Operator : CJM
Sample : 18L0603-05 Inst : GCMSSV6
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 26 08:04:42 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	11.095	150	1419040	10.000	ug/mL	0.00
3) 1,4-Dioxane-d8 (I.S.)	7.924	96	96405	10.000	ug/mL	0.01
System Monitoring Compounds						
2) 1,4-Dioxane-d8	7.924	96	96405	2.200	ug/mL	0.00
Target Compounds						Qvalue
4) 1,4-Dioxane	0.000		0	N.D.		

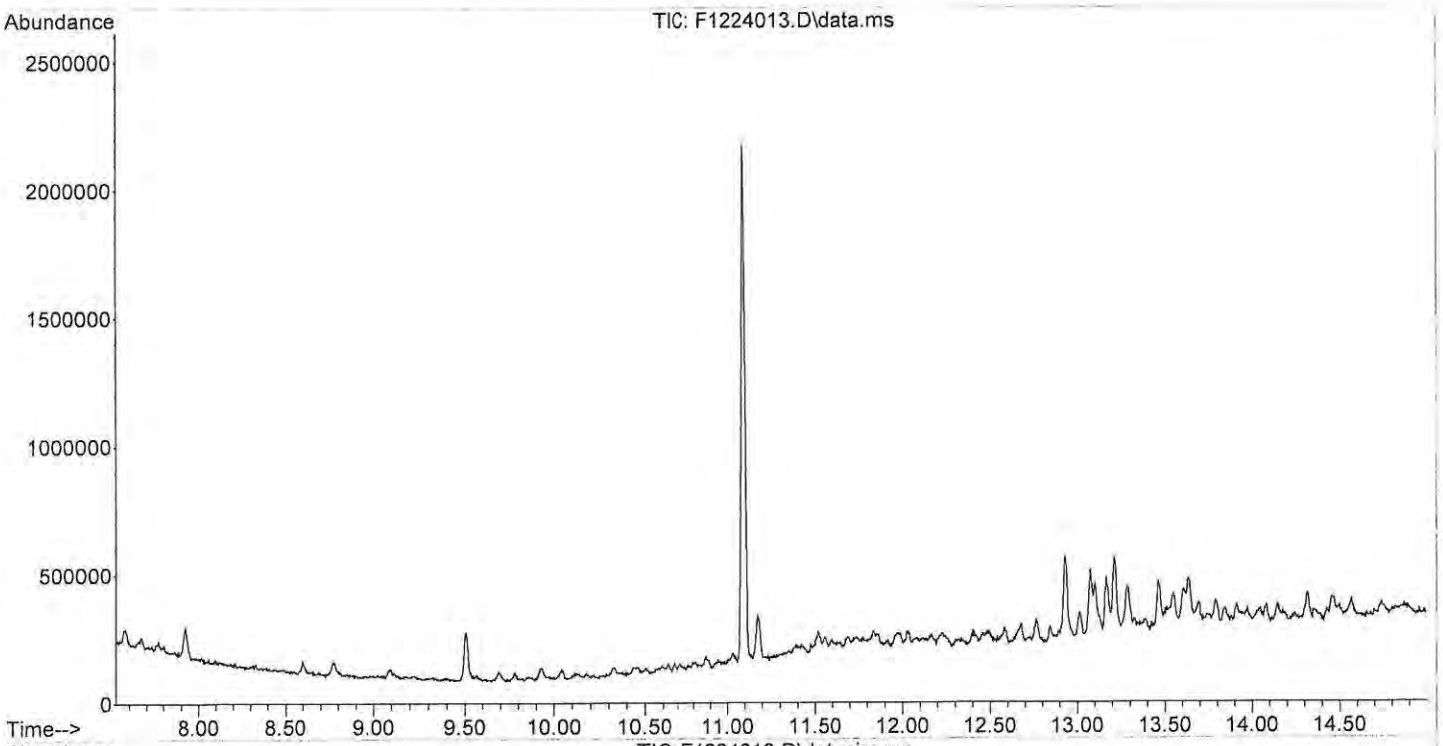
(#) = qualifier out of range (m) = manual integration (+) = signals summed

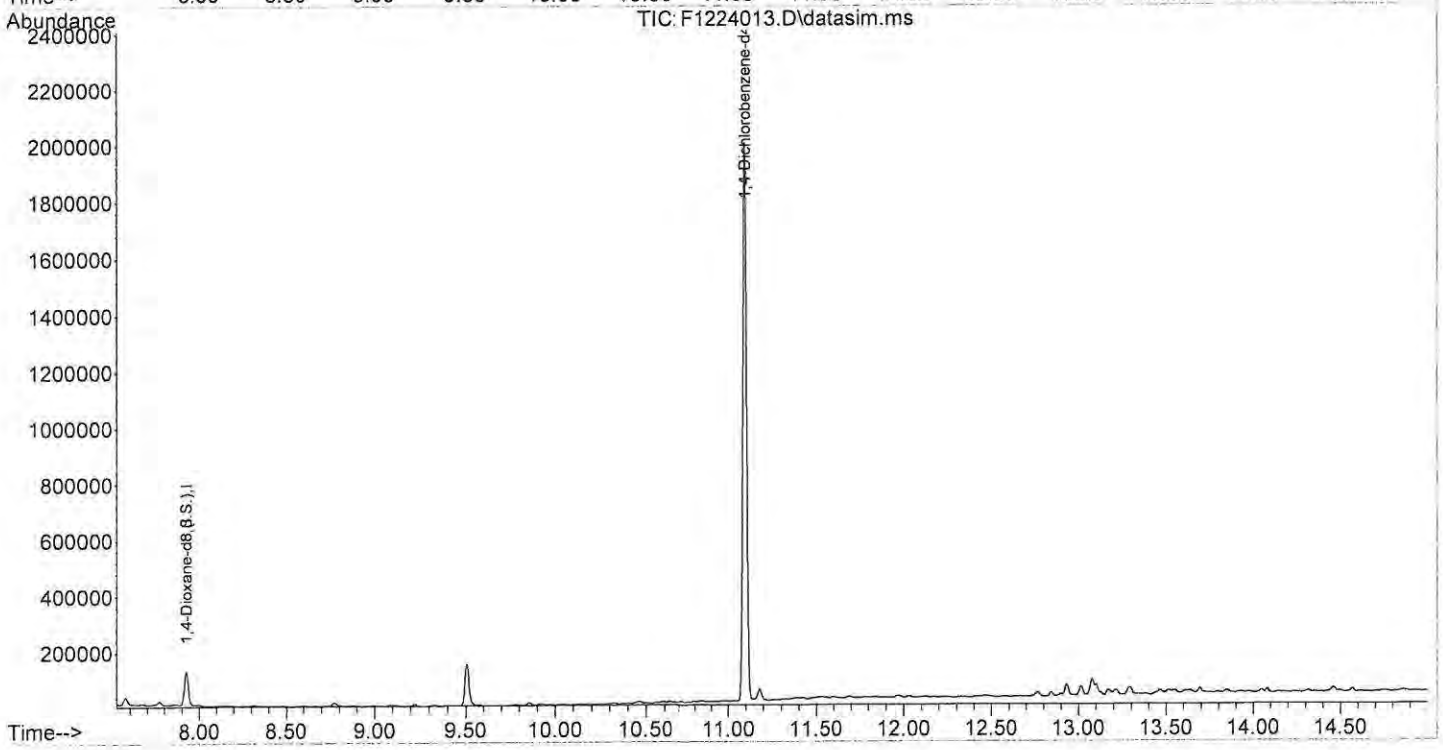
DEC 26 2018

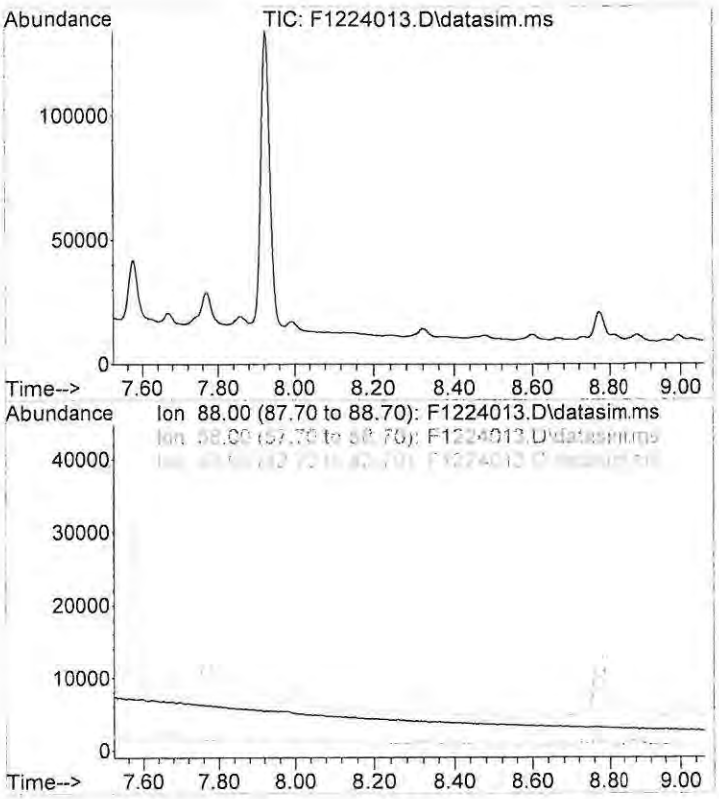
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224013.D
Acq On : 24 Dec 2018 2:35 pm
Operator : CJM
Sample : 18L0603-05 Inst : GCMSSV6
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Dec 26 08:04:42 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration







#4
1,4-Dioxane
Concen: N.D.
Expected RT: 7.96 min

Lab File: F1224013.D
Acq: 24 Dec 2018 2:35 pm

Tgt Ion: 88

Sig	Exp Ratio
88	100
58	76.2
43	36.9

1 - FORM I
ANALYSIS DATA SHEET

DUP

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-08	File ID:	F1224014.D
Sampled:	12/12/18 00:00	Prepared:	12/19/18 11:29	Analyzed:	12/24/18 14:54
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1040 mL / 1 mL				
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	4.0	0.031	0.19	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224014.D
Acq On : 24 Dec 2018 2:54 pm
Operator : CJM
Sample : 18L0603-08 Inst : GCMSSV6
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Dec 26 08:04:44 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	11.095	150	1390938	10.000	ug/mL	0.00
3) 1,4-Dioxane-d8 (I.S.)	7.924	96	102766	10.000	ug/mL	0.01
System Monitoring Compounds						
2) 1,4-Dioxane-d8	7.924	96	102766	2.393	ug/mL	0.00
Target Compounds						Qvalue
4] 1,4-Dioxane	7.971	88	45511	4.160	ug/mL#	92

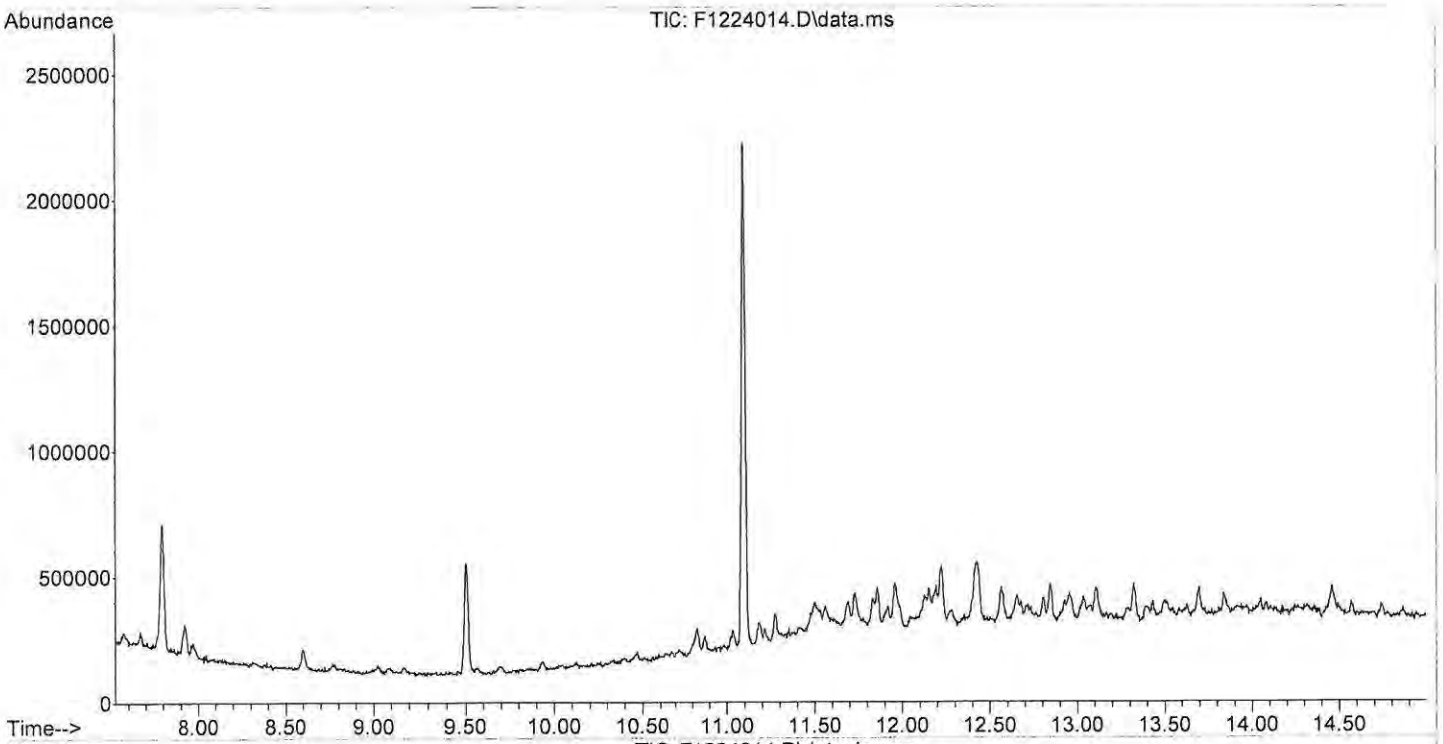
(#) = qualifier out of range (m) = manual integration (+) = signals summed

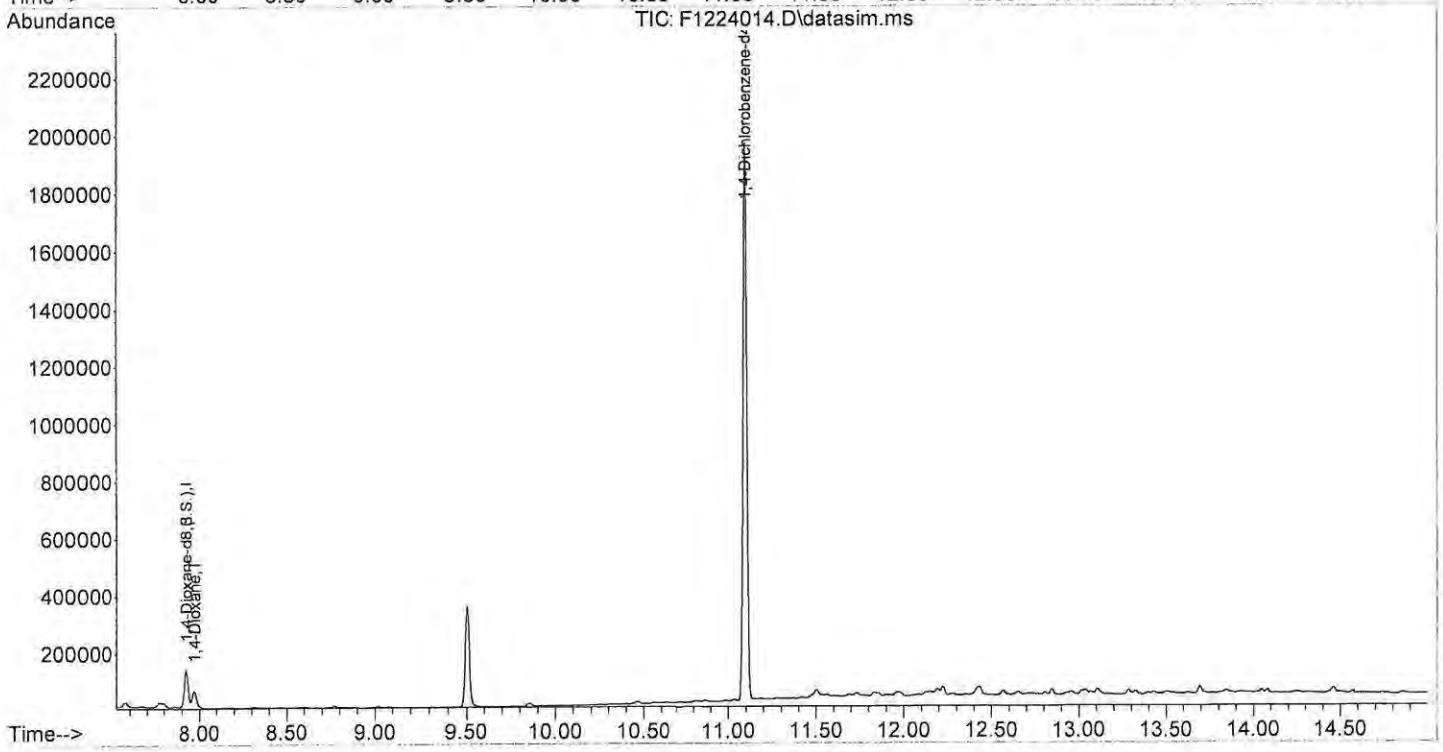
CHECKED BY: Irina R... DEC 26 2018

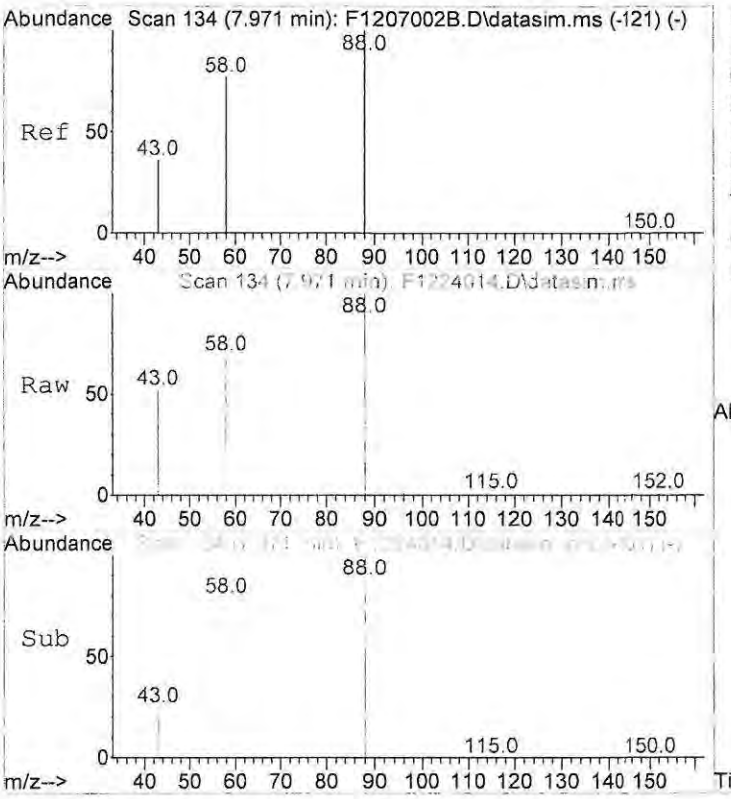
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224014.D
Acq On : 24 Dec 2018 2:54 pm
Operator : CJM
Sample : 18L0603-08 Inst : GCMSSV6
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Dec 26 08:04:44 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration



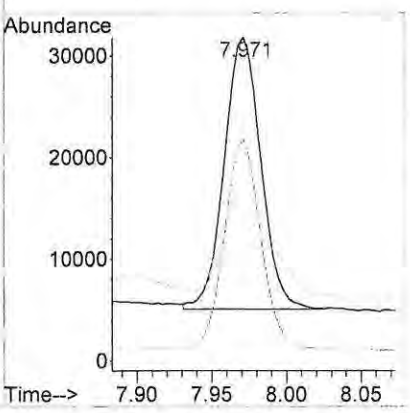




#4
1,4-Dioxane
Concen: 4.16 ug/mL
RT: 7.971 min Scan# 134
Delta R.T. 0.010 min
Lab File: F1224014.D
Acq: 24 Dec 2018 2:54 pm

Tgt Ion: 88 Resp: 45511

Ion	Ratio	Lower	Upper
88	100		
58	77.7	53.3	99.1
43	48.6	25.8	48.0#



QC DATA

2 - FORM II

SYSTEM MONITORING COMPOUND SUMMARY

SW-846 8270D

Laboratory:	Con-Test Analytical Laboratory	SDG:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Matrix:	Water	Instrument:	GCMSSV6

	1,4-Dioxane-d8
18L0603-01	25.7
18L0603-02	22.6
18L0603-03	23.2
18L0603-04	26.9
18L0603-05	22.0
18L0603-08	23.9
B219578-BLK1	30.7
B219578-BS1	26.5
B219578-BSD1	25.1
B219578-MS1	24.1
B219578-MSD1	25.4

3 - FORM III

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

MW-5 121218

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Matrix:	Water	Analysis:	SW-846 8270D
Batch:	B219578	Preparation:	SW-846 3510C
% Solids:		Laboratory ID:	B219578-MS1
Initial/Final:	1030 mL / 1 mL	Sample Lab ID:	18L0603-02
Column:			

ANALYTE	SPIKE ADDED (µg/L)	SAMPLE CONCENTRATION (µg/L)	MS CONCENTRATION (µg/L)	MS % REC.	QC LIMITS REC.
1,4-Dioxane	9.71	3.99	14.8	111	40 - 140

ANALYTE	SPIKE ADDED (µg/L)	MSD CONCENTRATION (µg/L)	MSD % REC. #	% RPD	QC LIMITS RPD	QC LIMITS REC.
1,4-Dioxane	9.80	14.3	106	3.02	20	40 - 140

3 - FORM III

LCS / LCS DUPLICATE RECOVERY

SW-846 8270D

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Matrix:	Water	Preparation:	SW-846 3510C
Batch:	B219578	Laboratory ID:	B219578-BS1
Column:		Initial/Final:	1000 mL / 1 mL

ANALYTE	SPIKE ADDED (µg/L)	LCS CONCENTRATION (µg/L)	LCS % REC.	QC LIMITS REC.
1,4-Dioxane	10.0	10.5	105	40 - 140

ANALYTE	SPIKE ADDED (µg/L)	LCSD CONCENTRATION (µg/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,4-Dioxane	10.0	10.7	107	1.92	30	40 - 140

4 - FORM IV
METHOD BLANK SUMMARY

SW-846 8270D

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Blank ID:	B219578-BLK1 Batch: B219578	Prepared:	12/19/2018 11:29

Client Sample ID	Laboratory Sample ID	Lab File ID	Time Analyzed
LCS	B219578-BS1	F1224004.D	11:39
LCS Dup	B219578-BSD1	F1224005.D	11:59
Matrix Spike	B219578-MS1	F1224007.D	12:38
Matrix Spike Dup	B219578-MSD1	F1224008.D	12:57
MW-15 121218	18L0603-01	F1224009.D	13:17
MW-5 121218	18L0603-02	F1224010.D	13:36
MW-18 121218	18L0603-03	F1224011.D	13:56
MW-12 121218	18L0603-04	F1224012.D	14:15
MW-1 121218	18L0603-05	F1224013.D	14:35
DUP	18L0603-08	F1224014.D	14:54

5 - FORM V
INSTRUMENT PERFORMANCE CHECK

SW-846 8270D

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Lab File ID:	F1224001B.D	Injection Date:	12/24/18
Instrument ID:	GCMSSV6	Injection Time:	10:34
Sequence:	S030678	Lab Sample ID:	S030678-TUN1

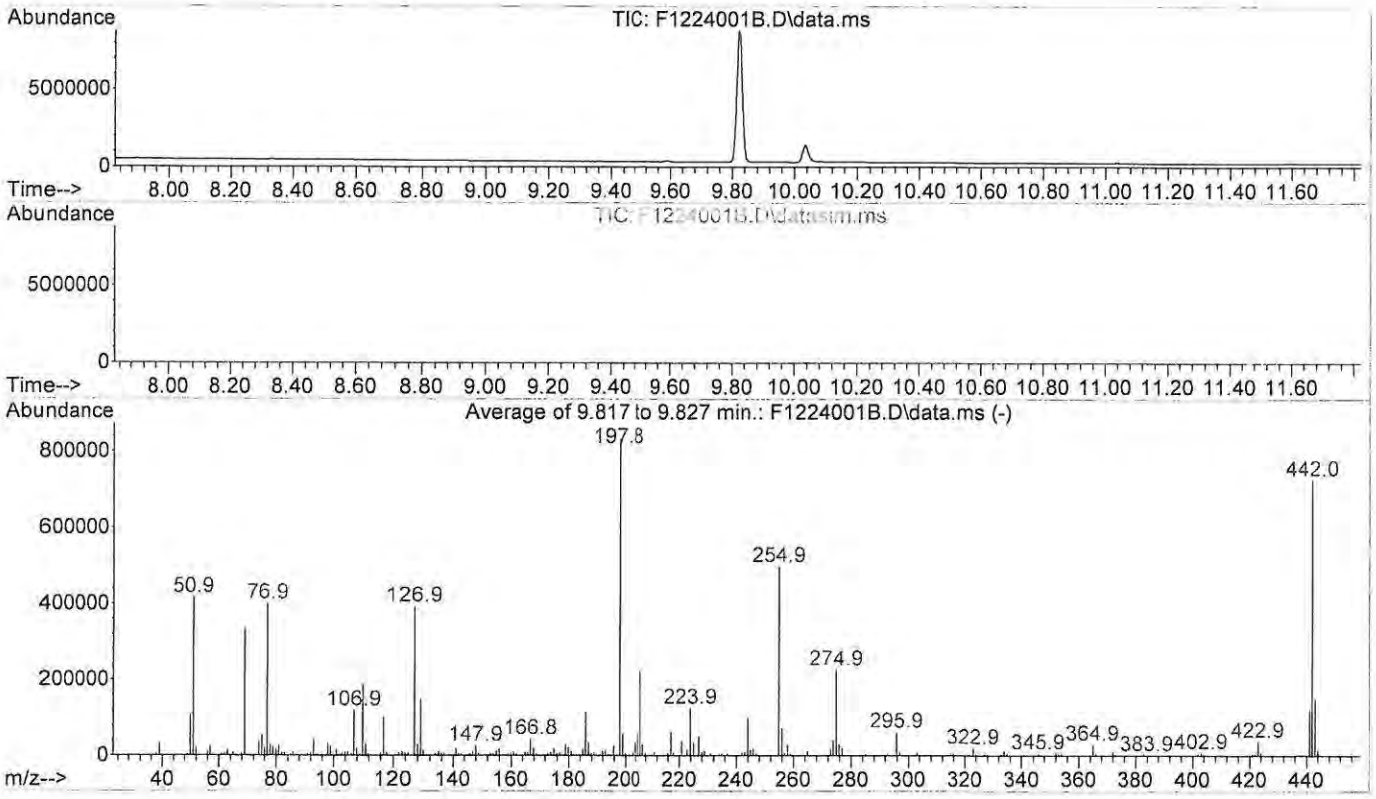
m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	PASS/FAIL
51	10 - 80% of 198	49.9	PASS
68	Less than 2% of 69	1.58	PASS
69	Base peak, 100% relative abundance	100	PASS
70	Less than 2% of 69	0.506	PASS
127	10 - 80% of 198	47.1	PASS
197	Less than 2% of 198	0.327	PASS
198	Base peak, 100% relative abundance	100	PASS
199	5 - 9% of 198	6.57	PASS
275	10 - 60% of 198	27.1	PASS
365	1 - 100% of 198	3.33	PASS
441	Less than 24% of 442	16.7	PASS
442	50 - 100% of 198	87.4	PASS
443	15 - 24% of 442	20.5	PASS

Client ID	Sample ID	File ID	Date Analyzed	Time Analyzed
DIOX 10	S030678-CCV1	F1224003.D	12/24/2018	11:00:00
DIOX 10	S030678-CCV1	F1224002.D	12/24/2018	11:00:00
LCS	B219578-BS1	F1224004.D	12/24/2018	11:39:00
LCS Dup	B219578-BSD1	F1224005.D	12/24/2018	11:59:00
Blank	B219578-BLK1	F1224006.D	12/24/2018	12:18:00
Matrix Spike	B219578-MS1	F1224007.D	12/24/2018	12:38:00
Matrix Spike Dup	B219578-MSD1	F1224008.D	12/24/2018	12:57:00
MW-15 121218	18L0603-01	F1224009.D	12/24/2018	13:17:00
MW-5 121218	18L0603-02	F1224010.D	12/24/2018	13:36:00
MW-18 121218	18L0603-03	F1224011.D	12/24/2018	13:56:00
MW-12 121218	18L0603-04	F1224012.D	12/24/2018	14:15:00
MW-1 121218	18L0603-05	F1224013.D	12/24/2018	14:35:00
DUP	18L0603-08	F1224014.D	12/24/2018	14:54:00

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224001B.D
Acq On : 24 Dec 2018 10:34 am
Operator : CJM
Sample : TUNE 25 ng
Misc : 1810455 EXP 030119
ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: rteint.p
Integration File signal 2: rteint2.p

Method : C:\msdchem\1\methods\8270D.M
Title : PAHs GCMSSV5
Last Update : Sat May 12 12:37:13 2012



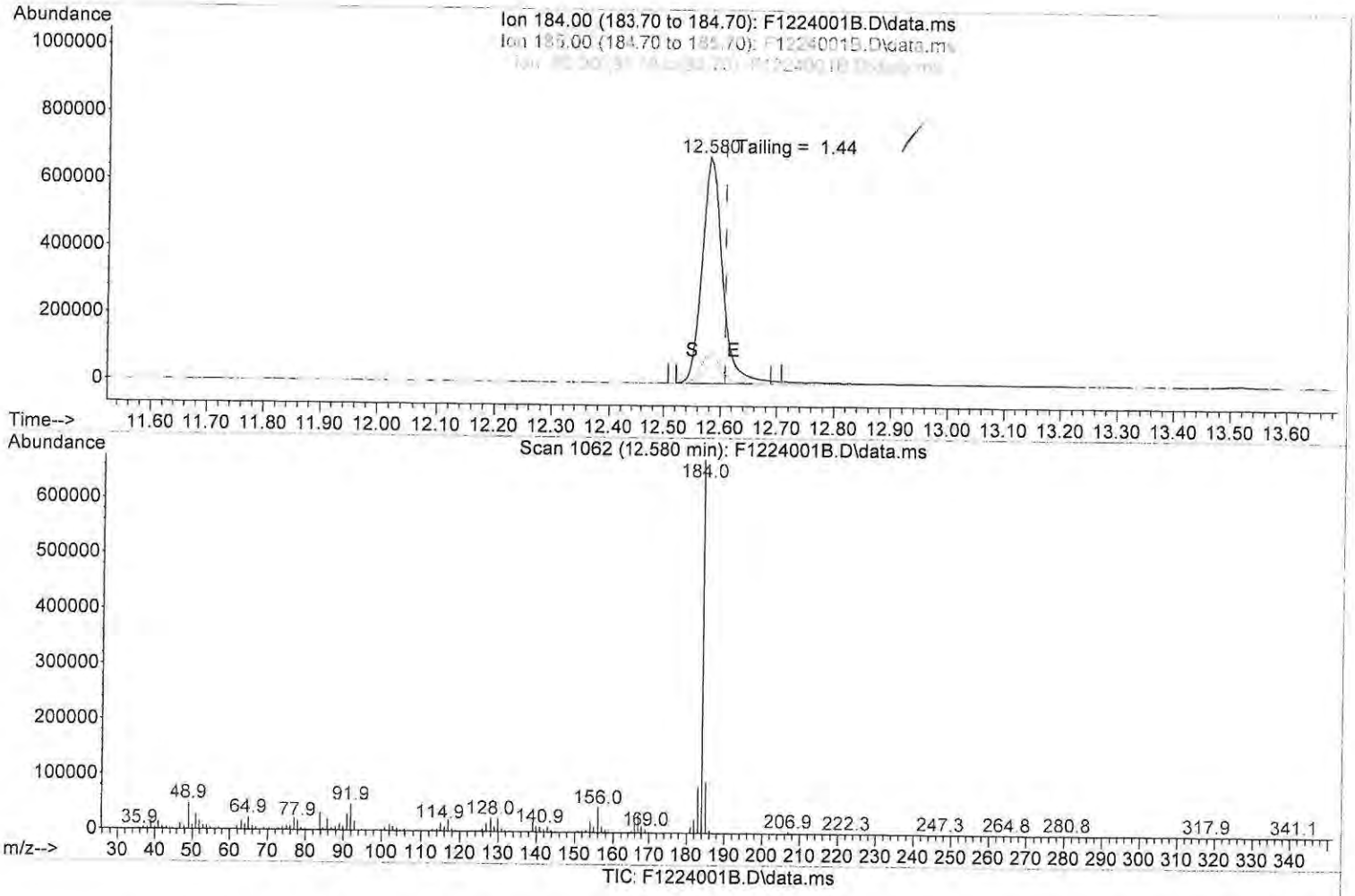
AutoFind: Scans 482, 483, 484; Background Corrected with Scan 474

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	49.9	414627	PASS
68	69	0.00	2	1.6	5263	PASS
69	69	100	100	100.0	333226	PASS
70	69	0.00	2	0.5	1687	PASS
127	198	10	80	47.1	390953	PASS
197	198	0.00	2	0.3	2714	PASS
198	198	100	100	100.0	830272	PASS
199	198	5	9	6.6	54531	PASS
275	198	10	60	27.1	224768	PASS
365	198	1	100	3.3	27667	PASS
441	442	0.01	24	16.7	121061	PASS
442	198	50	100	87.4	725739	PASS
443	442	15	24	20.5	149024	PASS

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224001B.D
Acq On : 24 Dec 2018 10:34 am
Operator : CJM
Sample : TUNE 25 ng Inst : GCMSSV6
Misc : 1810455 EXP 030119
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Dec 26 08:01:02 2018
DataAcq Meth:DT122215.M
Quant Method : C:\msdchem\1\methods\8270D.M
Quant Title : PAHs GCMSSV5
QLast Update : Sat May 12 12:37:13 2012
Response via : Initial Calibration



(3) Benzidine

12.580min (-0.029) 0.000 ng/uL

response 1680328

Ion	Exp%	Act%
184.00	100.00	100.00
185.00	13.20	13.61
92.00	7.40	7.20
0.00	0.00	0.00

CALIBRATION DATA

6 - FORM VI
INITIAL CALIBRATION DATA SHEET

SW-846 8270D

Client: AECOM Environment - Latham, NY SDG: 18L0603

Project: 60284002 - Utica, NY

Calibration: 1800329 Instrument: GCMSSV6

Calibration Date: 10/9/2018 8:41:59AM

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
1,4-Dioxane	0.2	1.199494	1	1.074226	2.5	1.13054	5	1.074934	10	0.9959672	25	1.059841
1,4-Dioxane-d8	0.2	0.2991644	1	0.3010858	2.5	0.361395	5	0.301808	10	0.3004731	25	0.3282197

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW-846 8270D

Client: AECOM Environment - Latham, NY SDG: 18L0603

Project: 60284002 - Utica, NY

Calibration: 1800329 Instrument: GCMSSV6

Calibration Date: 10/9/2018 8:41:59AM

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
1,4-Dioxane	50	0.9950338	100	0.9856973								
1,4-Dioxane-d8	50	0.2891555	100	0.2890875								

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SW-846 8270D

Laboratory: Con-Test Analytical Laboratory Work Order: 18L0603

Client: AECOM Environment - Latham, NY Project: 60284002 - Utica, NY

Calibration: 1800329 Instrument: GCMSSV6

Calibration Date: 10/9/2018 8:41:59AM

COMPOUND	Mean RF	RF RSD	Linear r^2	Quad COD	LIMIT	Q
1,4-Dioxane	1.064467	7.0			20	
1,4-Dioxane-d8	0.3087986	7.9			20	

CONTINUING CALIBRATION VERIFICATION

SW-846 8270D

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Instrument ID:	GCMSSV6	Calibration:	1800329
Lab File ID:	F1224002.D	Calibration Date:	10/09/18 08:41
Sequence:	S030678	Injection Date:	12/24/18
Lab Sample ID:	S030678-CCV1	Injection Time:	11:00

		CONC. (µg/mL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,4-Dioxane	A	10.0	8.74	1.064467	0.9298806		-12.6	
1,4-Dioxane-d8	A	10.0	8.75	0.3087986	0.2700817		-12.5	

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224002.D
Acq On : 24 Dec 2018 11:00 am
Operator : CJM
Sample : DIOX 10 ug/mL Inst : GCMSSV6
Misc : 1810164 EXP 040819
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:02:13 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Wed Dec 26 08:02:05 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev Area	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	0# -11.10#
2 S	1,4-Dioxane-d8	0.309	0.000	100.0#	0# -7.93#
3 I	1,4-Dioxane-d8 (I.S.)	1.000	1.000	0.0	150 0.00
4 T	1,4-Dioxane	1.064	0.930	12.6	140 0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224002.D
Acq On : 24 Dec 2018 11:00 am
Operator : CJM
Sample : DIOX 10 ug/mL Inst : GCMSSV6
Misc : 1810164 EXP 040819
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:02:13 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Wed Dec 26 08:02:05 2018
Response via : Initial Calibration

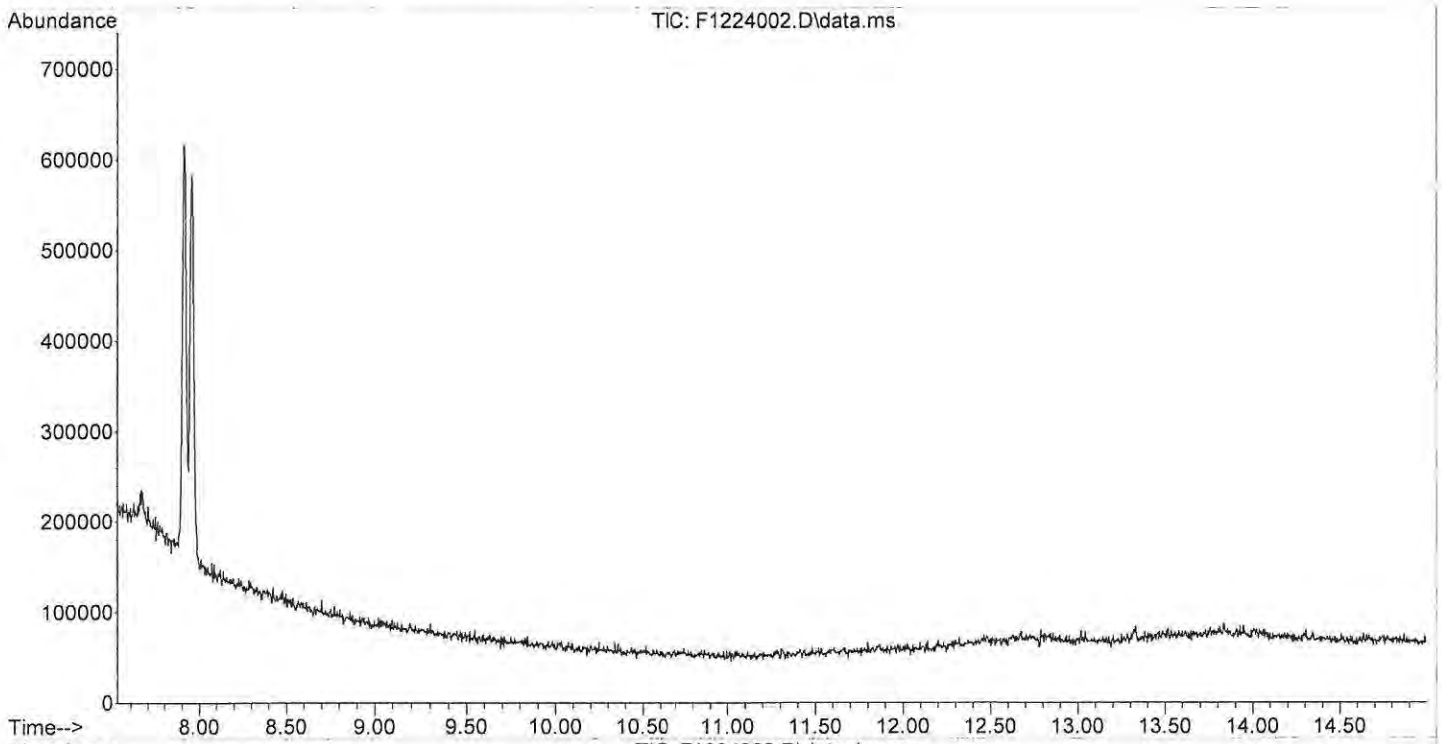
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	0.000	150	0m	10.000	ug/mL	-11.10
3) 1,4-Dioxane-d8 (I.S.)	7.914	96	422722	10.000	ug/mL	0.00
System Monitoring Compounds						
2) 1,4-Dioxane-d8	0.000	96	0d	0.000	ug/mL	
Target Compounds						Qvalue
4] 1,4-Dioxane	7.961	88	393081	8.736	ug/mL	98

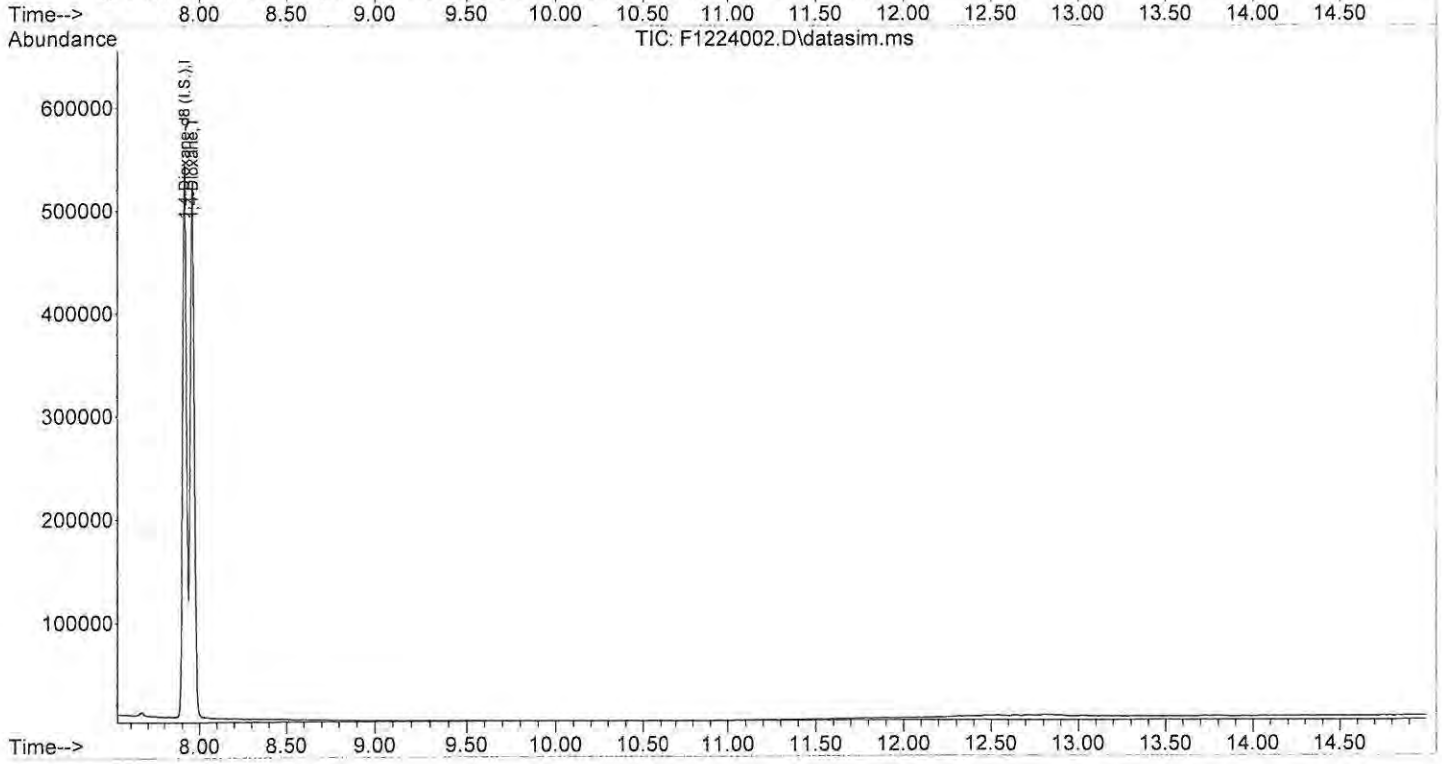
(#) = qualifier out of range (m) = manual integration (+) = signals summed

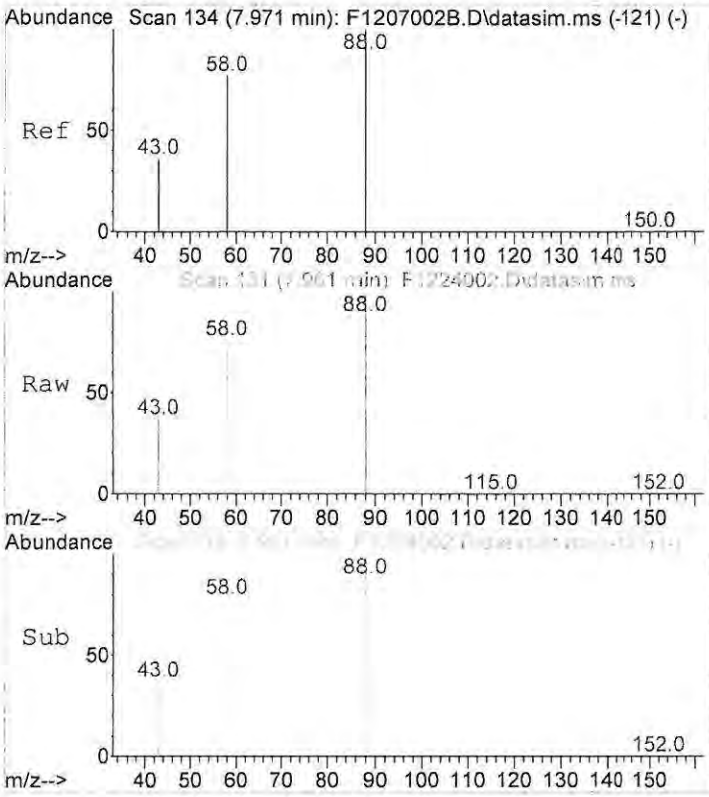
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224002.D
Acq On : 24 Dec 2018 11:00 am
Operator : CJM
Sample : DIOX 10 ug/mL Inst : GCMSSV6
Misc : 1810164 EXP 040819
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Dec 26 08:02:13 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Wed Dec 26 08:02:05 2018
Response via : Initial Calibration



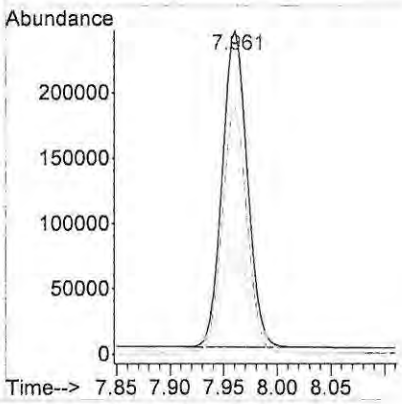




#4
1,4-Dioxane
Concen: 8.74 ug/mL
RT: 7.961 min Scan# 131
Delta R.T. 0.000 min
Lab File: F1224002.D
Acq: 24 Dec 2018 11:00 am

Tgt Ion: 88 Resp: 393081

Ion	Ratio	Lower	Upper
88	100		
58	77.9	53.3	99.1
43	37.5	25.8	48.0



Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224003.D
Acq On : 24 Dec 2018 11:19 am
Operator : CJM
Sample : DIOX-D8 10 ug/mL Inst : GCMSSV6
Misc : 1810165 EXP 040819
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:03:18 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Wed Dec 26 08:03:01 2018
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	155	0.00
2	S	1,4-Dioxane-d8	0.309	0.270	12.6	140	0.00
3	I	1,4-Dioxane-d8 (I.S.)	1.000	1.000	0.0	0#	-7.91#
4	T	1,4-Dioxane	1.064	0.000	100.0#	0#	-7.96#

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224003.D
Acq On : 24 Dec 2018 11:19 am
Operator : CJM
Sample : DIOX-D8 10 ug/mL Inst : GCMSSV6
Misc : 1810165 EXP 040819
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:03:18 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Wed Dec 26 08:03:01 2018
Response via : Initial Calibration

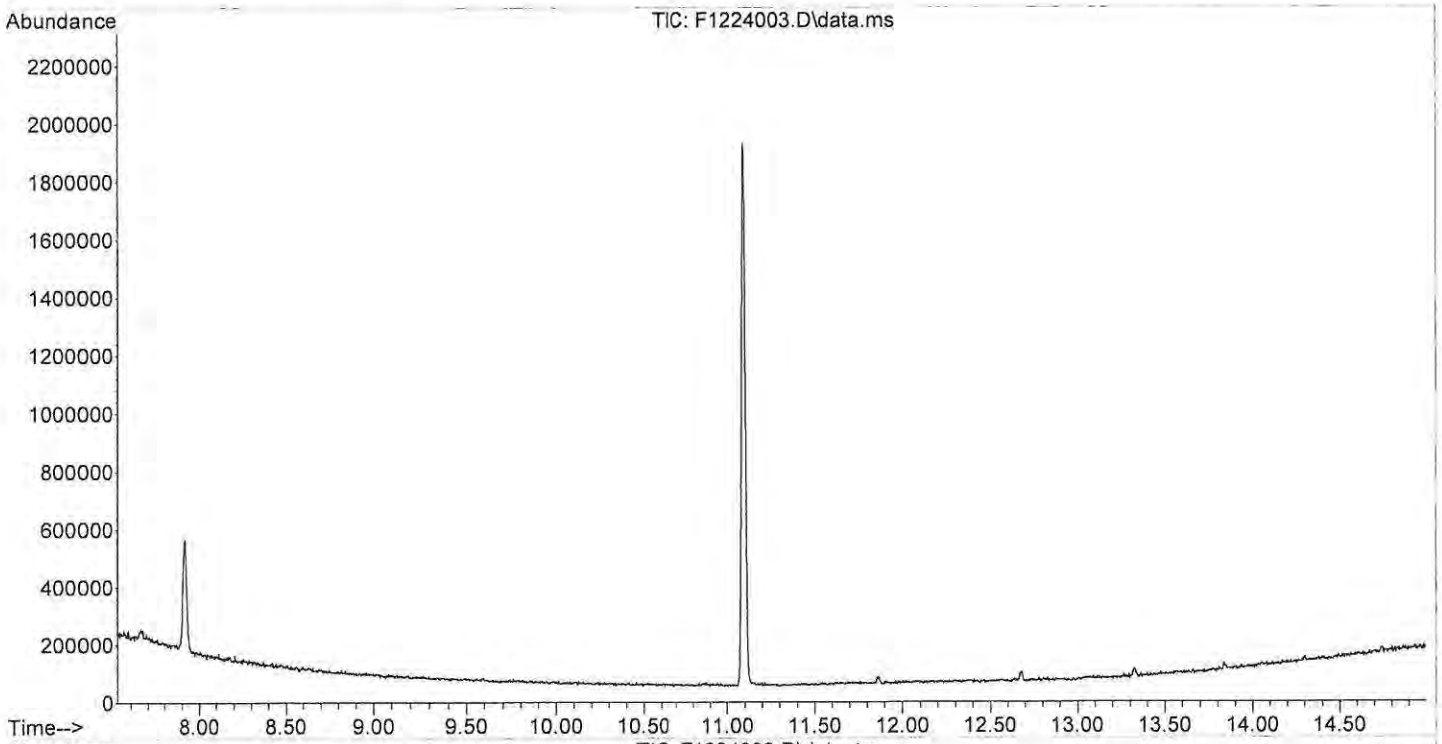
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	11.095	150	1370889	10.000	ug/mL	0.00
3) 1,4-Dioxane-d8 (I.S.)	0.000	96	0m	10.000	ug/mL	-7.91
System Monitoring Compounds						
2) 1,4-Dioxane-d8	7.917	96	370252	8.746	ug/mL	0.00
Target Compounds						Qvalue
4) 1,4-Dioxane	0.000		0	N.D.	d	

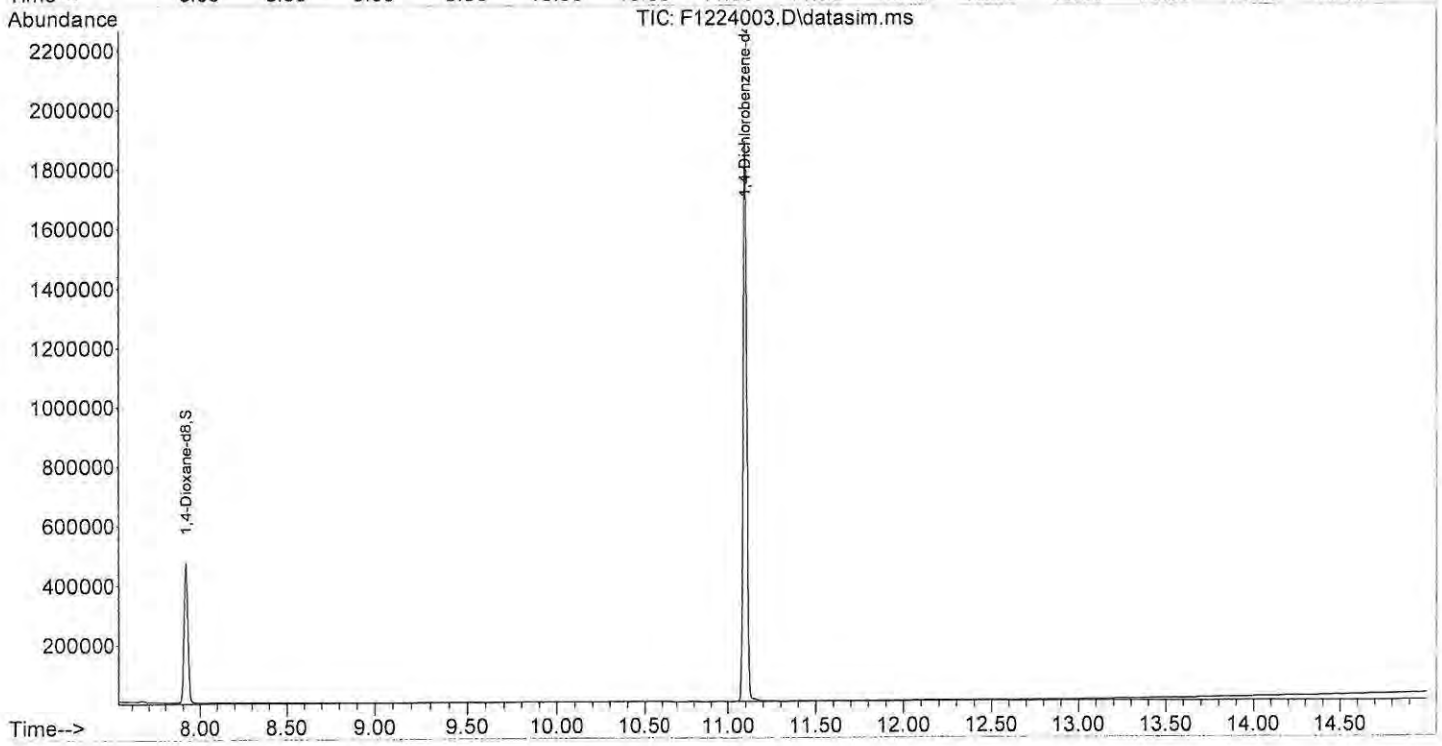
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224003.D
Acq On : 24 Dec 2018 11:19 am
Operator : CJM
Sample : DIOX-D8 10 ug/mL Inst : GCMSSV6
Misc : 1810165 EXP 040819
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 26 08:03:18 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Wed Dec 26 08:03:01 2018
Response via : Initial Calibration





8 - FORM VIII
INTERNAL STANDARD AREA AND RT SUMMARY

SW-846 8270D

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Sequence:	S030678	Instrument:	GCMSSV6
		Calibration:	1800329

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S030678-CCV1)			*Lab File ID: F1224003.D*			*Analyzed: 12/24/18 11:00*			
1,4-Dichlorobenzene-d4	1370889	11.095	881643	11.112	155	50 - 200	-0.0170	+/-0.50	
LCS (B219578-BS1)			*Lab File ID: F1224004.D*			*Analyzed: 12/24/18 11:39*			
1,4-Dichlorobenzene-d4	1322190	11.095	1370889	11.095	96	50 - 200	0.0000	+/-0.50	
LCS Dup (B219578-BSD1)			*Lab File ID: F1224005.D*			*Analyzed: 12/24/18 11:59*			
1,4-Dichlorobenzene-d4	1363468	11.099	1370889	11.095	99	50 - 200	0.0040	+/-0.50	
Blank (B219578-BLK1)			*Lab File ID: F1224006.D*			*Analyzed: 12/24/18 12:18*			
1,4-Dichlorobenzene-d4	1141800	11.095	1370889	11.095	83	50 - 200	0.0000	+/-0.50	
Matrix Spike (B219578-MS1)			*Lab File ID: F1224007.D*			*Analyzed: 12/24/18 12:38*			
1,4-Dichlorobenzene-d4	1238812	11.095	1370889	11.095	90	50 - 200	0.0000	+/-0.50	
Matrix Spike Dup (B219578-MSD1)			*Lab File ID: F1224008.D*			*Analyzed: 12/24/18 12:57*			
1,4-Dichlorobenzene-d4	1283565	11.095	1370889	11.095	94	50 - 200	0.0000	+/-0.50	
MW-15 121218 (18L0603-01)			*Lab File ID: F1224009.D*			*Analyzed: 12/24/18 13:17*			
1,4-Dichlorobenzene-d4	1293213	11.095	1370889	11.095	94	50 - 200	0.0000	+/-0.50	
MW-5 121218 (18L0603-02)			*Lab File ID: F1224010.D*			*Analyzed: 12/24/18 13:36*			
1,4-Dichlorobenzene-d4	1376197	11.095	1370889	11.095	100	50 - 200	0.0000	+/-0.50	
MW-18 121218 (18L0603-03)			*Lab File ID: F1224011.D*			*Analyzed: 12/24/18 13:56*			
1,4-Dichlorobenzene-d4	1353646	11.095	1370889	11.095	99	50 - 200	0.0000	+/-0.50	
MW-12 121218 (18L0603-04)			*Lab File ID: F1224012.D*			*Analyzed: 12/24/18 14:15*			
1,4-Dichlorobenzene-d4	1372733	11.095	1370889	11.095	100	50 - 200	0.0000	+/-0.50	
MW-1 121218 (18L0603-05)			*Lab File ID: F1224013.D*			*Analyzed: 12/24/18 14:35*			
1,4-Dichlorobenzene-d4	1419040	11.095	1370889	11.095	104	50 - 200	0.0000	+/-0.50	
DUP (18L0603-08)			*Lab File ID: F1224014.D*			*Analyzed: 12/24/18 14:54*			
1,4-Dichlorobenzene-d4	1390938	11.095	1370889	11.095	101	50 - 200	0.0000	+/-0.50	

QC DATA

1 - FORM I
ANALYSIS DATA SHEET

Blank

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY		Project:	60284002 - Utica, NY	
Matrix:	Water	Laboratory ID:	B219578-BLK1	File ID:	F1224006.D
Sampled:		Prepared:	12/19/18 11:29	Analyzed:	12/24/18 12:18
Solids:		Preparation:	SW-846 3510C	Dilution:	
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				
Column:	1				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.033	0.20	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224006.D
Acq On : 24 Dec 2018 12:18 pm
Operator : CJM
Sample : B219578-BLK1 Inst : GCMSSV6
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 26 08:04:28 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration

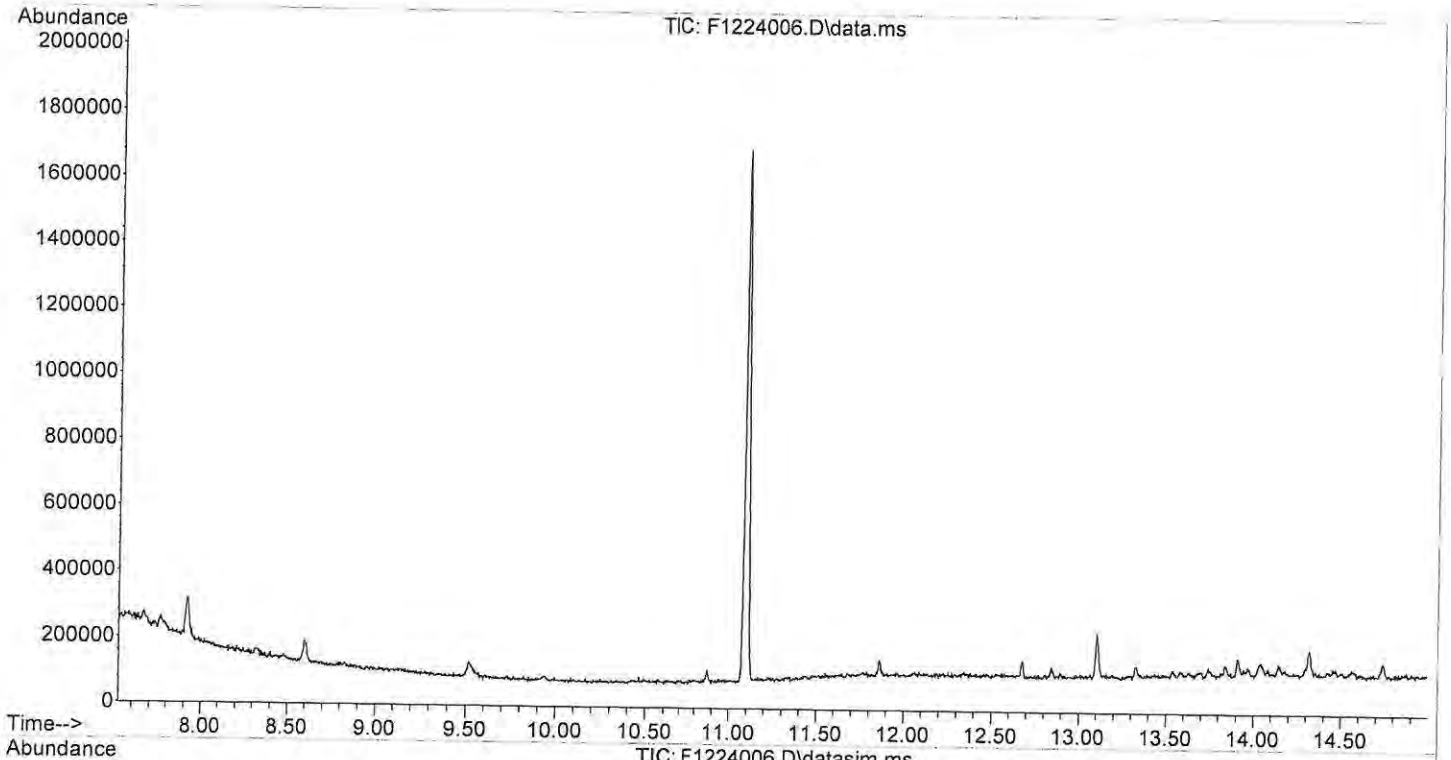
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	11.095	150	1141800	10.000	ug/mL	0.00
3) 1,4-Dioxane-d8 (I.S.)	7.921	96	108171	10.000	ug/mL	0.00
System Monitoring Compounds						
2) 1,4-Dioxane-d8	7.921	96	108171	3.068	ug/mL	0.00
Target Compounds						Qvalue
4) 1,4-Dioxane	0.000		0	N.D.		

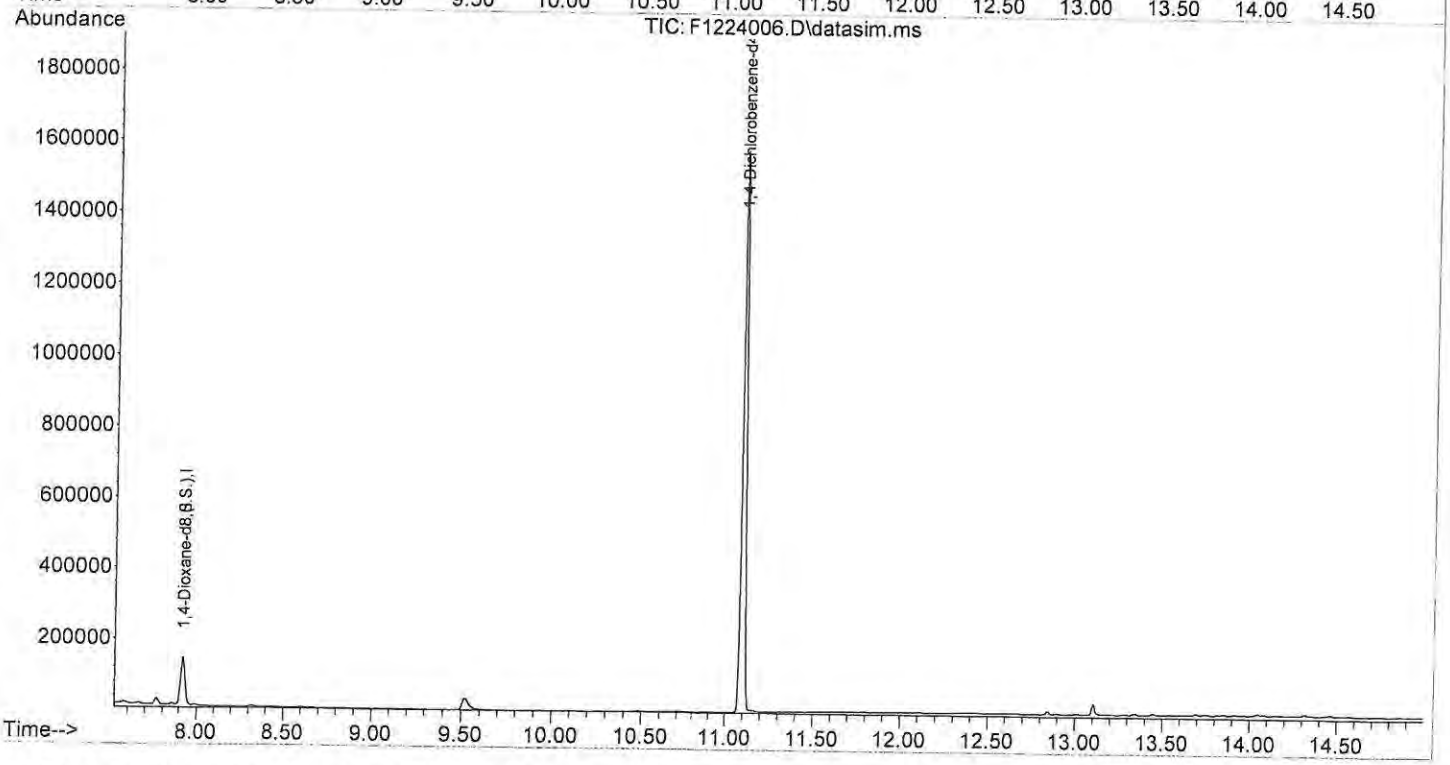
(#) = qualifier out of range (m) = manual integration (+) = signals summed

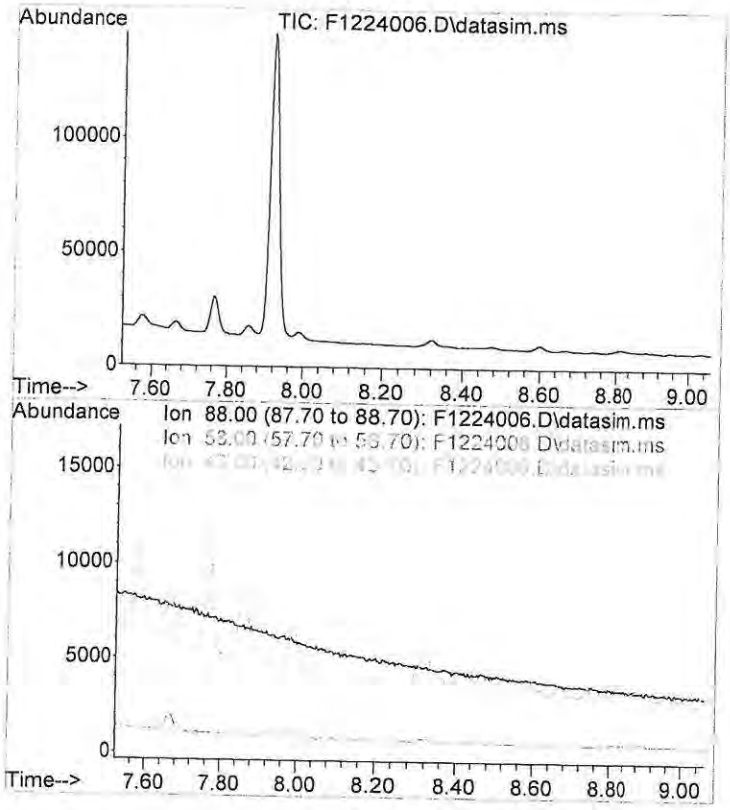
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224006.D
Acq On : 24 Dec 2018 12:18 pm
Operator : CJM
Sample : B219578-BLK1 Inst : GCMSSV6
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 26 08:04:28 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration







#4
1,4-Dioxane
Concen: N.D.
Expected RT: 7.96 min

Lab File: F1224006.D
Acq: 24 Dec 2018 12:18 pm

Tgt Ion: 88

Sig	Exp Ratio
88	100
58	76.2
43	36.9

1 - FORM I
ANALYSIS DATA SHEET

LCS

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY		Project:	60284002 - Utica, NY	
Matrix:	Water	Laboratory ID:	B219578-BS1	File ID:	F1224004.D
Sampled:		Prepared:	12/19/18 11:29	Analyzed:	12/24/18 11:39
Solids:		Preparation:	SW-846 3510C	Dilution:	
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				
Column:	1				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	10.5	0.033	0.20	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224004.D
Acq On : 24 Dec 2018 11:39 am
Operator : CJM
Sample : B219578-BS1 Inst : GCMSSV6
Misc : I.S.1808060 EXP 020219
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 26 08:04:24 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration

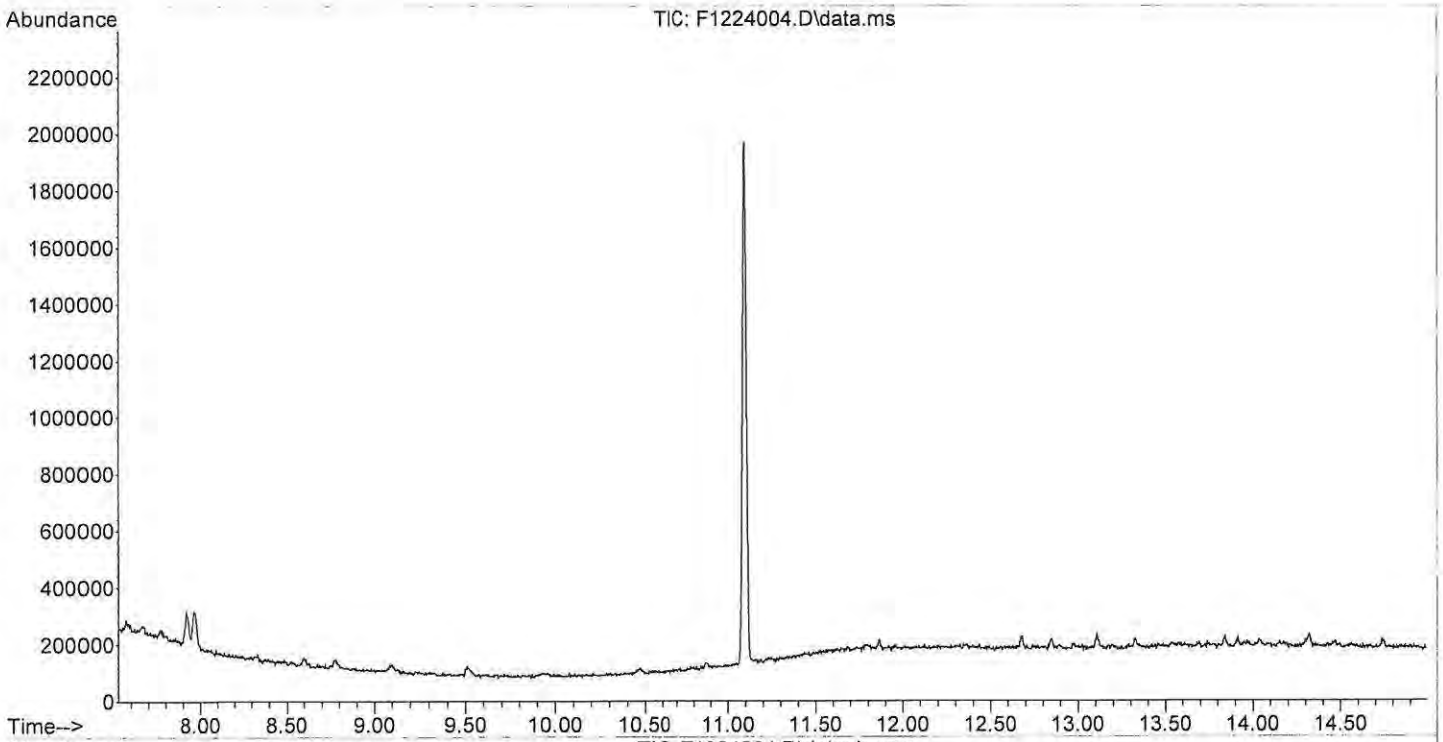
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	11.095	150	1322190	10.000	ug/mL	0.00
3) 1,4-Dioxane-d8 (I.S.)	7.924	96	108161	10.000	ug/mL	0.01
System Monitoring Compounds						
2) 1,4-Dioxane-d8	7.924	96	108161	2.649	ug/mL	0.00
Target Compounds						Qvalue
4] 1,4-Dioxane	7.968	88	120873	10.498	ug/mL	97

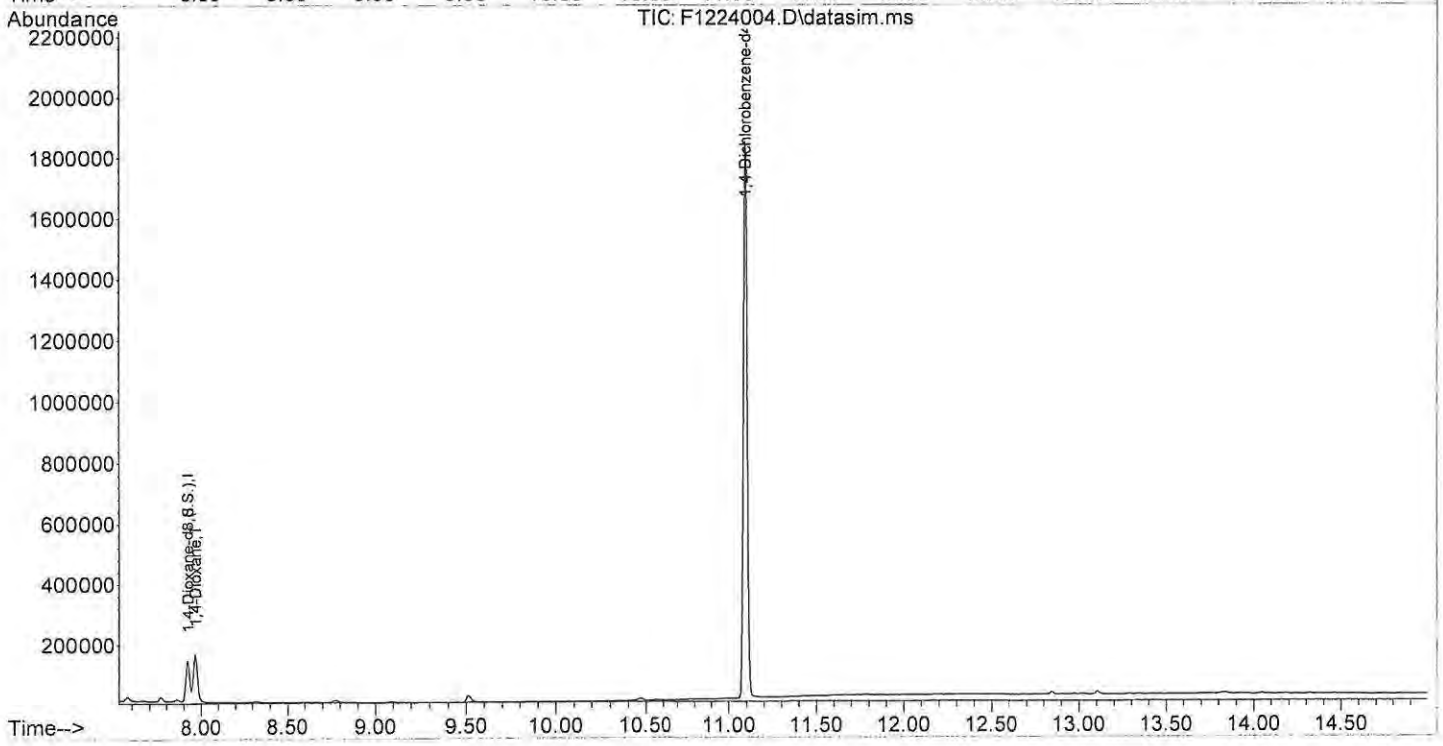
(#) = qualifier out of range (m) = manual integration (+) = signals summed

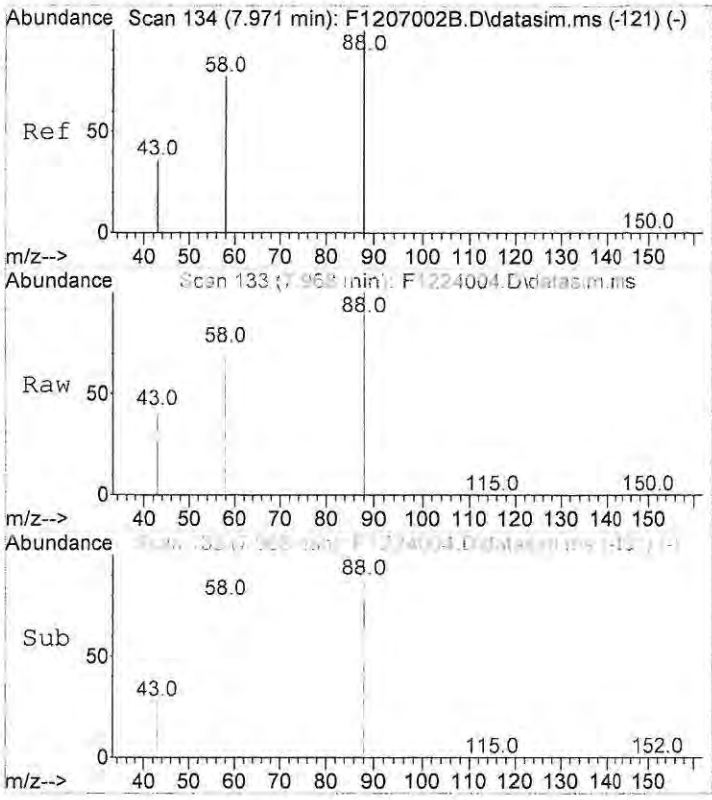
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224004.D
Acq On : 24 Dec 2018 11:39 am
Operator : CJM
Sample : B219578-BS1 Inst : GCMSSV6
Misc : I.S.1808060 EXP 020219
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 26 08:04:24 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration



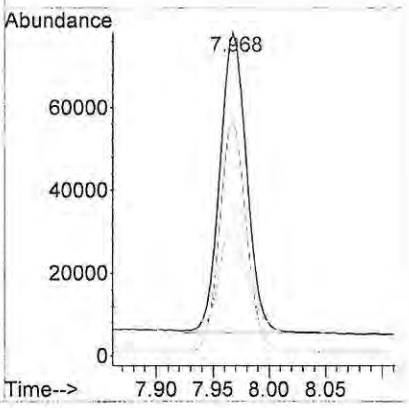




#4
1,4-Dioxane
Concen: 10.50 ug/mL
RT: 7.968 min Scan# 133
Delta R.T. 0.007 min
Lab File: F1224004.D
Acq: 24 Dec 2018 11:39 am

Tgt Ion: 88 Resp: 120873

Ion	Ratio	Lower	Upper
88	100		
58	77.0	53.3	99.1
43	40.5	25.8	48.0



1 - FORM I
ANALYSIS DATA SHEET

LCS Dup

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY		Project:	60284002 - Utica, NY	
Matrix:	Water	Laboratory ID:	B219578-BSD1	File ID:	F1224005.D
Sampled:		Prepared:	12/19/18 11:29	Analyzed:	12/24/18 11:59
Solids:		Preparation:	SW-846 3510C	Dilution:	
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				
Column:	1				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	10.7	0.033	0.20	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224005.D
Acq On : 24 Dec 2018 11:59 am
Operator : CJM
Sample : B219578-BSD1 Inst : GCMSSV6
Misc : I.S.1810098 EXP 040819
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 26 08:04:26 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration

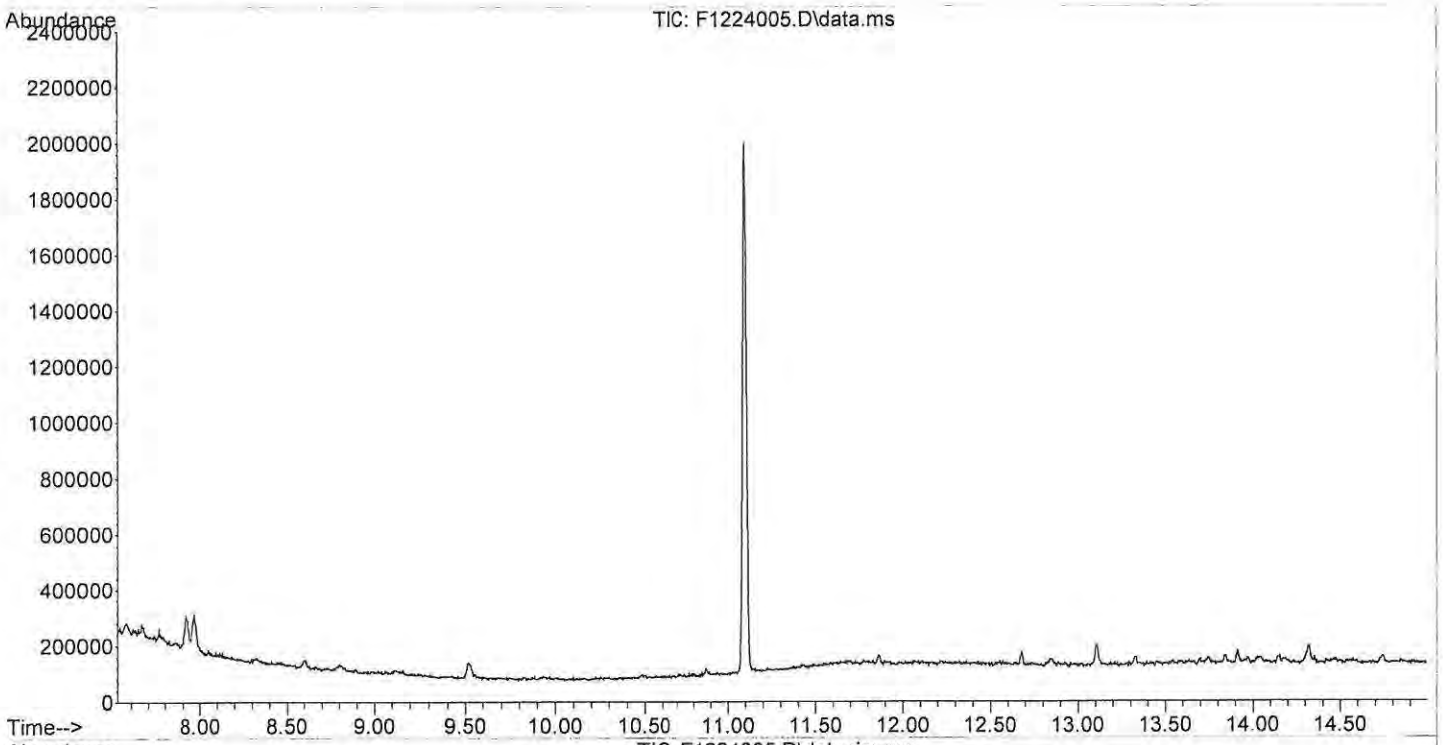
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	11.099	150	1363468	10.000	ug/mL	0.00
3) 1,4-Dioxane-d8 (I.S.)	7.924	96	105692	10.000	ug/mL	0.01
System Monitoring Compounds						
2) 1,4-Dioxane-d8	7.924	96	105714	2.511	ug/mL	0.00
Target Compounds						Qvalue
4] 1,4-Dioxane	7.968	88	120390	10.701	ug/mL	97

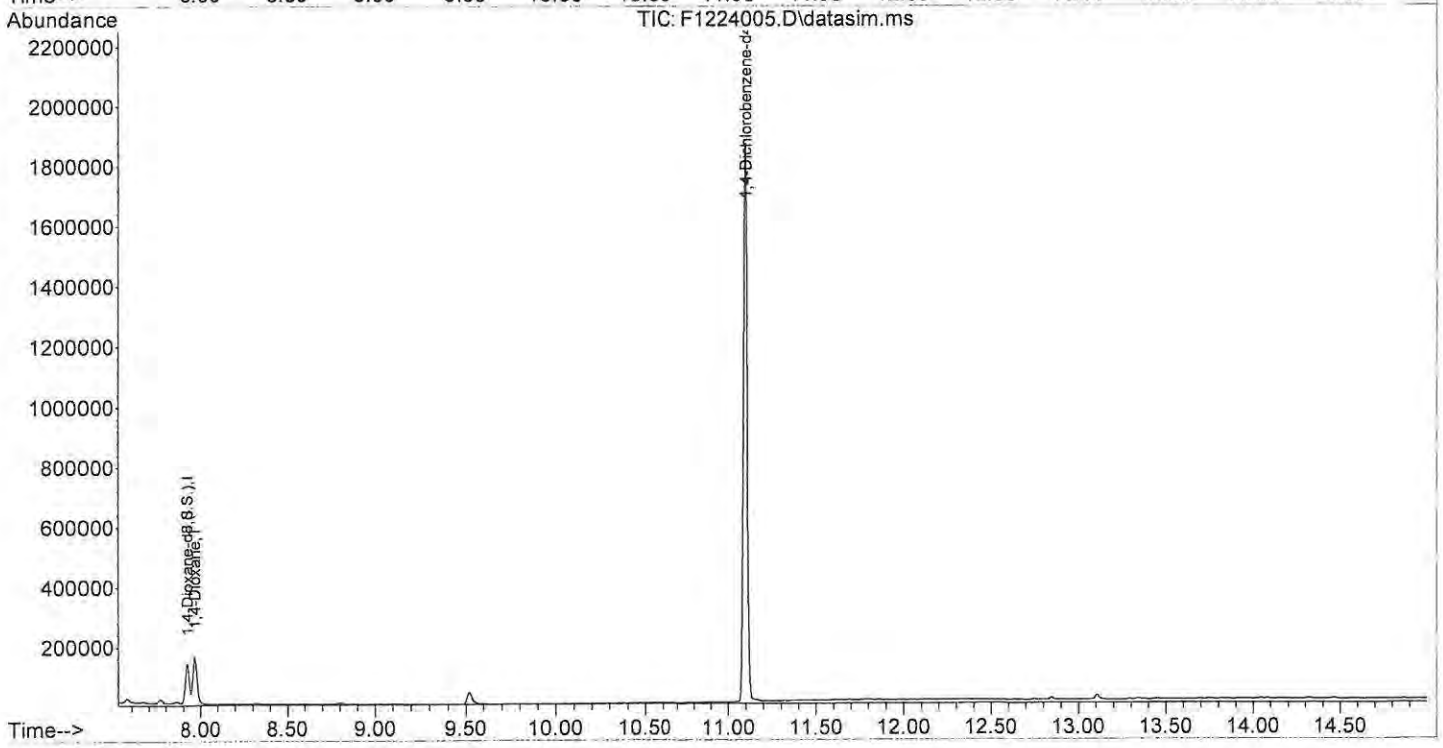
(#) = qualifier out of range (m) = manual integration (+) = signals summed

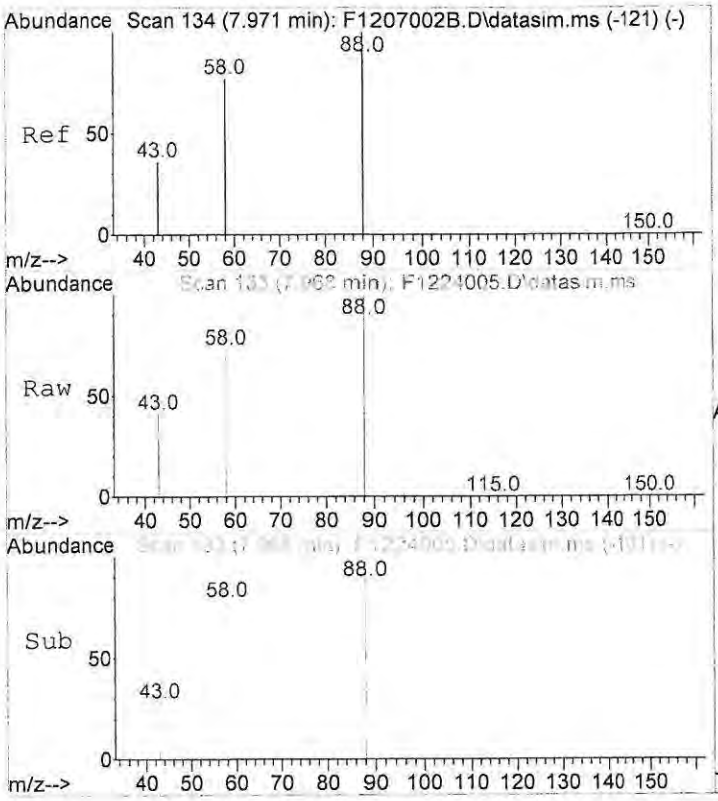
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224005.D
Acq On : 24 Dec 2018 11:59 am
Operator : CJM
Sample : B219578-BSD1 Inst : GCMSSV6
Misc : I.S.1810098 EXP 040819
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 26 08:04:26 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration



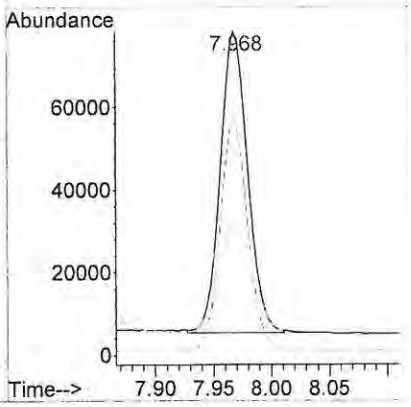




#4
1,4-Dioxane
Concen: 10.70 ug/mL
RT: 7.968 min Scan# 133
Delta R.T. 0.007 min
Lab File: F1224005.D
Acq: 24 Dec 2018 11:59 am

Tgt Ion: 88 Resp: 120390

Ion	Ratio	Lower	Upper
88	100		
58	77.4	53.3	99.1
43	40.6	25.8	48.0



1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY		Project:	60284002 - Utica, NY	
Matrix:	Water	Laboratory ID:	B219578-MS1	File ID:	F1224007.D
Sampled:		Prepared:	12/19/18 11:29	Analyzed:	12/24/18 12:38
Solids:		Preparation:	SW-846 3510C	Dilution:	
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				
Column:	1				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	14.8	0.032	0.19	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224007.D
Acq On : 24 Dec 2018 12:38 pm
Operator : CJM
Sample : B219578-MS1 Inst : GCMSSV6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 26 08:04:30 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration

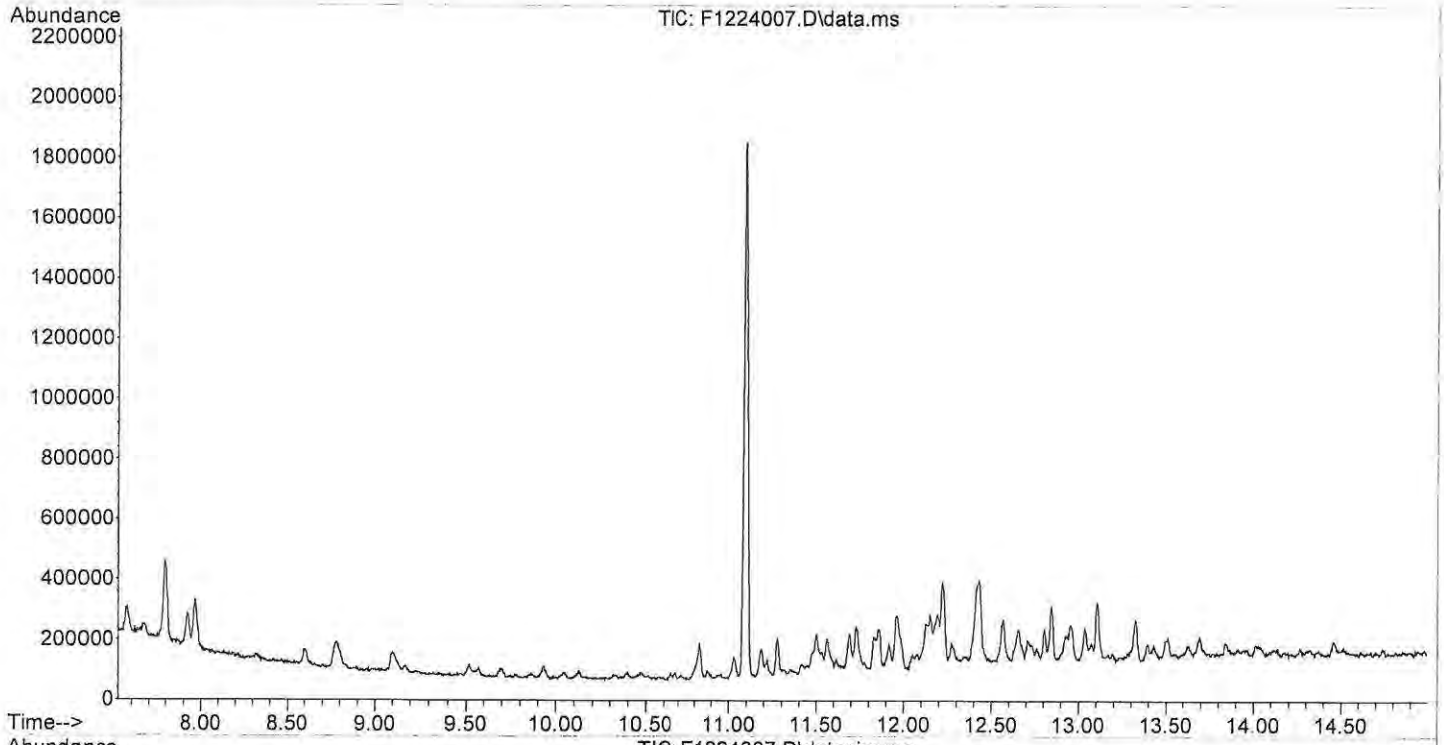
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	11.095	150	1238812	10.000	ug/mL	0.00
3) 1,4-Dioxane-d8 (I.S.)	7.924	96	92070	10.000	ug/mL	0.01
System Monitoring Compounds						
2) 1,4-Dioxane-d8	7.924	96	92086	2.407	ug/mL	0.00
Target Compounds						Qvalue
4] 1,4-Dioxane	7.968	88	149268	15.231	ug/mL	98

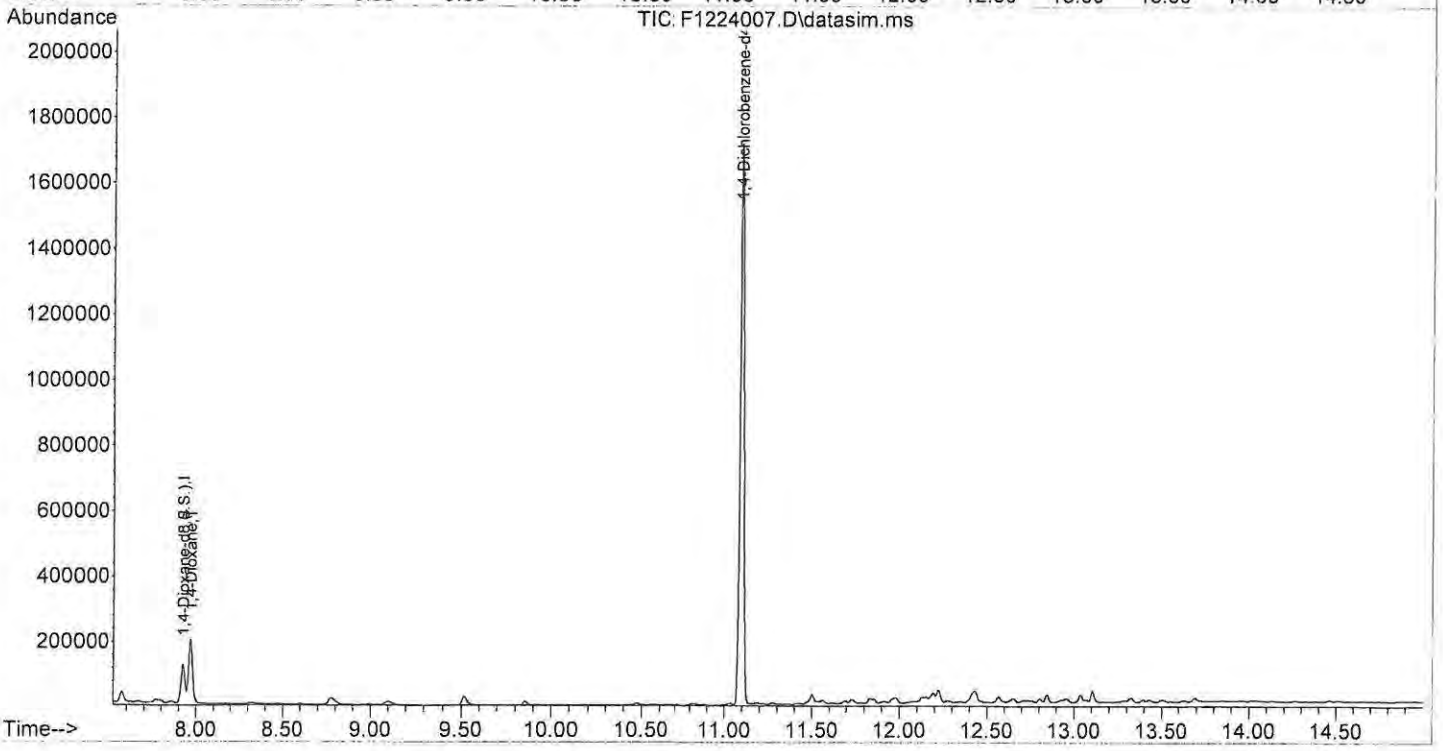
(#) = qualifier out of range (m) = manual integration (+) = signals summed

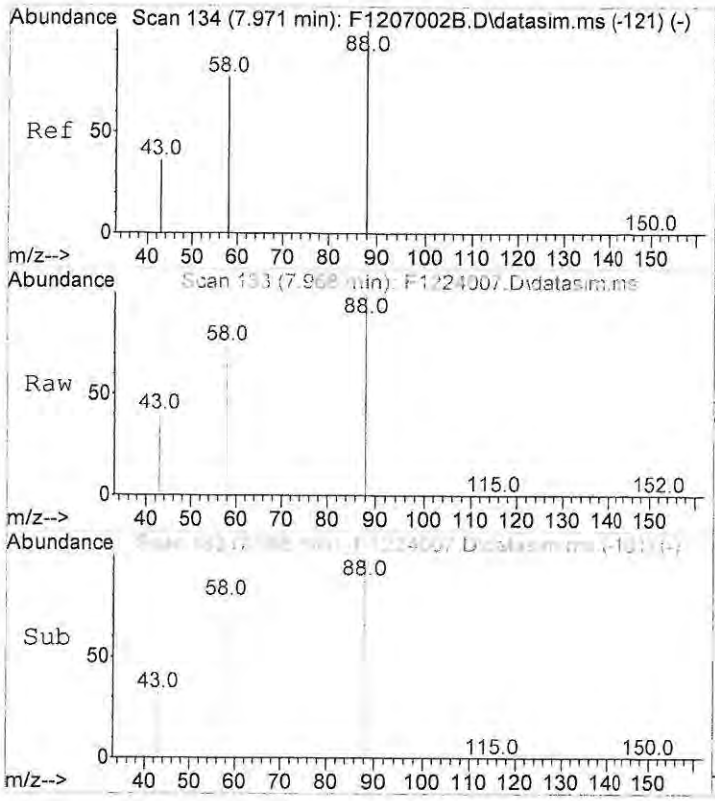
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224007.D
Acq On : 24 Dec 2018 12:38 pm
Operator : CJM
Sample : B219578-MS1 Inst : GCMSSV6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Dec 26 08:04:30 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration



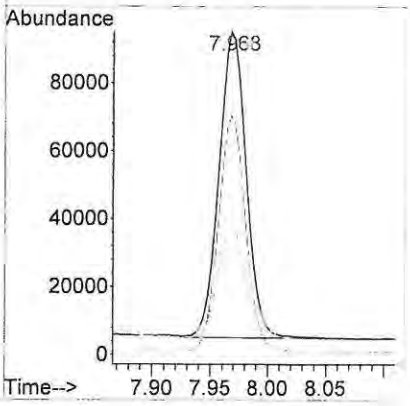




#4
1,4-Dioxane
Concen: 15.23 ug/mL
RT: 7.968 min Scan# 133
Delta R.T. 0.007 min
Lab File: F1224007.D
Acq: 24 Dec 2018 12:38 pm

Tgt Ion: 88 Resp: 149268

Ion	Ratio	Lower	Upper
88	100		
58	76.6	53.3	99.1
43	39.4	25.8	48.0



1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY		Project:	60284002 - Utica, NY	
Matrix:	Water	Laboratory ID:	B219578-MSD1	File ID:	F1224008.D
Sampled:		Prepared:	12/19/18 11:29	Analyzed:	12/24/18 12:57
Solids:		Preparation:	SW-846 3510C	Dilution:	
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				
Column:	1				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	14.3	0.032	0.20	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224008.D
Acq On : 24 Dec 2018 12:57 pm
Operator : CJM
Sample : B219578-MSD1 Inst : GCMSSV6
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 26 08:04:32 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration

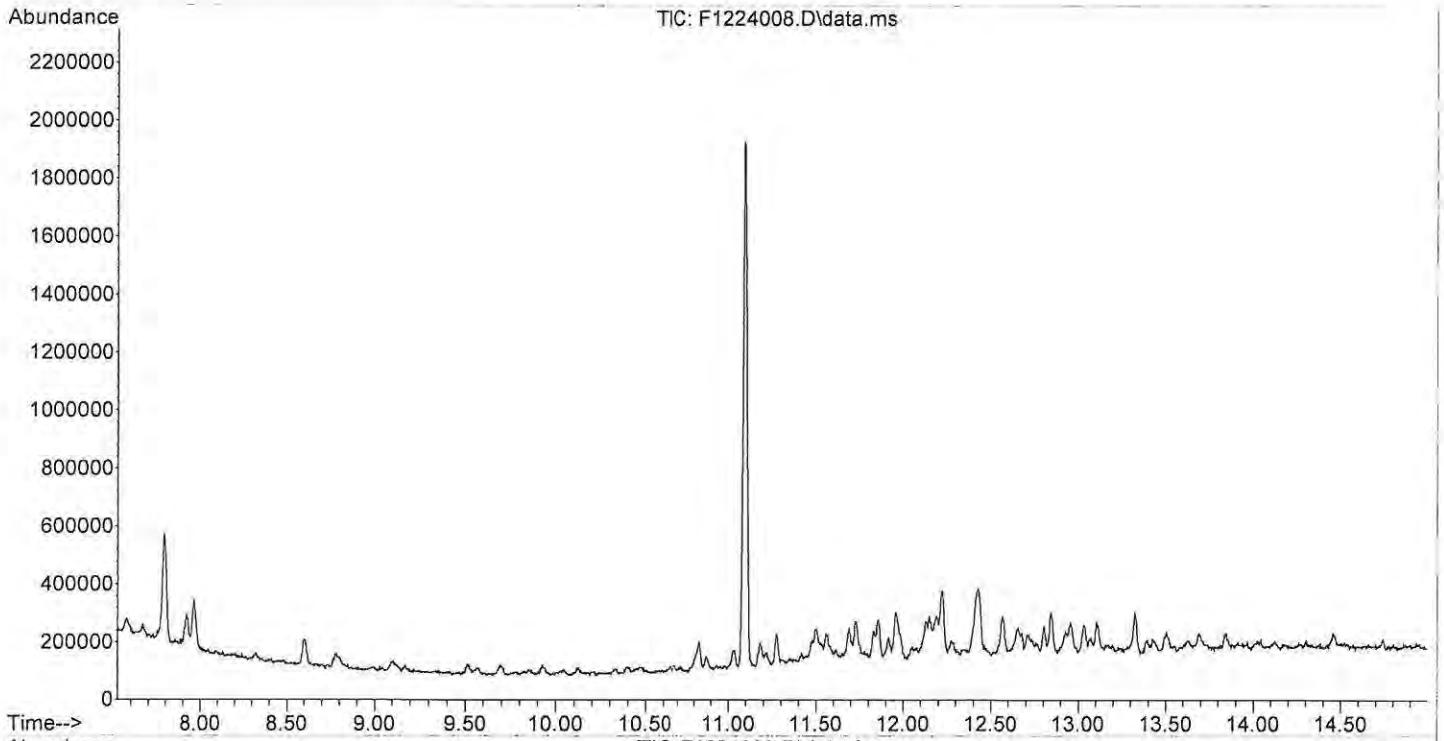
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	11.095	150	1283565	10.000	ug/mL	0.00
3) 1,4-Dioxane-d8 (I.S.)	7.924	96	100847	10.000	ug/mL	0.01
System Monitoring Compounds						
2) 1,4-Dioxane-d8	7.924	96	100847	2.544	ug/mL	0.00
Target Compounds						Qvalue
4] 1,4-Dioxane	7.968	88	157095	14.634	ug/mL	98

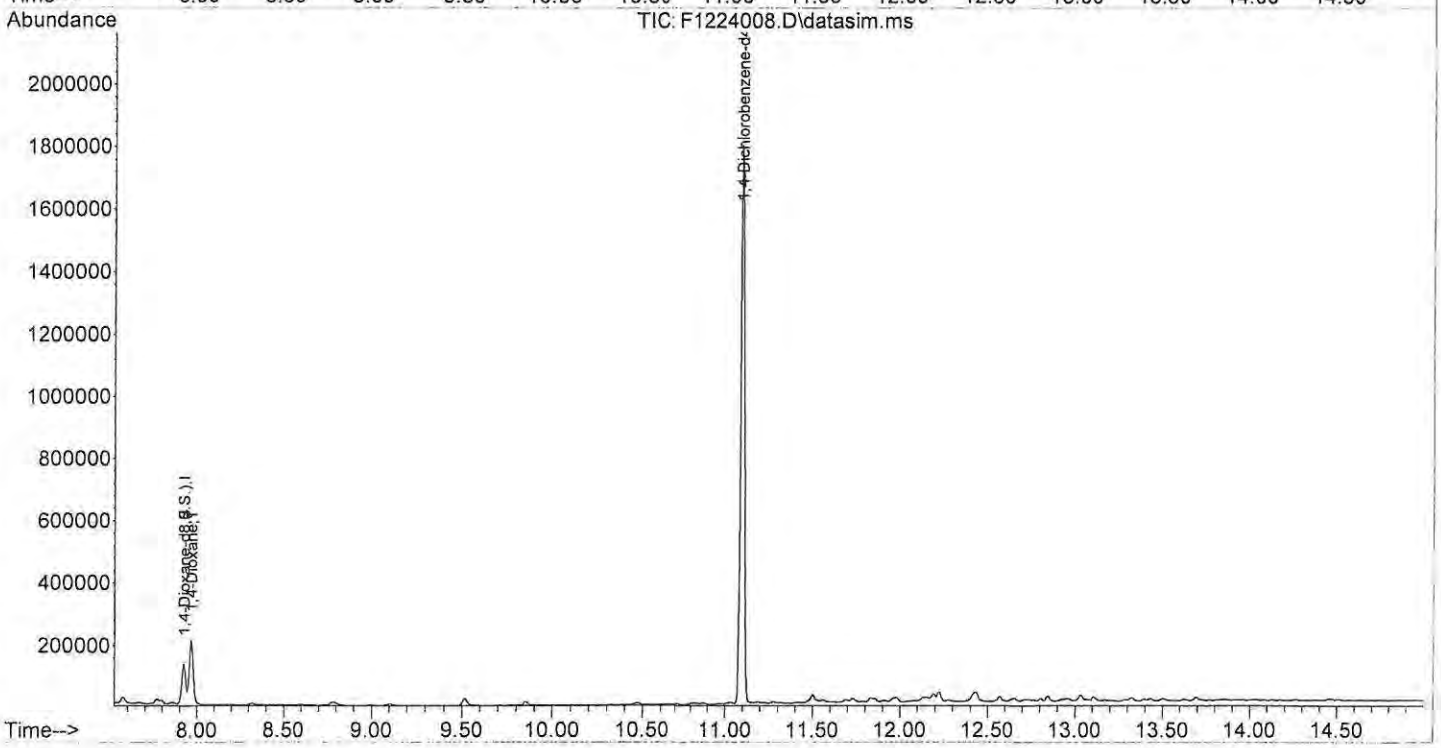
(#) = qualifier out of range (m) = manual integration (+) = signals summed

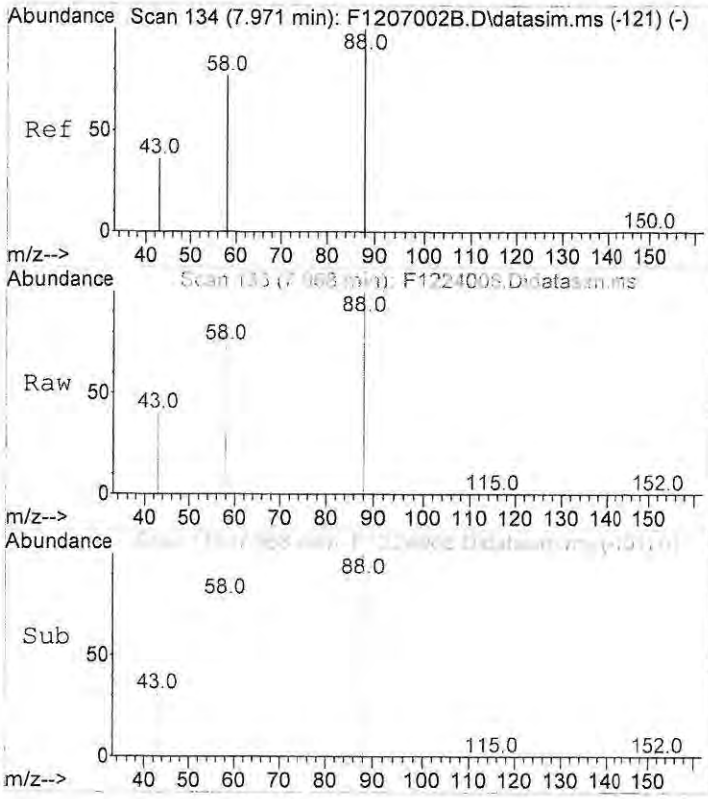
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\F122418\
Data File : F1224008.D
Acq On : 24 Dec 2018 12:57 pm
Operator : CJM
Sample : B219578-MSD1 Inst : GCMSSV6
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 26 08:04:32 2018
DataAcq Meth:D051518.M
Quant Method : C:\msdchem\1\methods\DQ100818.M
Quant Title :
QLast Update : Mon Oct 08 17:21:05 2018
Response via : Initial Calibration



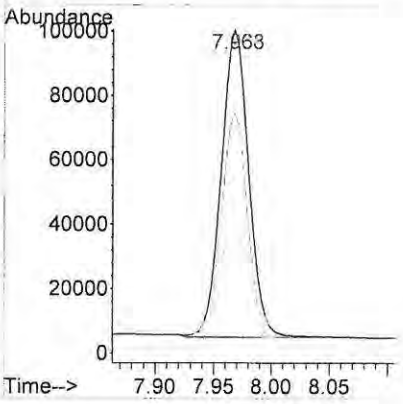




#4
1,4-Dioxane
Concen: 14.63 ug/mL
RT: 7.968 min Scan# 133
Delta R.T. 0.007 min
Lab File: F1224008.D
Acq: 24 Dec 2018 12:57 pm

Tgt Ion: 88 Resp: 157095

Ion	Ratio	Lower	Upper
88	100		
58	77.3	53.3	99.1
43	39.7	25.8	48.0



PREPARATION BENCH SHEET

Printed: 12/19/2018 12:41:03PM

Analysis
1,4-Dioxane SIM

B219578

Con-Test Analytical Laboratory

Prepared using: SW-846 3510C

Surrogate Solution
1811299 1,4-Dioxane Surrogate - 100 ug/mL

Spiking Solution
1809385 1,4-Dioxane Spike - 100 ug/mL

Matrix: Water

Lab Number	Sample ID and Source Sample	Due Date	Expires	Concentrated	pH	Initial (mL)	Final (mL)	ul Spike	ul Surrogate	Extraction Comments
B219578-BLK1	Blank			ATF 12/20	pH 7	1000	1.0		100	Buchi #7
B219578-BS1	LCS							100	100	
B219578-BSD1	LCS Dup							100	100	
B219578-MS1	Matrix Spike [18L0603-02]					1030		100	100	
B219578-MSD1	Matrix Spike Dup [18L0603-02]					1020		100	100	
18L0603-01	MW-15 121218	12/27/18	12/19/18			1020			100	
18L0603-02	MW-5 121218	12/27/18	12/19/18			1030			100	MS/MSD
18L0603-03	MW-16 121218	12/27/18	12/19/18			1020			100	
18L0603-04	MW-12 121218	12/27/18	12/19/18			1040			100	
18L0603-05	MW-1 121218	12/27/18	12/19/18						100	
18L0603-06	DUP	12/27/18	12/19/18						100	

Start Date/Time _____

StopDate/Time _____

Standard ID#	Description	Manufacture Lot#
1811111	Acetone	DV184-US
1811140	Filter Paper (VWR 121) 415	16826201
1811429	Sodium Sulfate (Baked)	Sodium Sulfate/1
1812079	Methylene Chloride (200 L Drum)	DV255-US

(WIT) (SPK) MAT ESD — 12-19-18
Spikedby/Witnessed By — Date

ESD — 12-19-18
Extracted By — Date

Injection Log

C:\msdchem\1\data\F122418\

Date	Filename	Lab ID	Sample Info
24 Dec 2018 10:05 am	F1224001.D	TUNE 25 ng	1810455 EXP 030119
24 Dec 2018 10:34 am	F1224001B.D	TUNE 25 ng	1810455 EXP 030119
24 Dec 2018 11:00 am	F1224002.D	DIOX 10 ug/mL	1810164 EXP 040819
24 Dec 2018 11:19 am	F1224003.D	DIOX-D8 10 ug/mL	1810165 EXP 040819
24 Dec 2018 11:39 am	F1224004.D	B219578-BS1	I.S.1808060 EXP 020219
24 Dec 2018 11:59 am	F1224005.D	B219578-BSD1	I.S.1810098 EXP 040819
24 Dec 2018 12:18 pm	F1224006.D	B219578-BLK1	
24 Dec 2018 12:38 pm	F1224007.D	B219578-MS1	
24 Dec 2018 12:57 pm	F1224008.D	B219578-MSD1	
24 Dec 2018 1:17 pm	F1224009.D	18L0603-01	
24 Dec 2018 1:36 pm	F1224010.D	18L0603-02	
24 Dec 2018 1:56 pm	F1224011.D	18L0603-03	
24 Dec 2018 2:15 pm	F1224012.D	18L0603-04	
24 Dec 2018 2:35 pm	F1224013.D	18L0603-05	
24 Dec 2018 2:54 pm	F1224014.D	18L0603-08	

S030678

HPLC

SAMPLE DATA

1 - FORM I
ANALYSIS DATA SHEET

MW-15 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-01	File ID:	lims export files full-006
Sampled:	12/12/18 09:40	Prepared:	12/24/18 08:00	Analyzed:	12/27/18 11:34
Solids:		Preparation:	EPA 537	Dilution:	1
Initial/Final:	250 mL / 1 mL				
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
Instrument:	HPLC1				

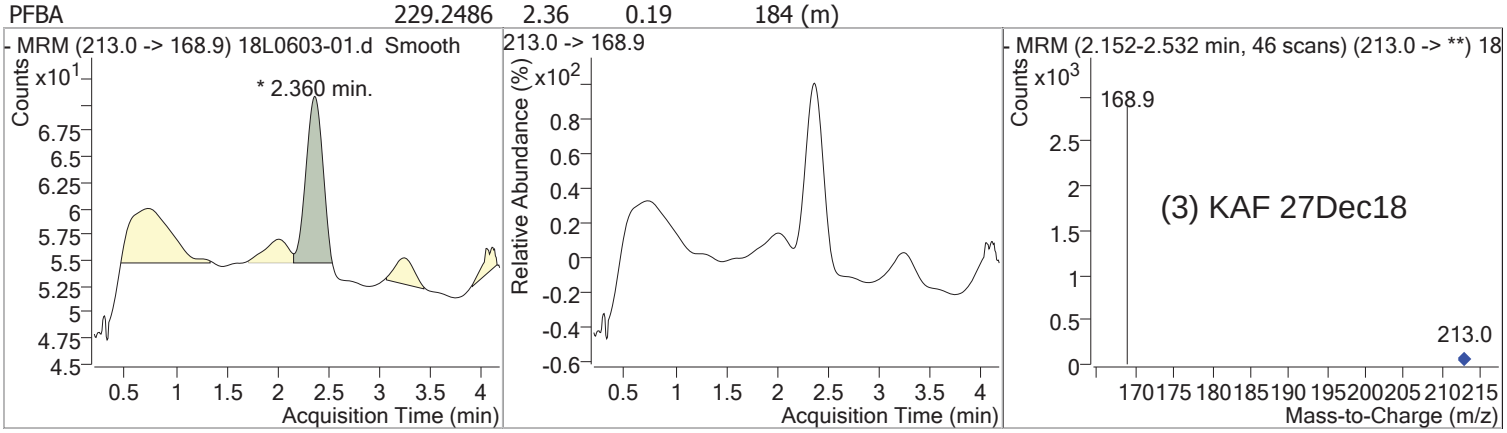
CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)		2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)	2.6	2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)		2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)		2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)		2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)	110	2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)		2.0	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)	2.6	2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)		2.0	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		2.0	2.0	
	NMeFOSAA		2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		2.0	2.0	
	NEtFOSAA		2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		2.0	2.0	

Data File	18L0603-01.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/27/2018 11:34:25 AM
Sample Name	18L0603-01	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File	122018.m	Comment	
Tune File		Tune Date	
Batch Name	1.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

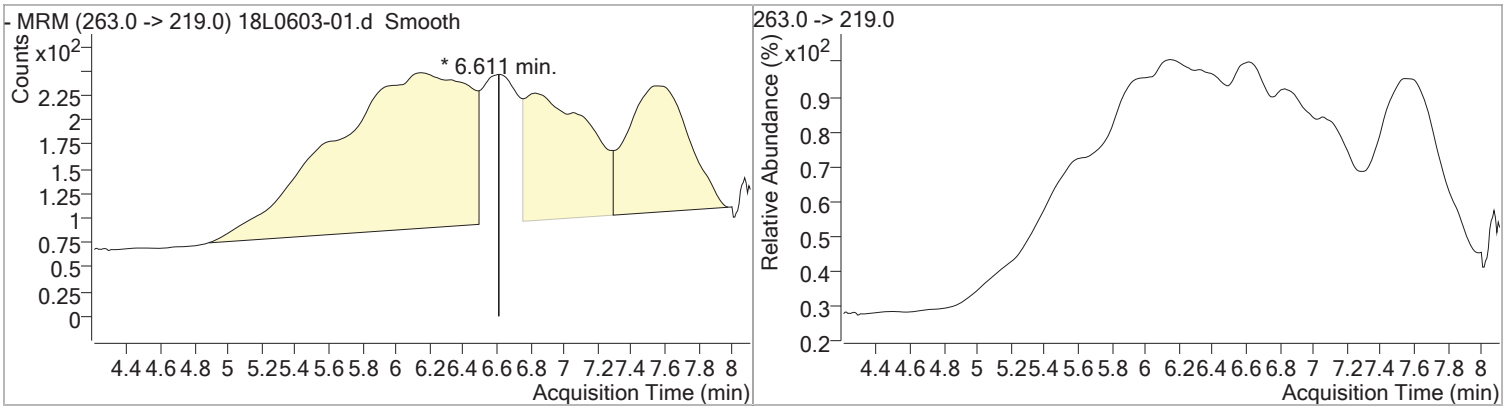
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	7.854	416.9 -> 371.9	14305	10000.0000	pg/ml		0.203
M PFOS C13	8.036	502.9 -> 80.0	9786	28700.0000	pg/ml		0.136
M d3-N-MeFOSAA	8.262	573.2 -> 419.0	11730	40000.0000	pg/ml		0.077
System Monitoring Compounds							
S PFHxA C13	7.300	314.9 -> 269.9	17200	9780.9812	pg/ml		0.362
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 97.81%			
S PFDA C13	8.187	514.9 -> 469.9	8203	8849.8635	pg/ml		0.094
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 88.50%			
S d5-N-MeFOSAA	8.328	589.2 -> 419.0	8933	34811.0889	pg/ml		0.060
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 87.03%			
Target Compounds							QValue
T PFBA	2.360	213.0 -> 168.9	184	229.2486	pg/ml	m	100
T PFPeA	6.611	263.0 -> 219.0	0	0.0000	pg/ml	md	1
T PFBS	6.543	298.9 -> 80.0	0	0.0000	pg/ml	md	1
T PFHxA	7.300	312.9 -> 268.9	1037	641.7155	pg/ml	m	100
T PFHpA	7.627	362.9 -> 319.0	0	0.0000	pg/ml	md	1
T 6.2 FTS	7.845	427.0 -> 406.8	0	0.0000	pg/ml	md	1
T PFOA-Total	7.854	412.9 -> 368.9	1051	641.4053	pg/ml	m	100
T PFHpS	7.516	449.0 -> 79.7	0	0.0000	pg/ml	md	1
T PFHxS-Total	7.736	398.9 -> 80.0	0	0.0000	pg/ml	md	1
T PFNA	8.466	462.9 -> 418.9	0	0.0000	pg/ml	md	1
T PFOS-Total	7.910	498.9 -> 80.0	0	0.0000	pg/ml	md	1
T PFDA	8.154	513.1 -> 469.0	0	0.0000	pg/ml	md	1
T 8.2 FTS	8.128	527.0 -> 81.0	0	0.0000	pg/ml	md	1
T N-MeFOSAA	8.077	570.2 -> 419.1	0	0.0000	pg/ml	md	1
T FOSA	8.441	497.9 -> 77.9	0	0.0000	pg/ml	md	1
T PFDS	8.370	599.0 -> 80.0	0	0.0000	pg/ml	md	1
T N-EtFOSAA	8.219	584.2 -> 419.0	0	0.0000	pg/ml	md	1
T PFUnA	8.321	563.1 -> 519.0	0	0.0000	pg/ml	md	1
T PFDoA	8.512	613.1 -> 569.0	0	0.0000	pg/ml	md	1
T PFTrDA	8.554	663.1 -> 619.0	0	0.0000	pg/ml	md	1
T PFTA	8.638	713.1 -> 669.1	0	0.0000	pg/ml	md	1

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

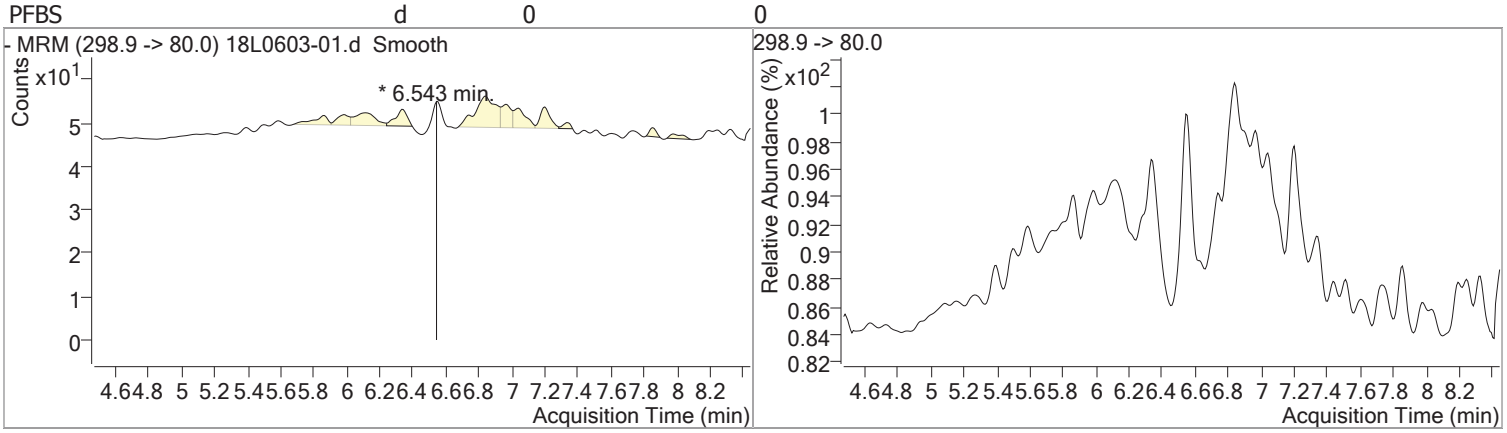
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	229.2486	2.36	0.19	184 (m)				



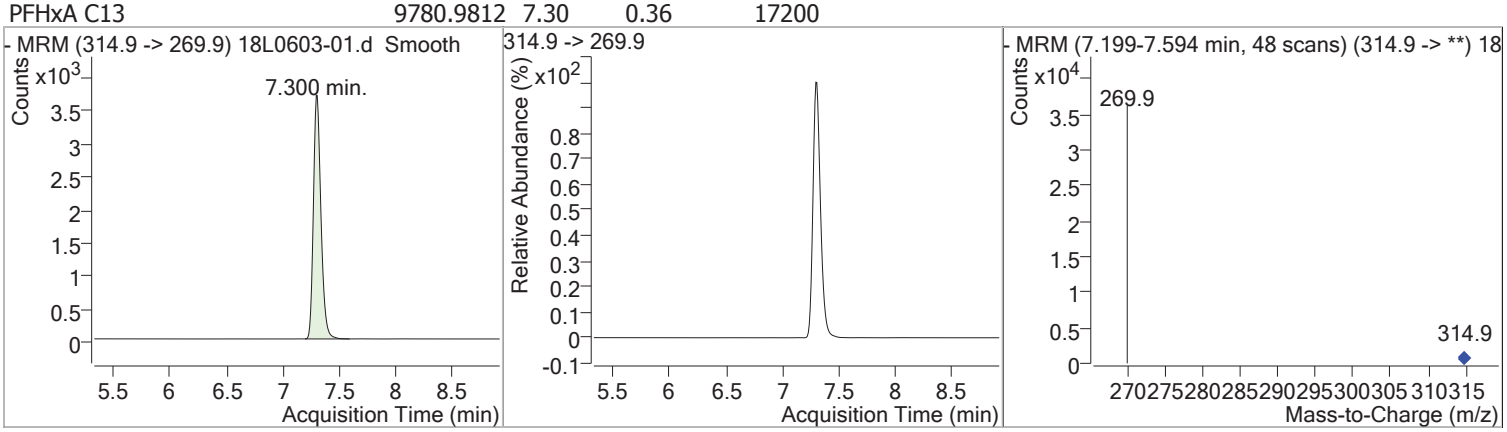
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	d	0		0				



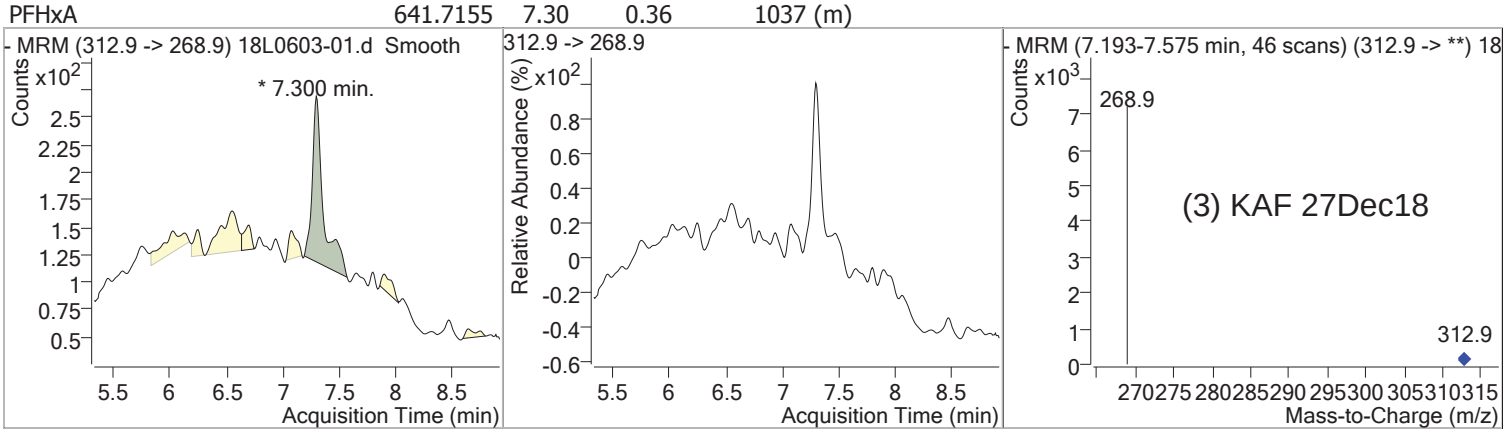
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	d	0		0				



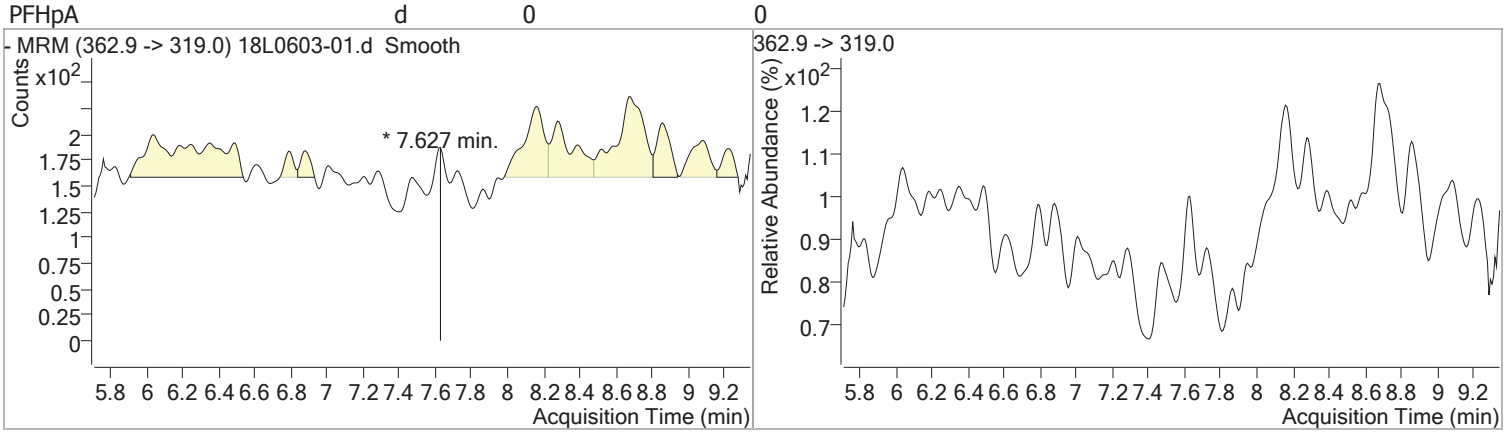
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	9780.9812	7.30	0.36	17200				



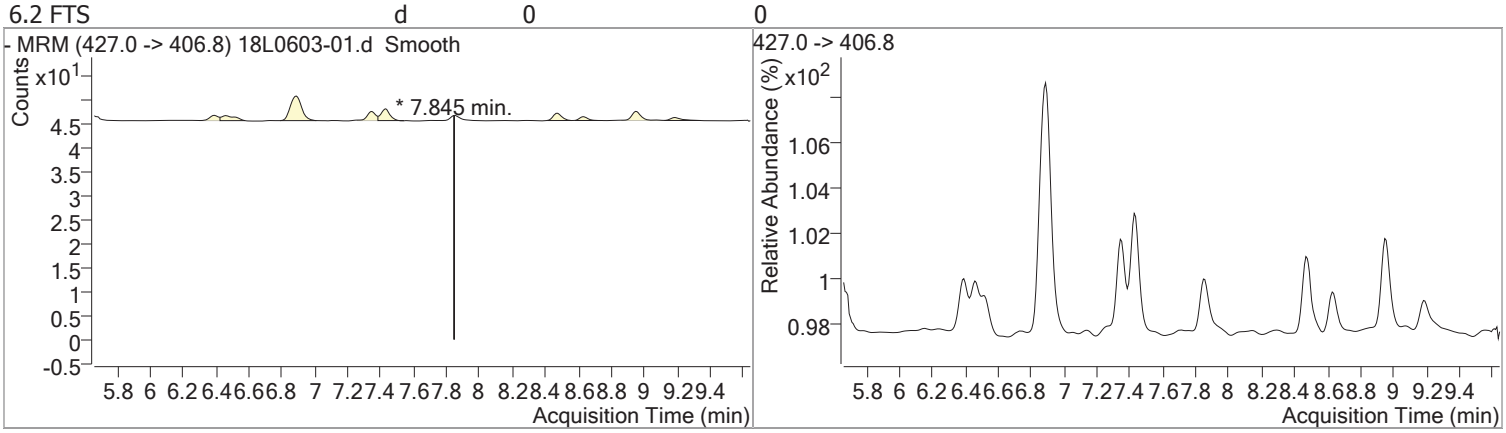
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	641.7155	7.30	0.36	1037 (m)				



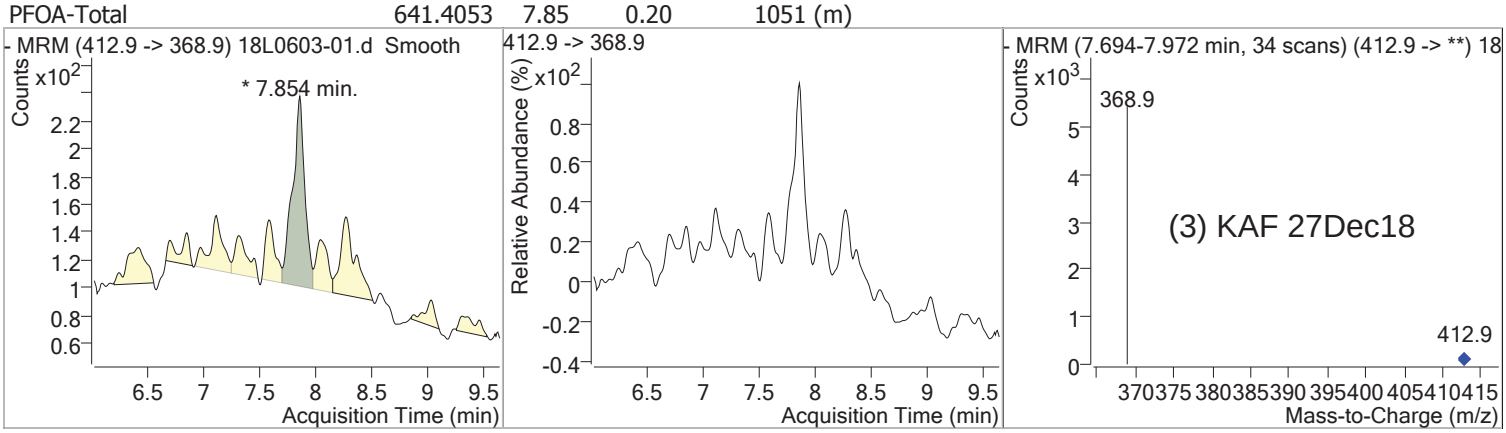
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	d	0		0				



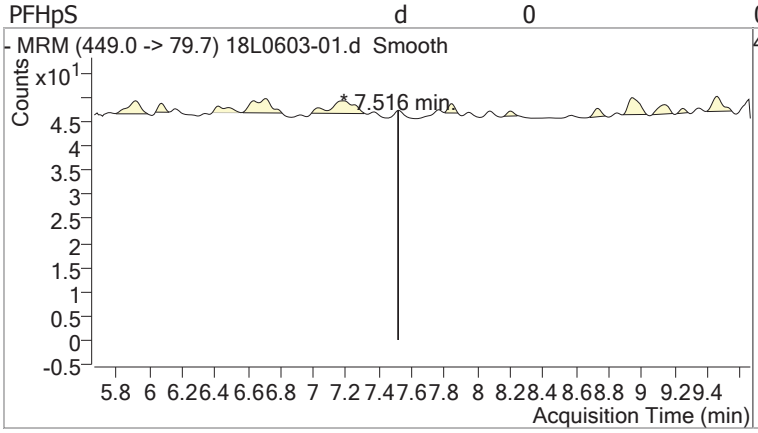
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	d	0		0				

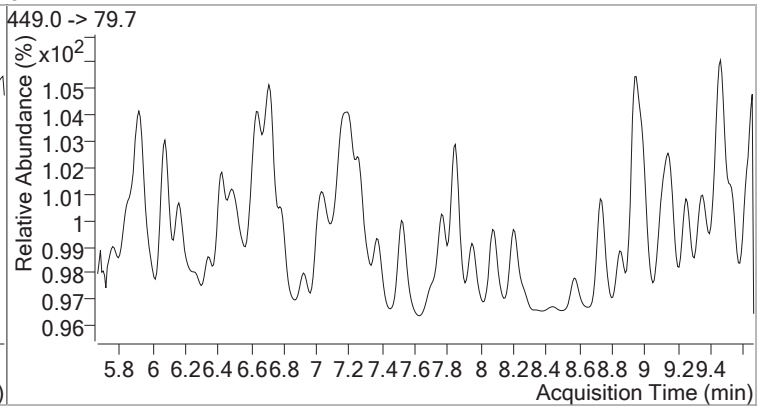


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	641.4053	7.85	0.20	1051 (m)				

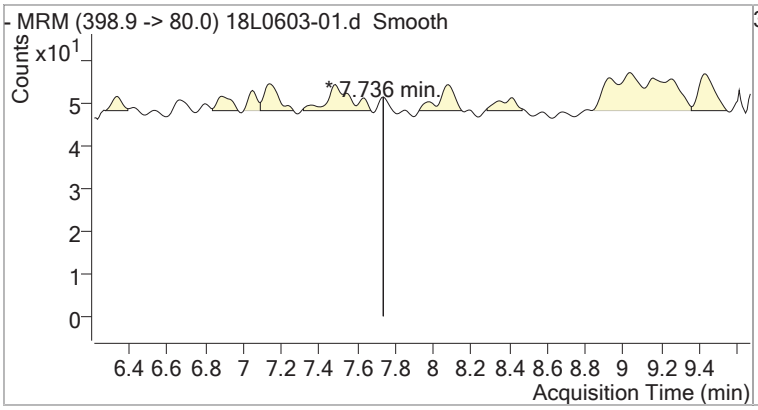


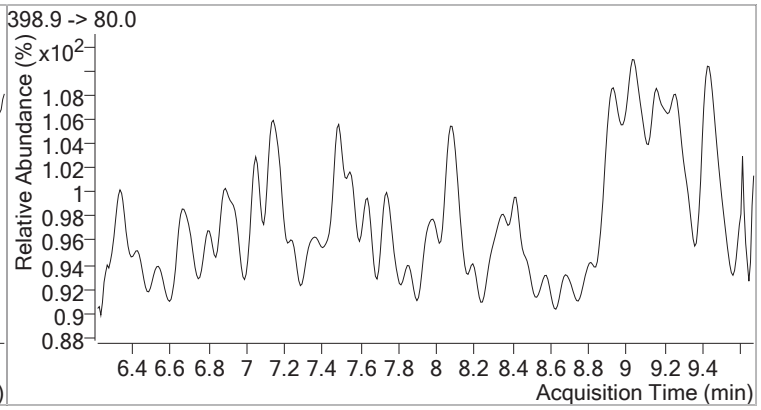
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	d	0		0				



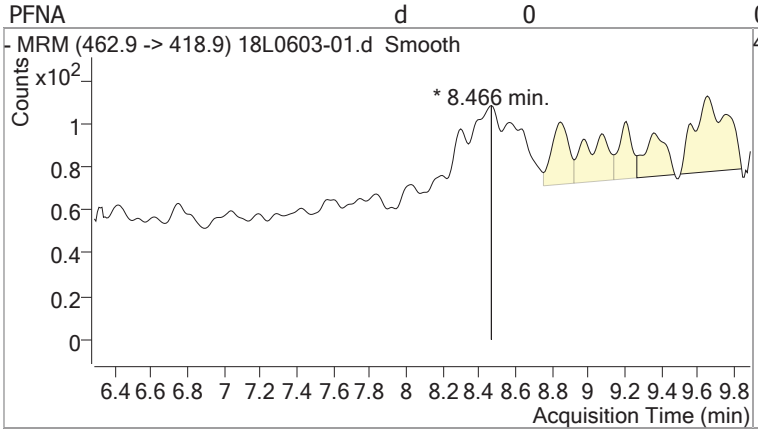


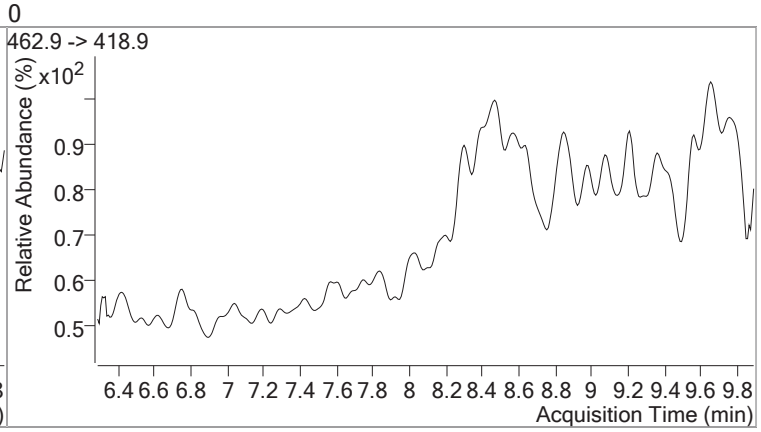
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	d	0		0				



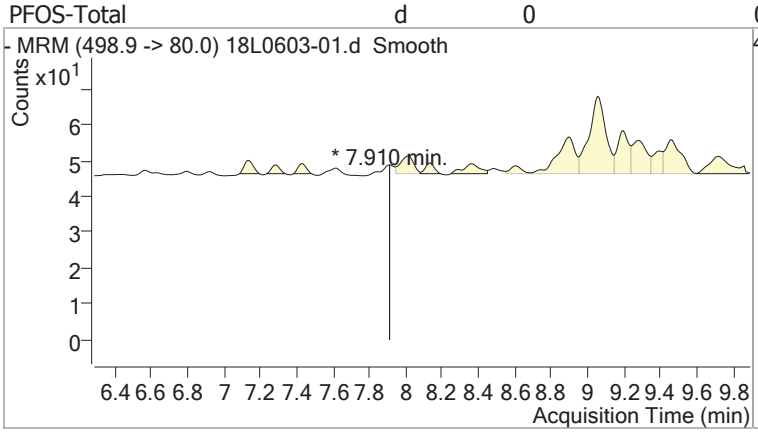


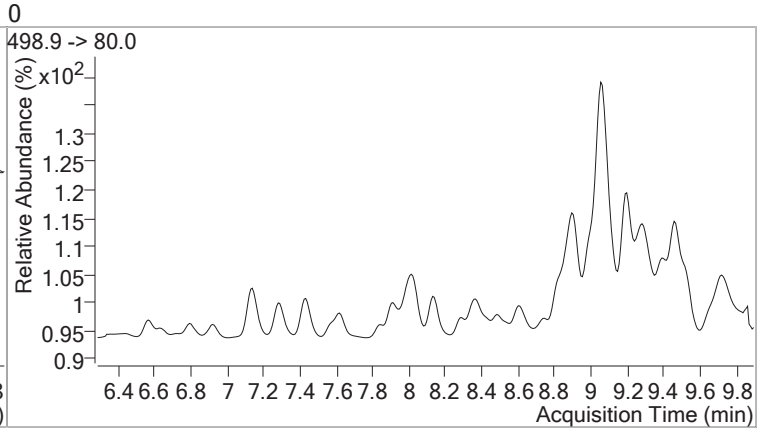
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	d	0		0				



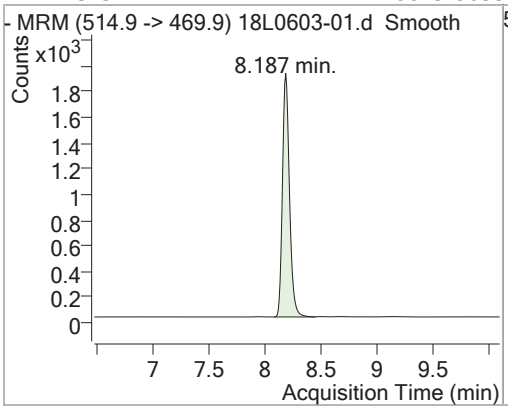


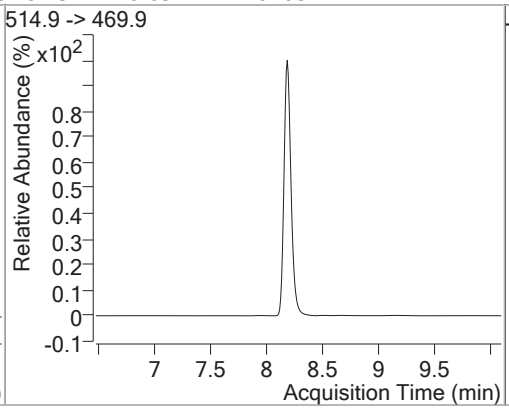
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	d	0		0				

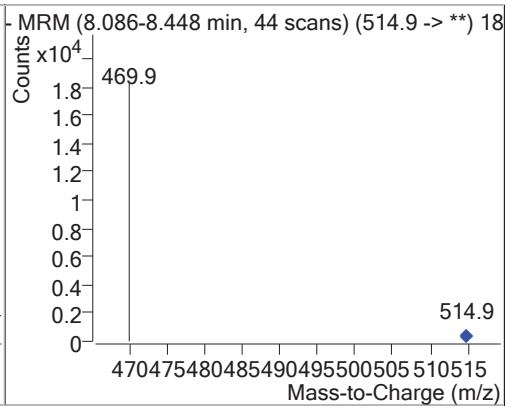




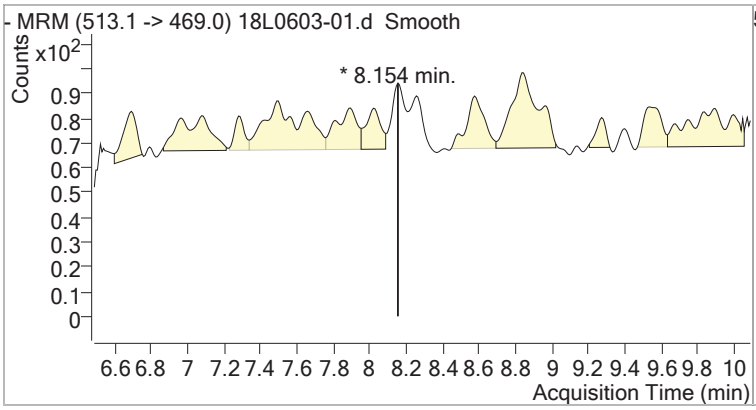
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PFDA C13	8849.8635	8.19	0.09	8203				

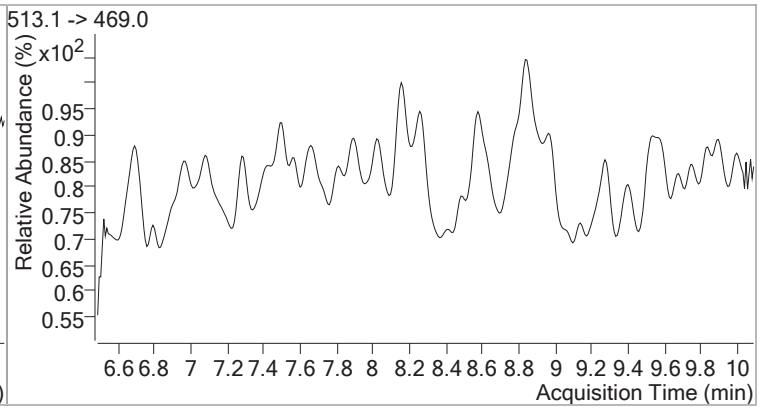




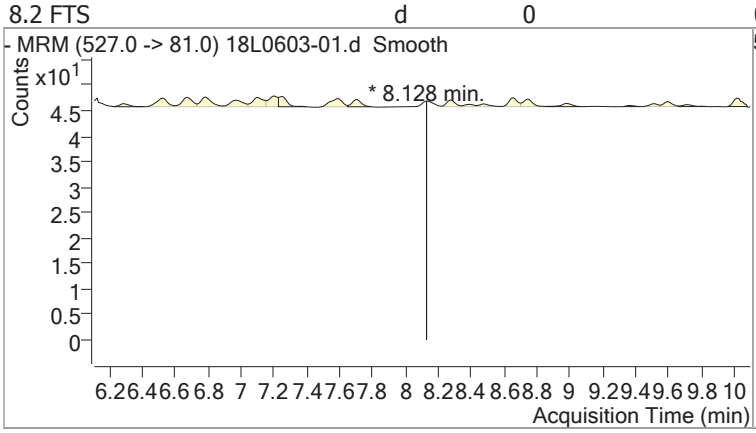


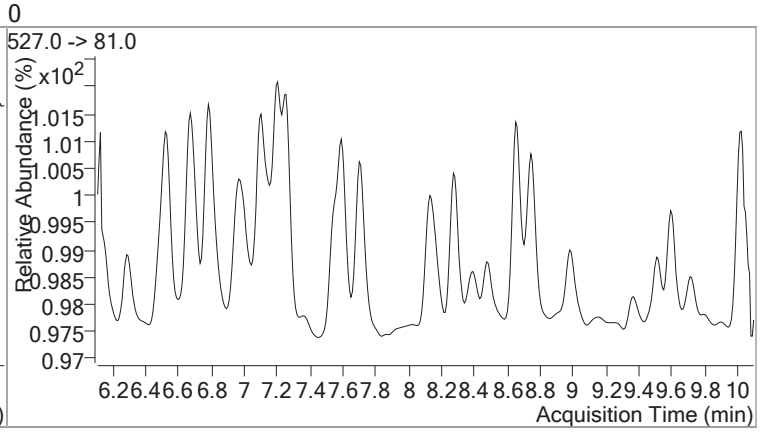
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	d	0		0				



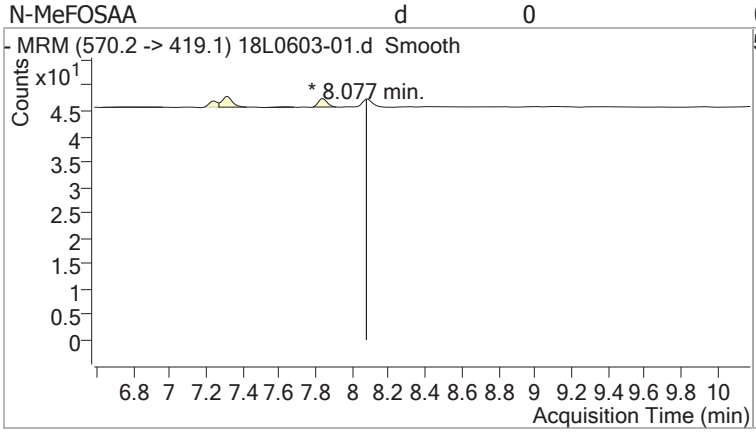


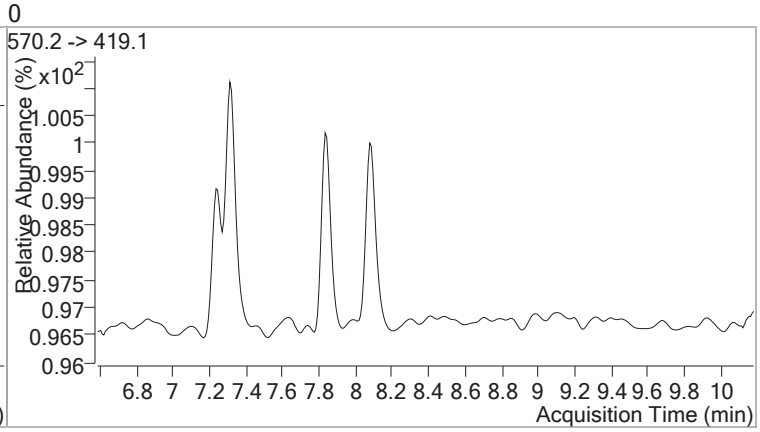
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	d	0		0				



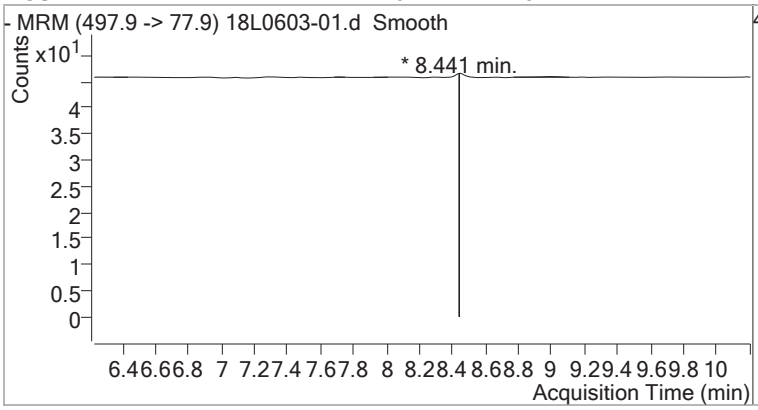


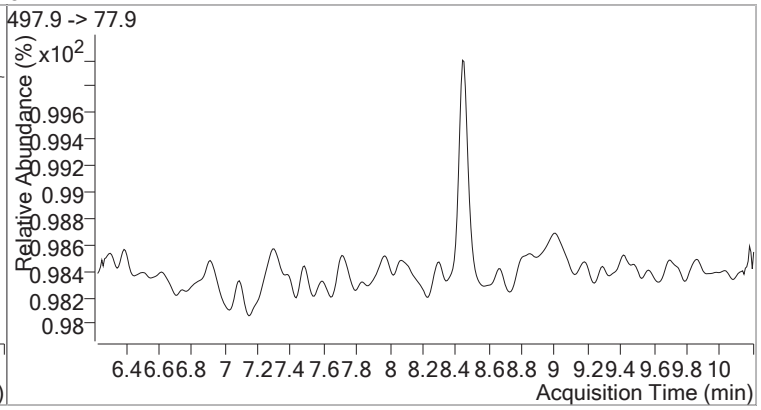
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	d	0		0				



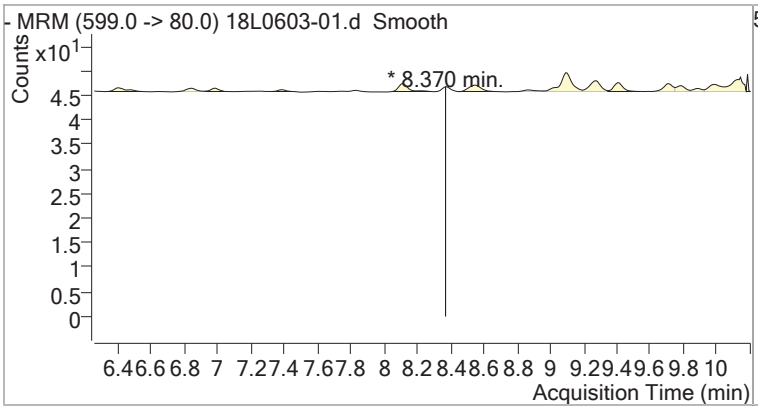


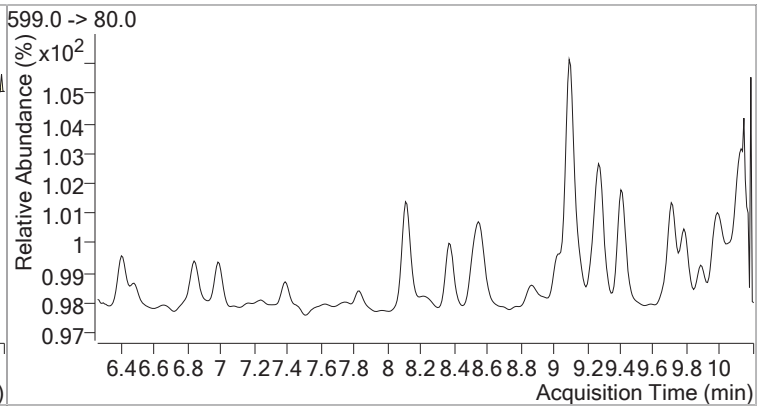
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	d	0		0				



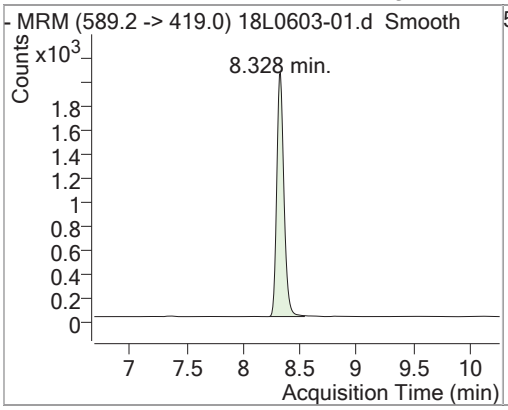


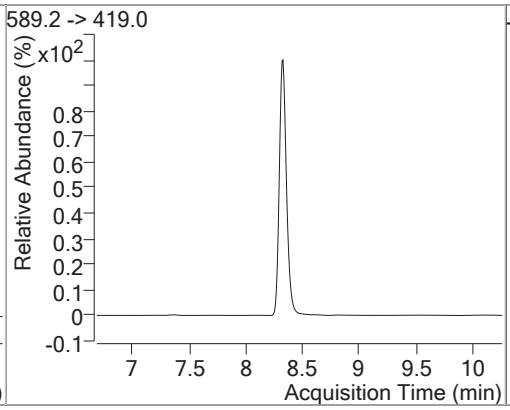
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	d	0		0				

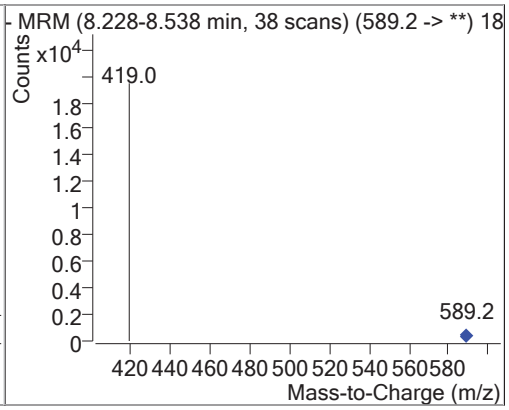




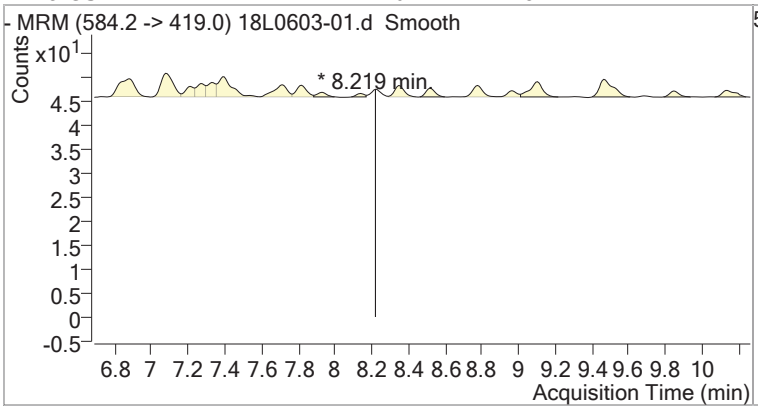
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	34811.0889	8.33	0.06	8933				

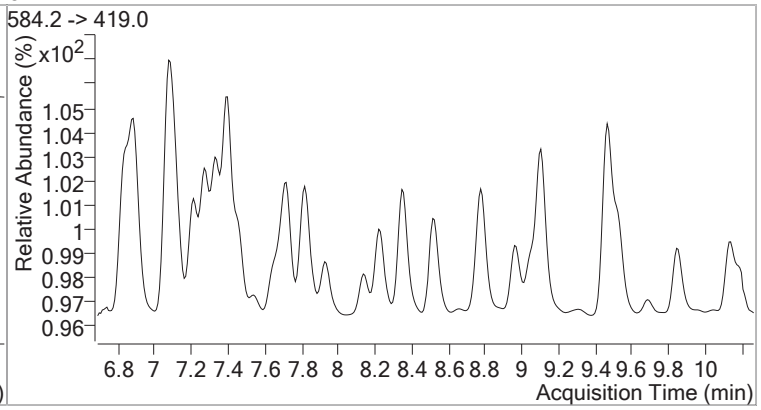




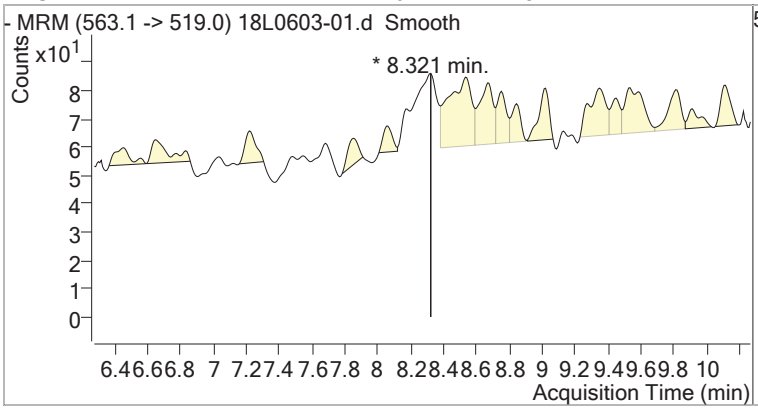


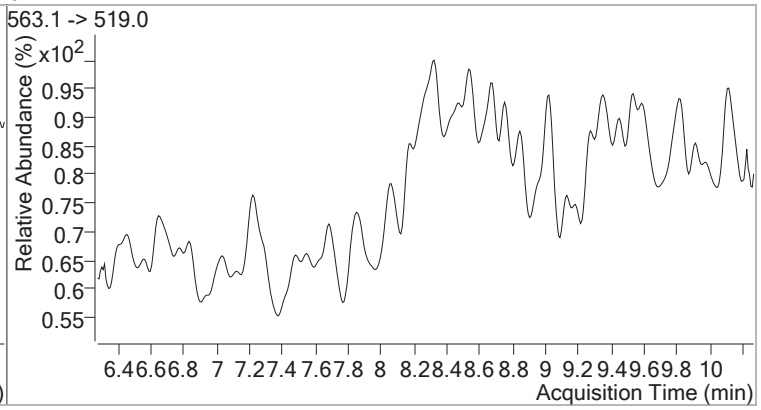
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	d	0		0				



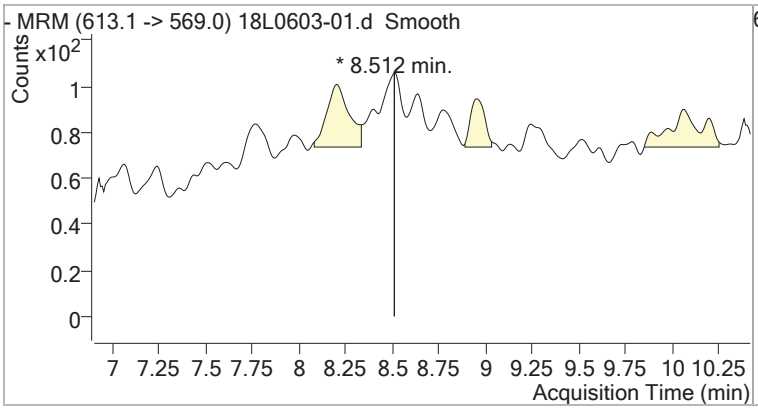


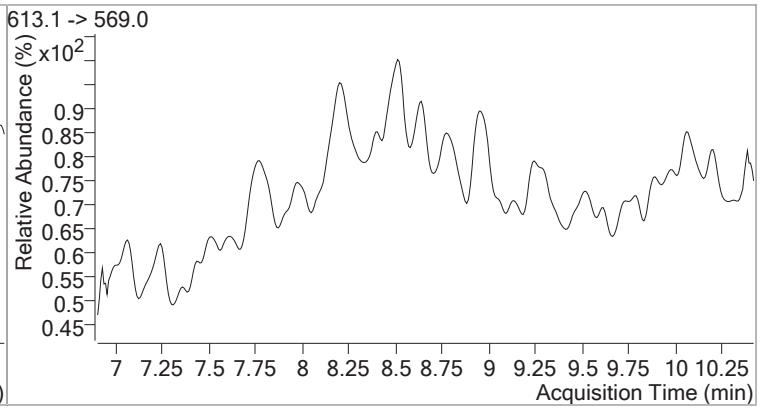
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	d	0		0				



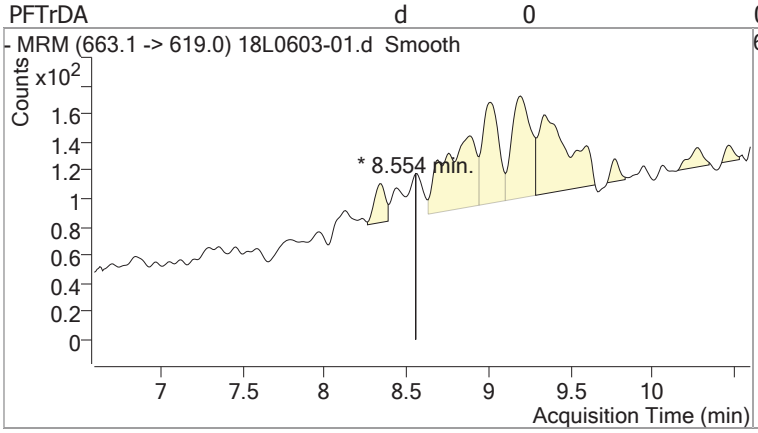


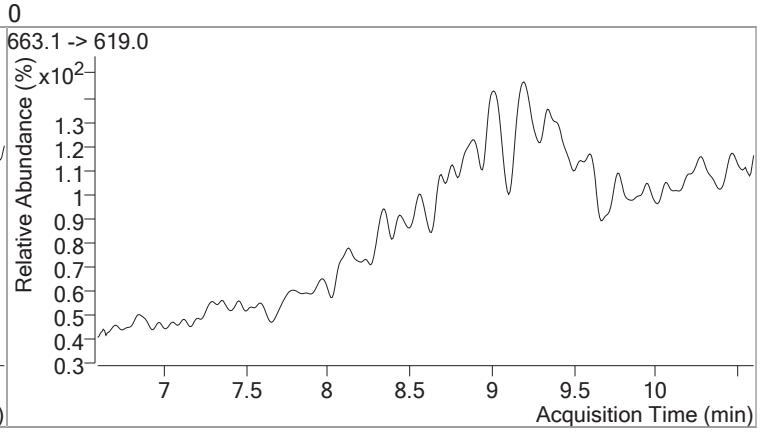
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PFDoA	d	0		0				



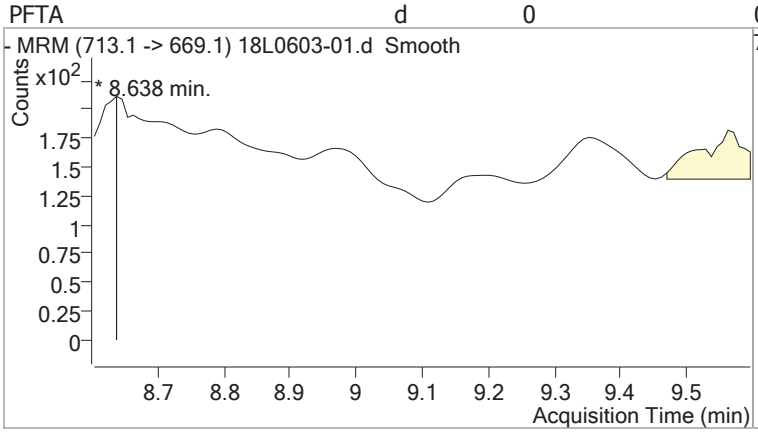


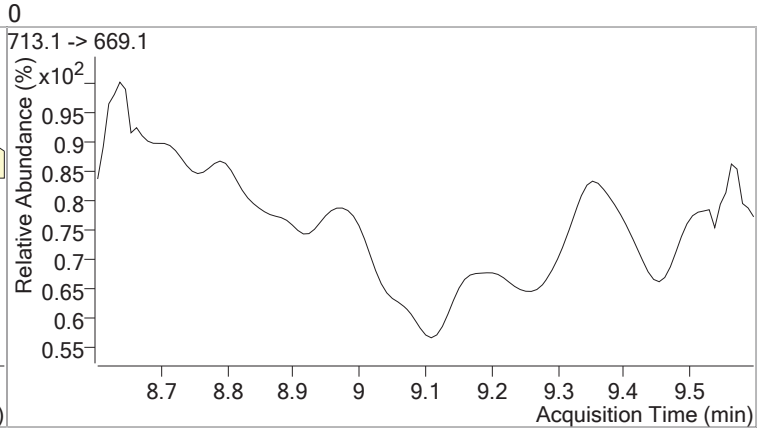
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	d	0		0				





Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	d	0		0				





1 - FORM I
ANALYSIS DATA SHEET

MW-5 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-02	File ID:	lims export files full-007
Sampled:	12/12/18 11:00	Prepared:	12/24/18 08:00	Analyzed:	12/27/18 11:47
Solids:		Preparation:	EPA 537	Dilution:	1
Initial/Final:	250 mL / 1 mL				
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
Instrument:	HPLC1				

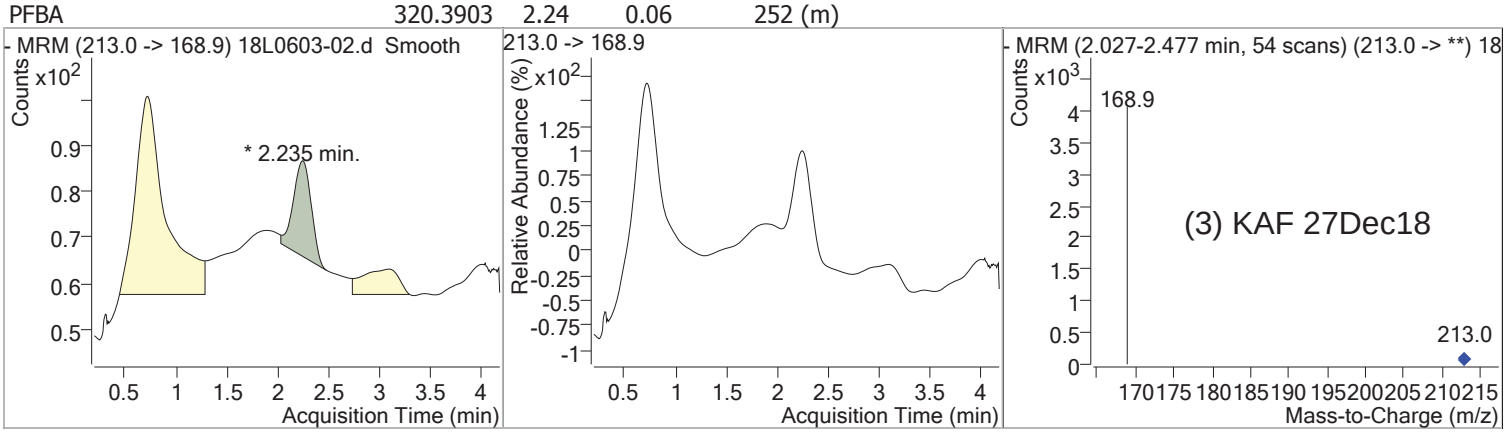
CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)	3.1	2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)		2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)		2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)		2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)		2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)	6.6	2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)		2.0	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	2.7	2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)	9.6	2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	10	2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)		2.0	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		2.0	2.0	
	NMeFOSAA		2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		2.0	2.0	
	NEtFOSAA		2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		2.0	2.0	

Data File	18L0603-02.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/27/2018 11:47:10 AM
Sample Name	18L0603-02	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File	122018.m	Comment	
Tune File		Tune Date	
Batch Name	1.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

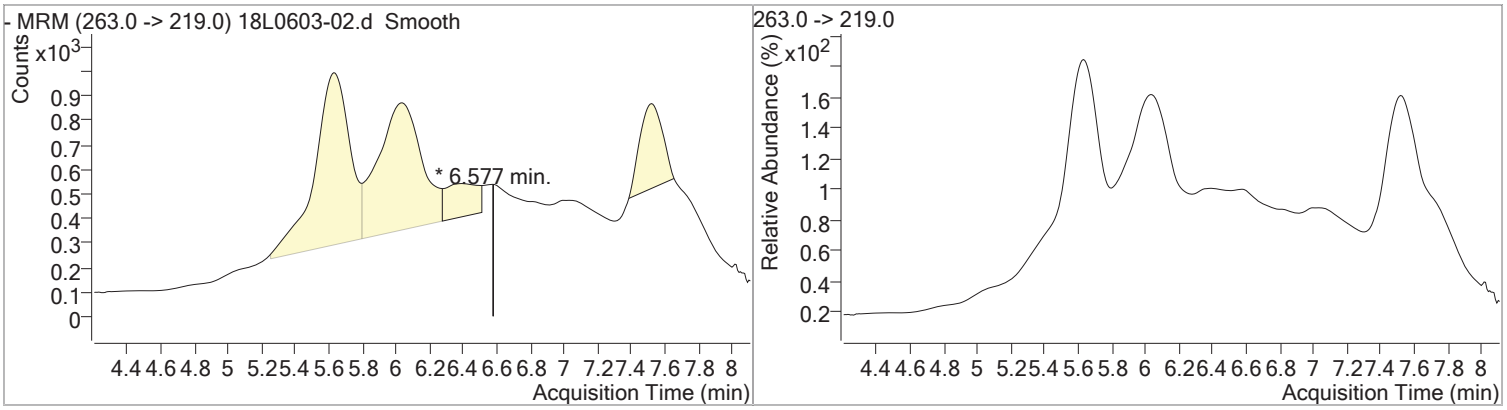
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	7.870	416.9 -> 371.9	14031	10000.0000	pg/ml		0.220
M PFOS C13	8.053	502.9 -> 80.0	9235	28700.0000	pg/ml		0.153
M d3-N-MeFOSAA	8.278	573.2 -> 419.0	11461	40000.0000	pg/ml		0.094
System Monitoring Compounds							
S PFHxA C13	7.316	314.9 -> 269.9	15606	9047.6265	pg/ml		0.379
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 90.48%			
S PFDA C13	8.204	514.9 -> 469.9	7803	8582.5672	pg/ml		0.111
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 85.83%			
S d5-N-MeFOSAA	8.345	589.2 -> 419.0	8091	32272.2348	pg/ml		0.077
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 80.68%			
Target Compounds							QValue
T PFBA	2.235	213.0 -> 168.9	252	320.3903	pg/ml	m	100
T PFPeA	6.577	263.0 -> 219.0	0	0.0000	pg/ml	md	1
T PFBS	6.905	298.9 -> 80.0	235	785.5257	pg/ml	m	100
T PFHxA	7.317	312.9 -> 268.9	774	488.3167	pg/ml	m	100
T PFHpA	7.644	362.9 -> 319.0	427	250.8644	pg/ml	m	100
T 6.2 FTS	7.870	427.0 -> 406.8	112	1642.0824	pg/ml		100
T PFOA-Total	7.871	412.9 -> 368.9	3857	2399.0150	pg/ml		100
T PFHpS	7.541	449.0 -> 79.7	0	0.0000	pg/ml	md	1
T PFHxS-Total	7.661	398.9 -> 80.0	181	665.7387	pg/ml		100
T PFNA	8.046	462.9 -> 418.9	355	434.3855	pg/ml		100
T PFOS-Total	8.045	498.9 -> 80.0	1065	2622.9944	pg/ml		100
T PFDA	8.019	513.1 -> 469.0	0	0.0000	pg/ml	md	1
T 8.2 FTS	8.018	527.0 -> 81.0	0	0.0000	pg/ml	md	1
T N-MeFOSAA	8.228	570.2 -> 419.1	0	0.0000	pg/ml	md	1
T FOSA	8.272	497.9 -> 77.9	0	0.0000	pg/ml	md	1
T PFDS	8.378	599.0 -> 80.0	0	0.0000	pg/ml	md	1
T N-EtFOSAA	8.026	584.2 -> 419.0	0	0.0000	pg/ml	md	1
T PFUnA	8.329	563.1 -> 519.0	0	0.0000	pg/ml	md	1
T PFDoA	8.613	613.1 -> 569.0	0	0.0000	pg/ml	md	1
T PFTrDA	9.058	663.1 -> 619.0	0	0.0000	pg/ml	md	1
T PFTA	8.747	713.1 -> 669.1	382	236.9009	pg/ml	m	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

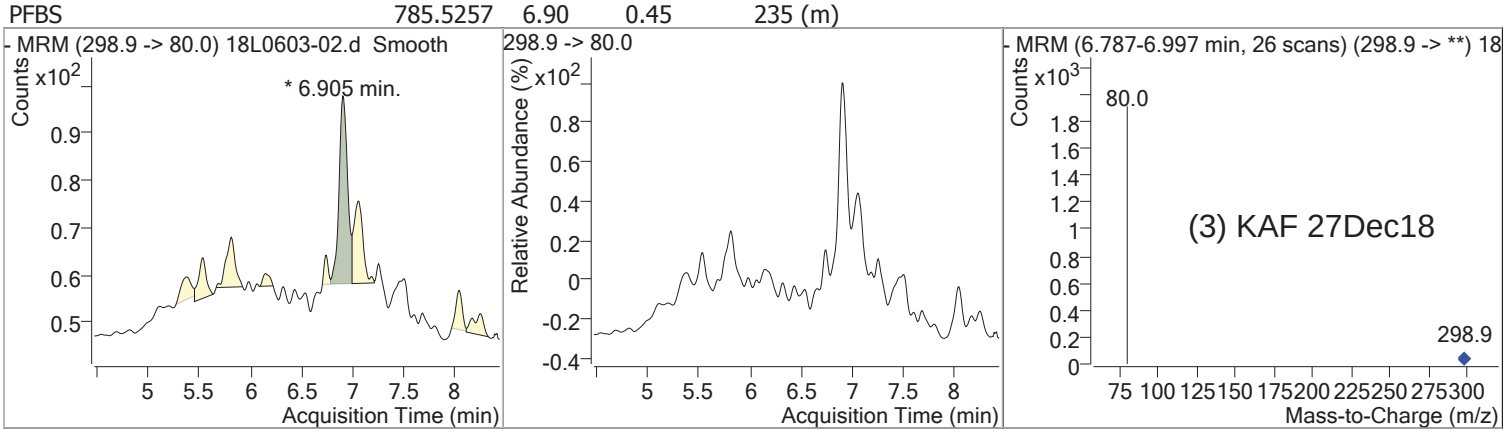
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	320.3903	2.24	0.06	252 (m)				



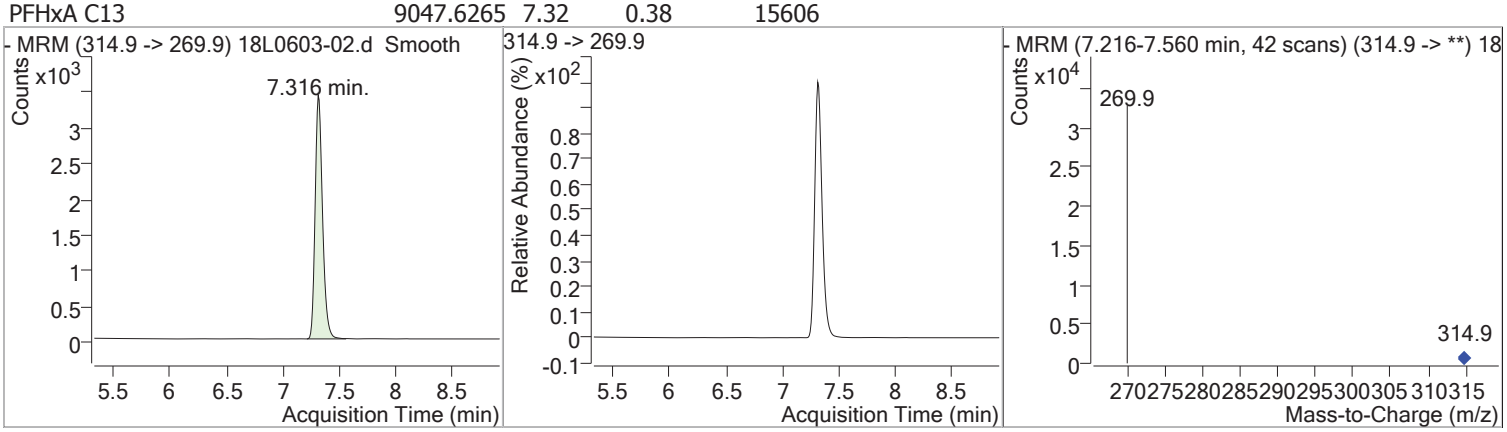
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	d	0		0				



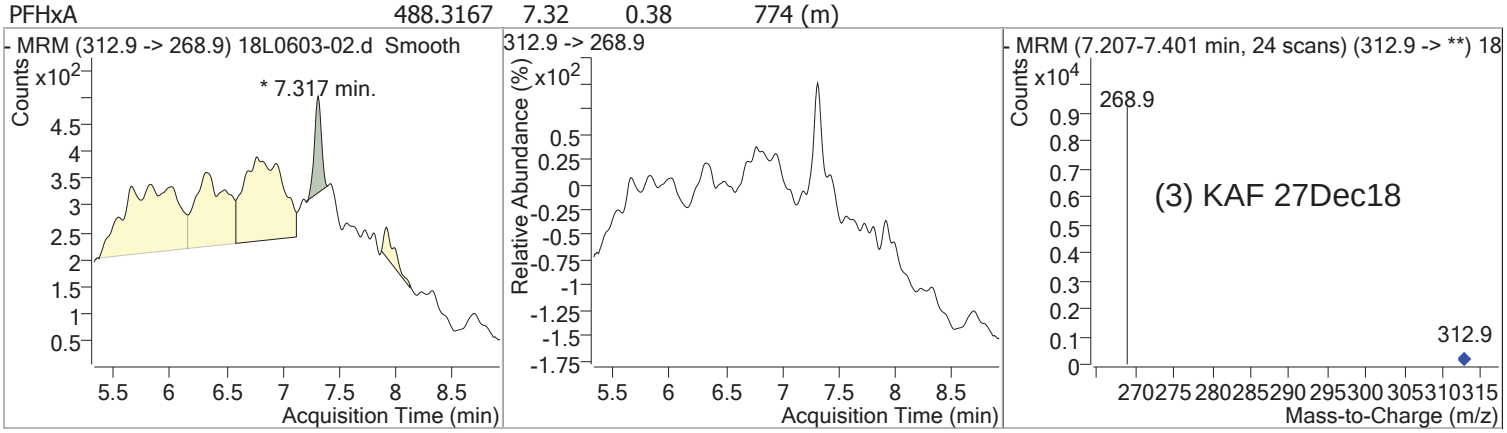
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	785.5257	6.90	0.45	235 (m)				



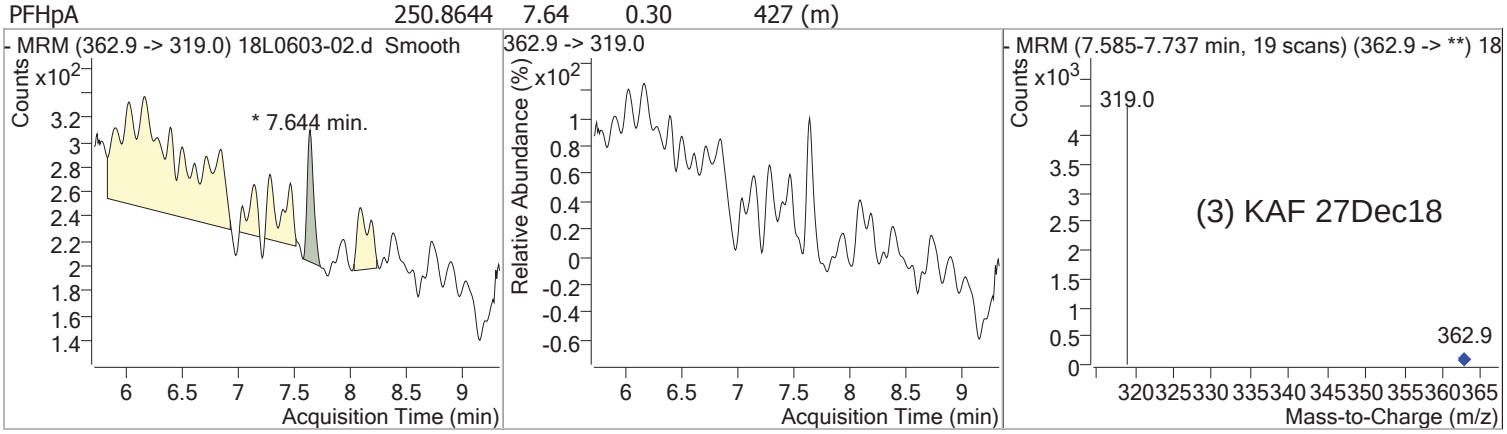
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	9047.6265	7.32	0.38	15606				



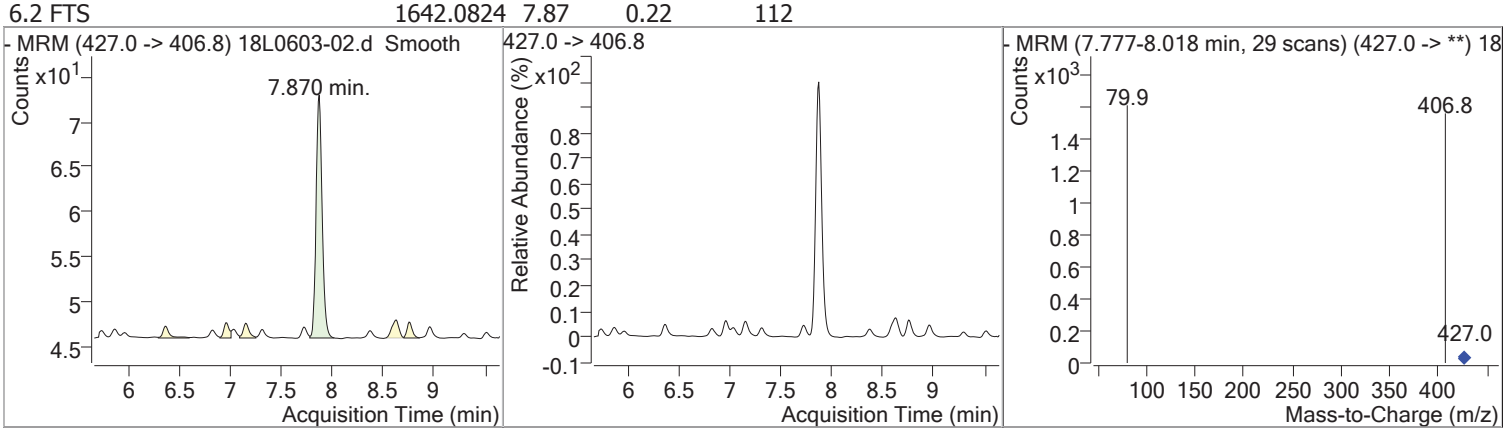
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	488.3167	7.32	0.38	774 (m)				



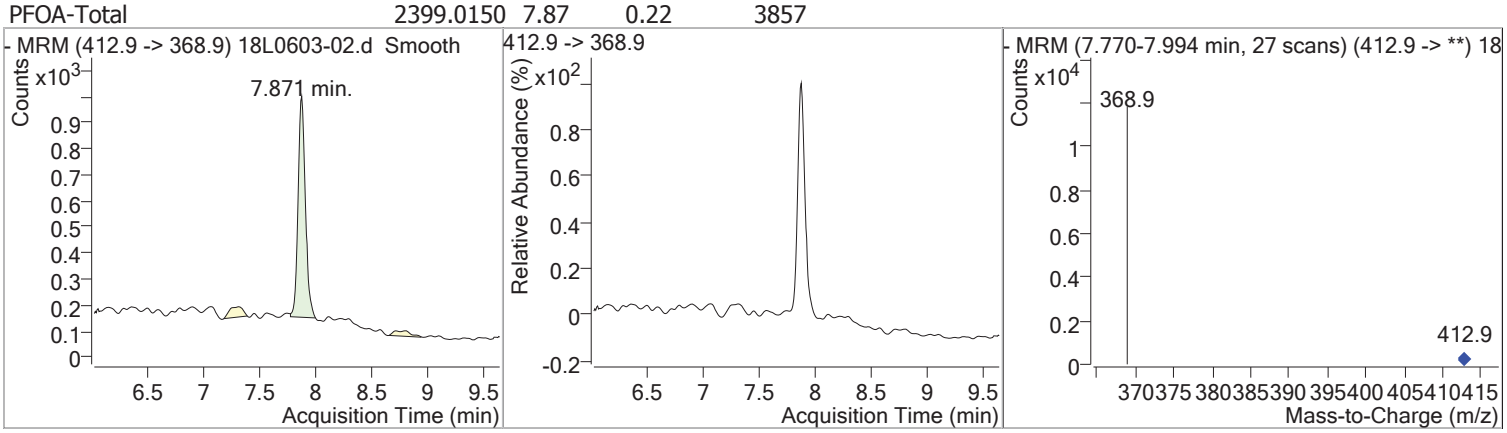
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	250.8644	7.64	0.30	427 (m)				



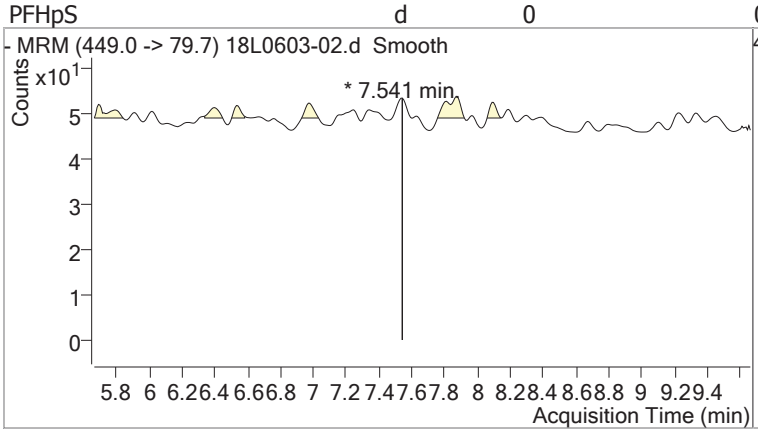
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	1642.0824	7.87	0.22	112				

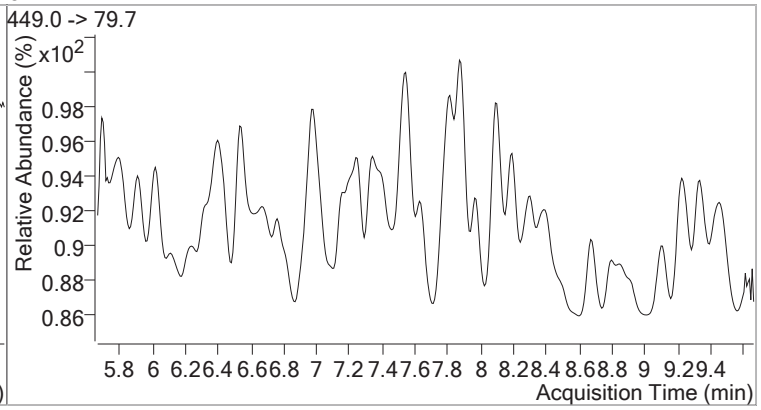


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	2399.0150	7.87	0.22	3857				

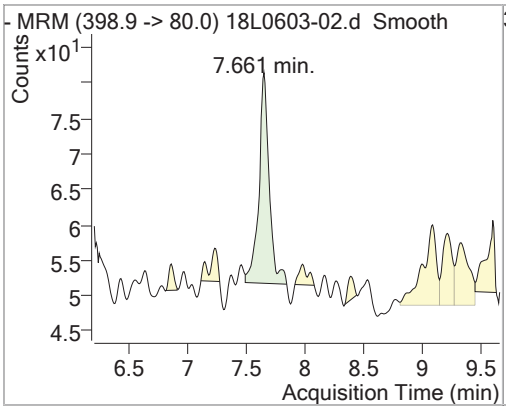


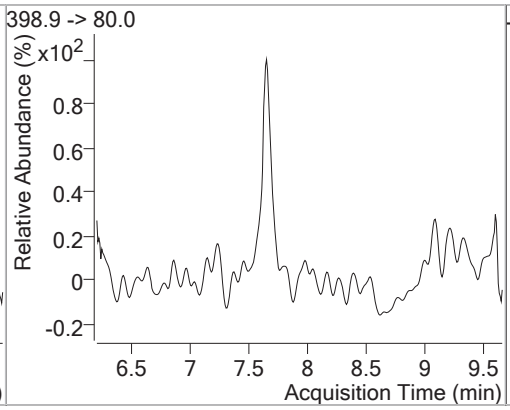
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	d	0		0				

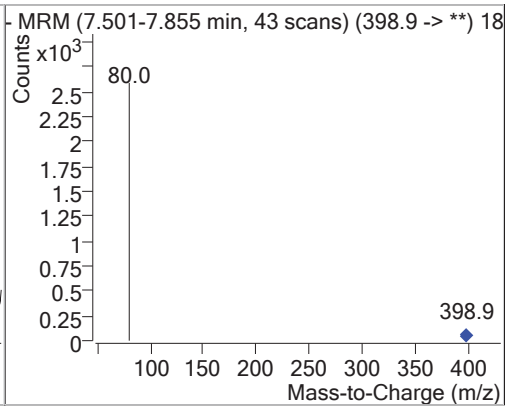




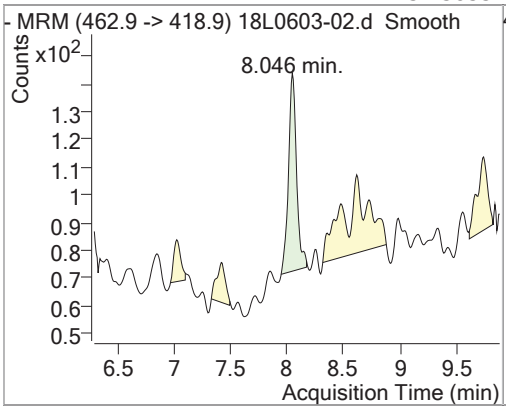
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	665.7387	7.66	-0.02	181				

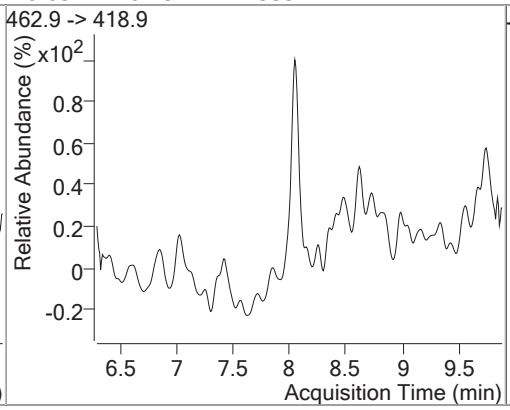


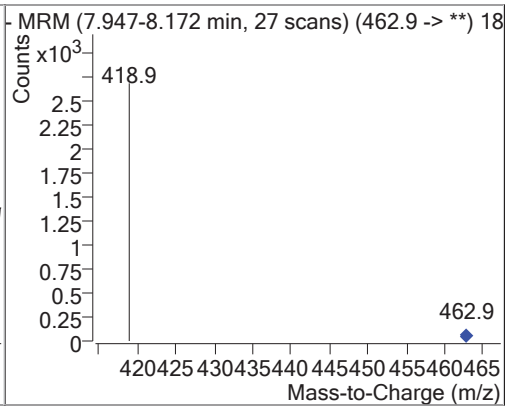




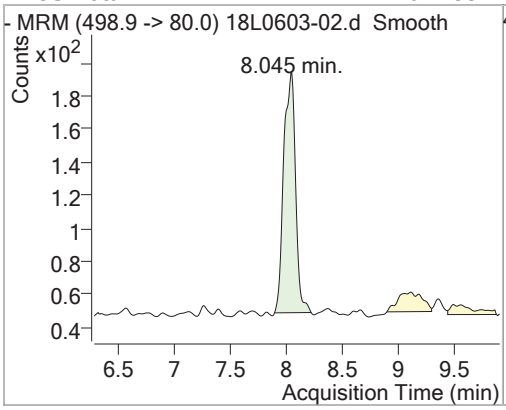
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	434.3855	8.05	0.15	355				

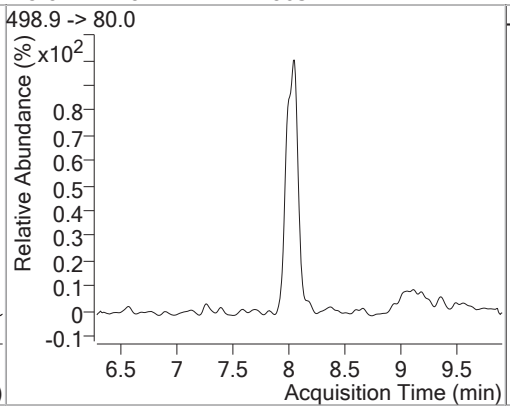


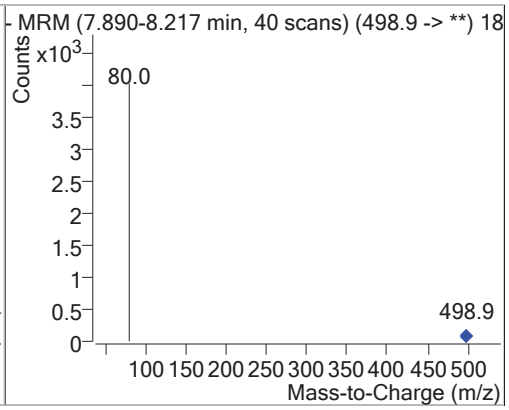




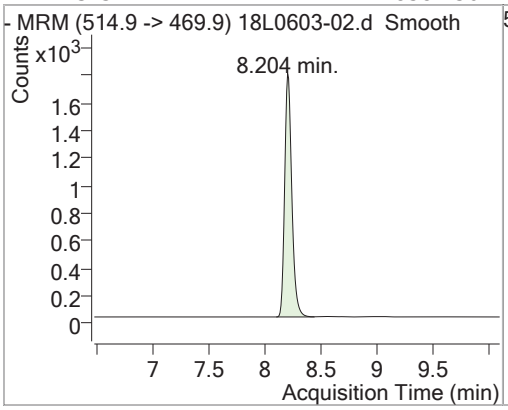
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	2622.9944	8.04	0.14	1065				

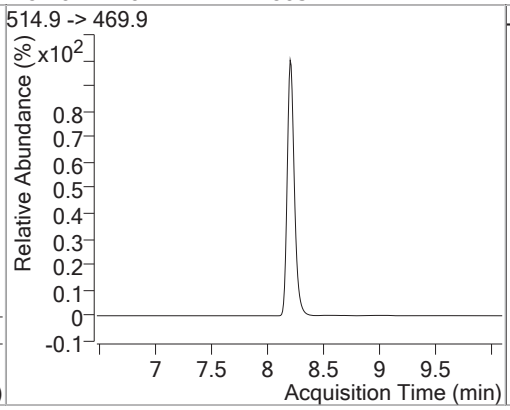


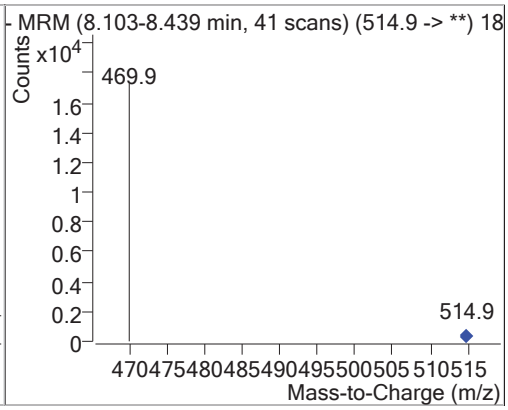




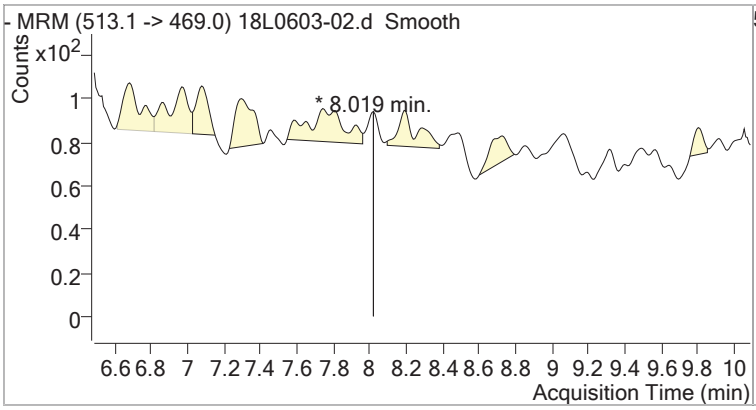
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	8582.5672	8.20	0.11	7803				

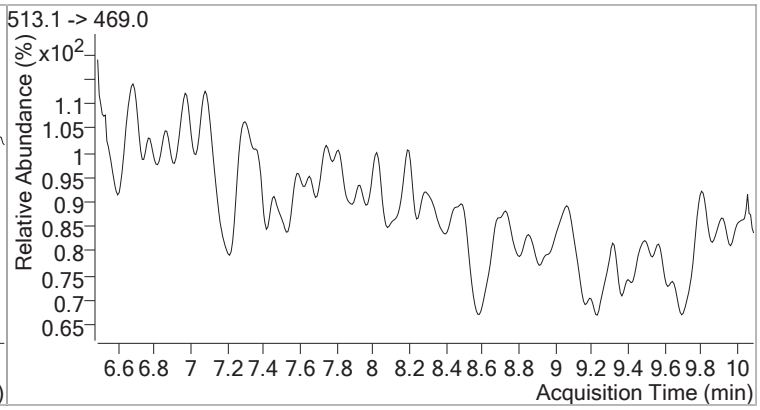




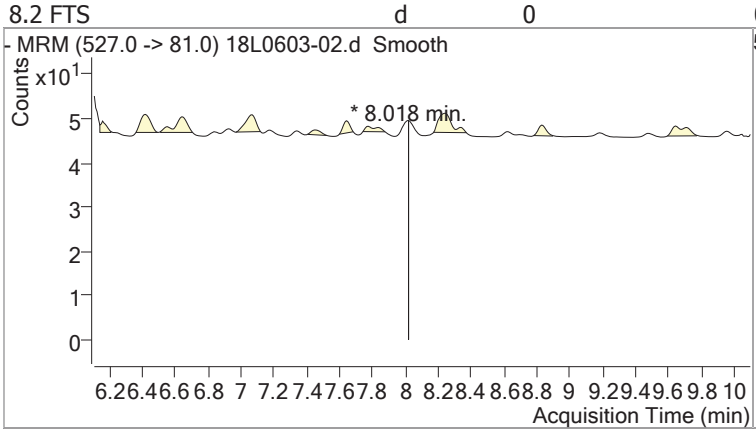


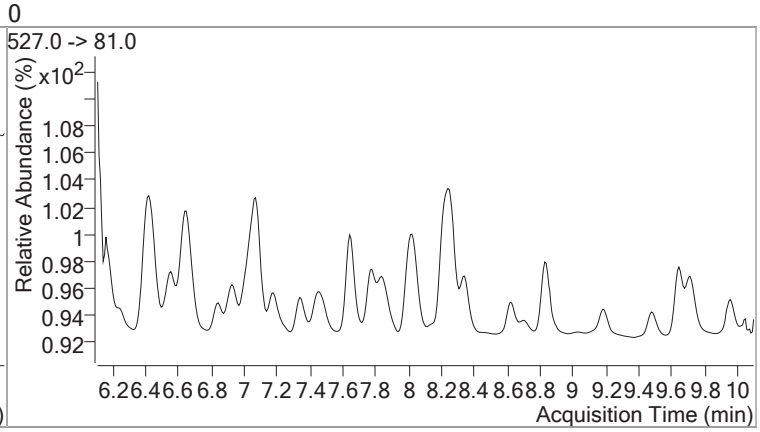
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	d	0		0				



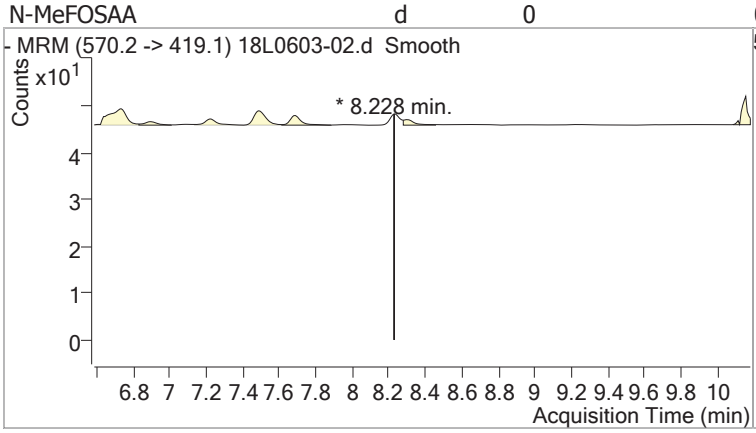


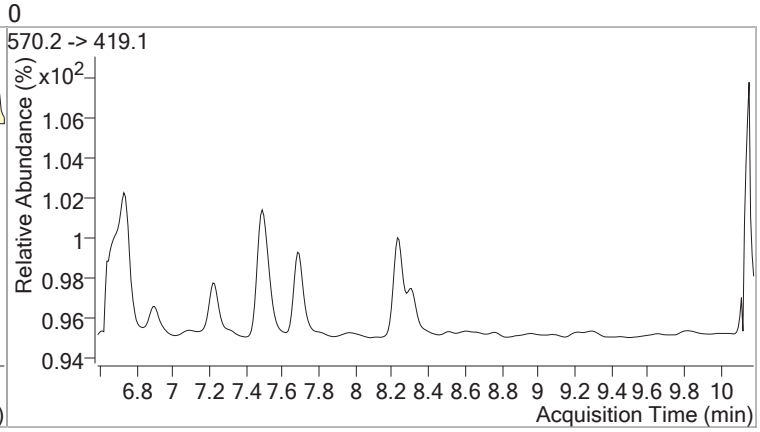
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	d	0		0				



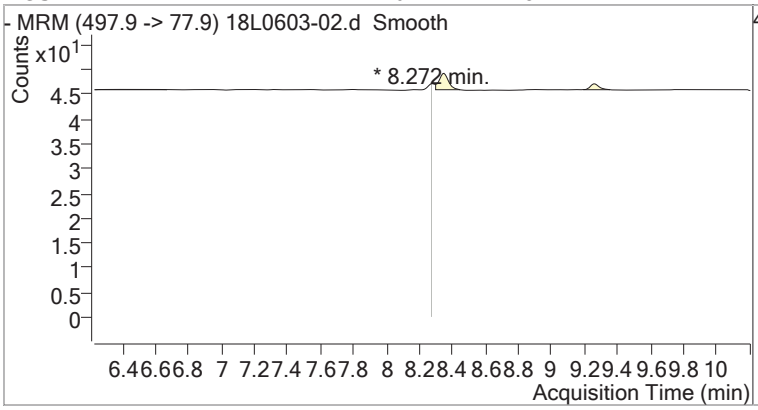


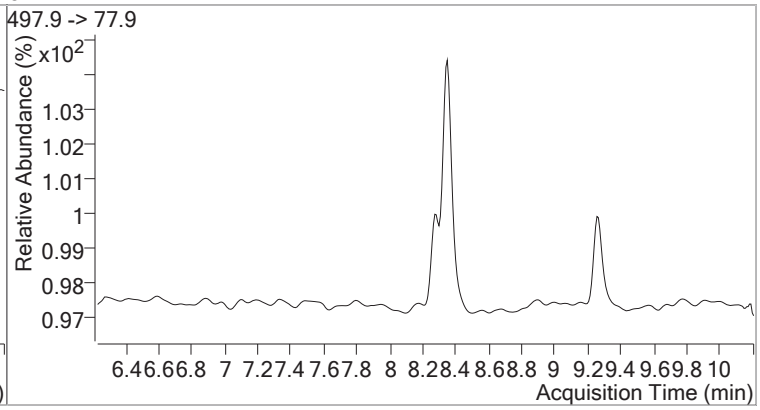
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	d	0		0				



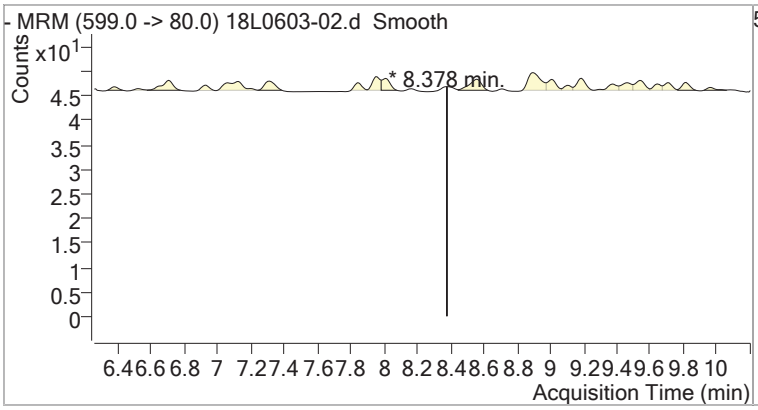


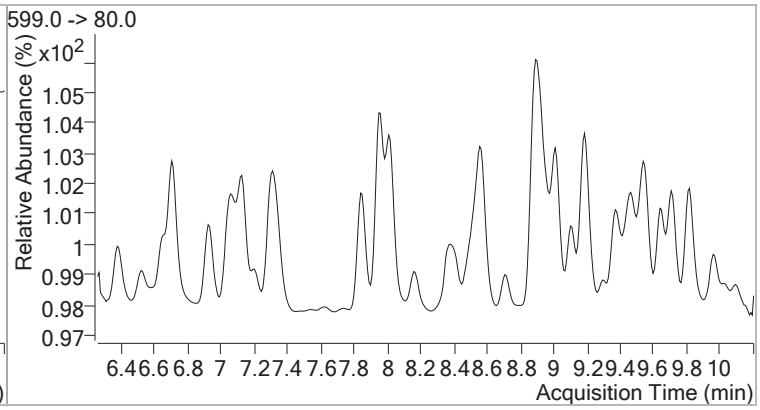
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	d	0		0				



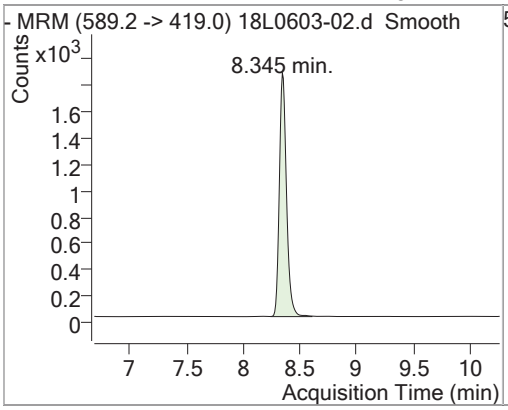


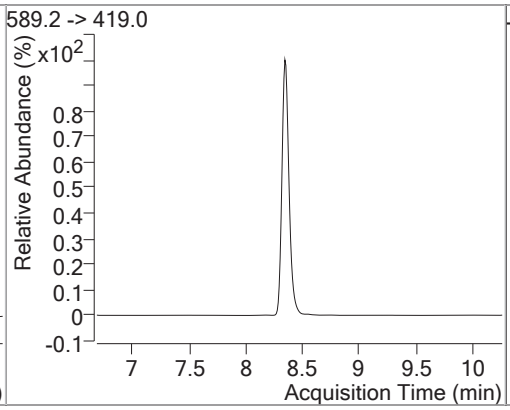
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	d	0		0				

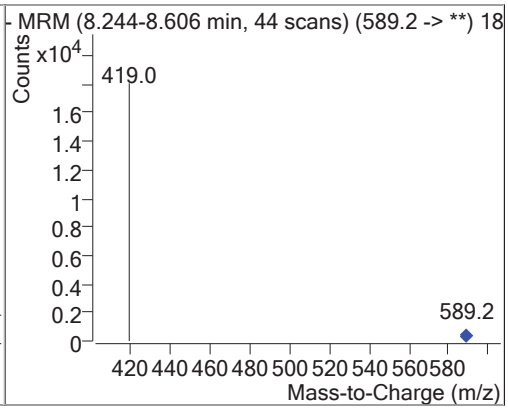




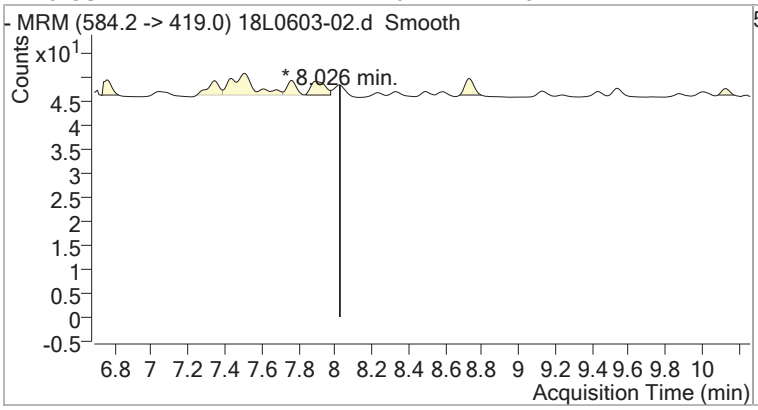
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	32272.2348	8.35	0.08	8091				

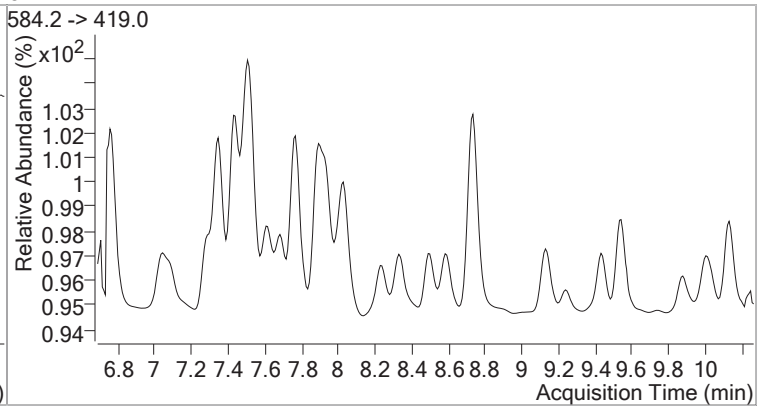




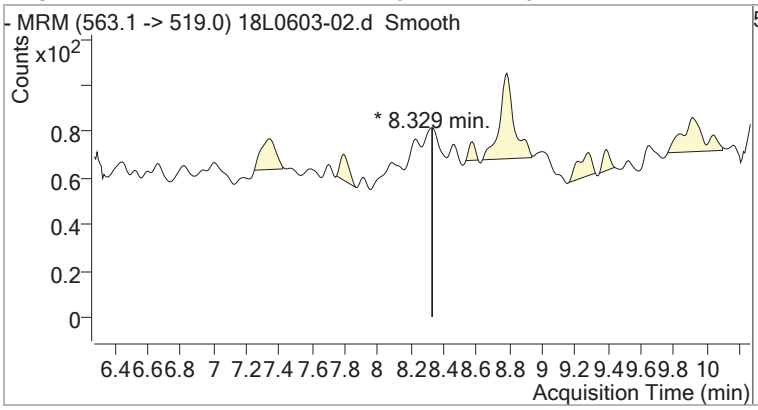


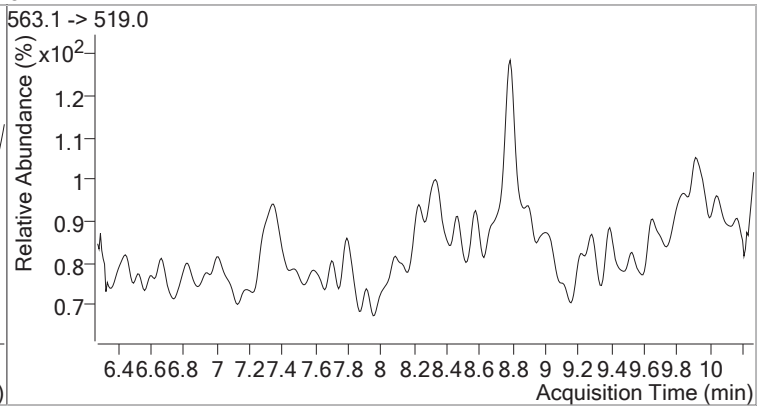
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	d	0		0				



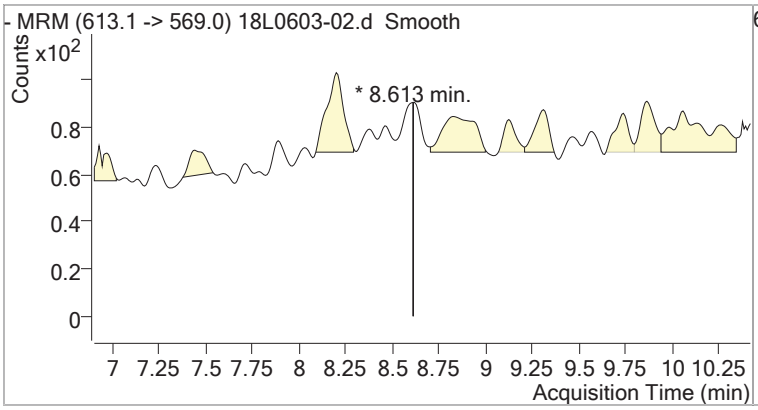


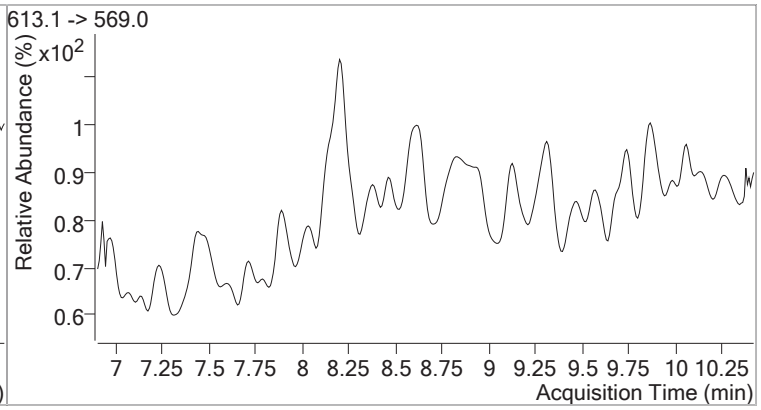
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	d	0		0				



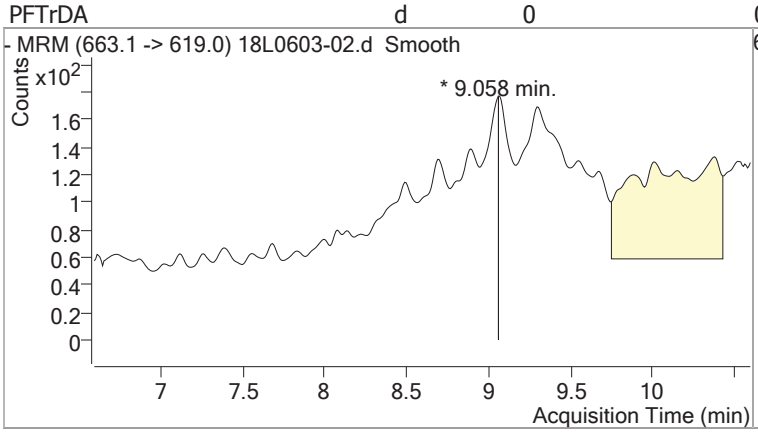


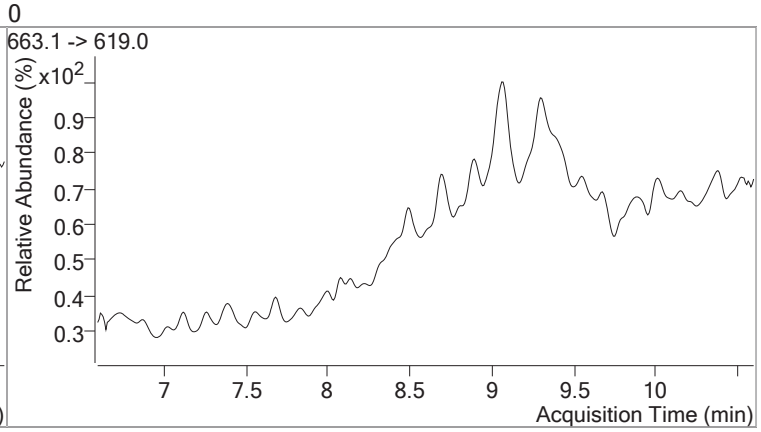
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	d	0		0				



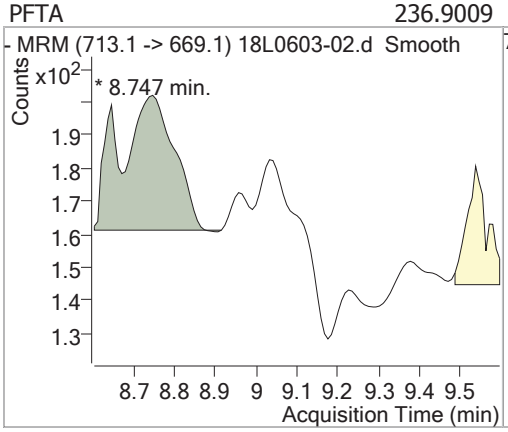


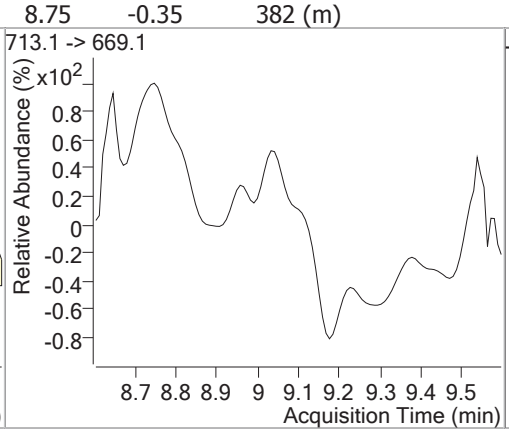
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	d	0		0				

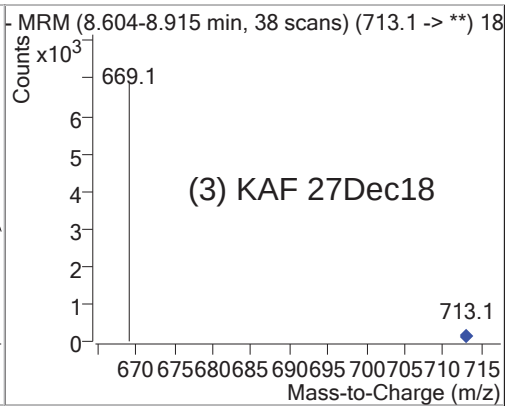




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	236.9009	8.75	-0.35	382 (m)				







1 - FORM I
ANALYSIS DATA SHEET

MW-18 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-03	File ID:	lims export files full-008
Sampled:	12/12/18 12:50	Prepared:	12/24/18 08:00	Analyzed:	12/27/18 11:59
Solids:		Preparation:	EPA 537	Dilution:	1
Initial/Final:	250 mL / 1 mL				
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
Instrument:	HPLC1				

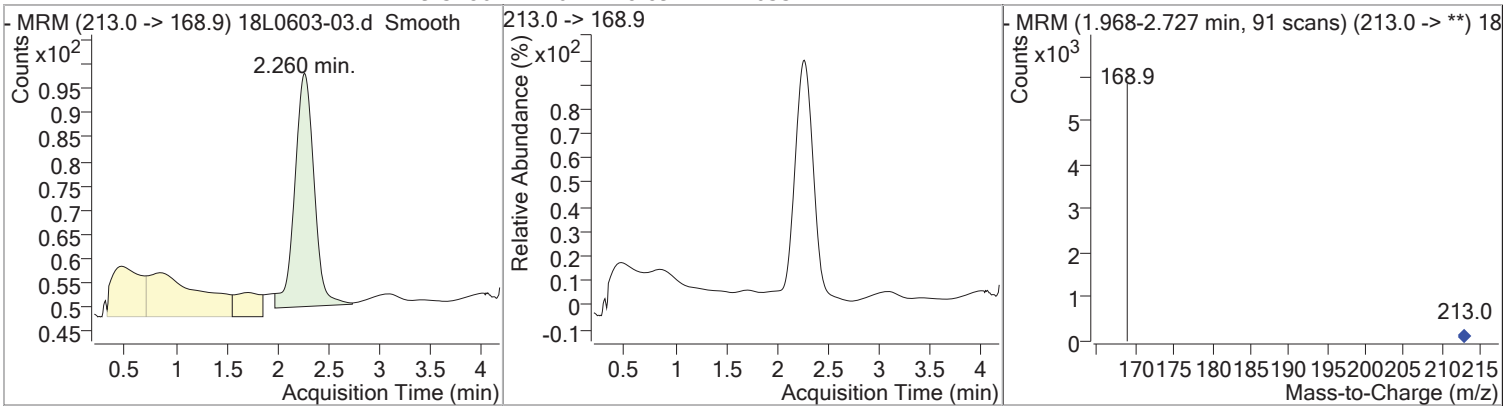
CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)	11	2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)	11	2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)	12	2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)	2.9	2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)		2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)	9.8	2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)		2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)		2.0	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	5.4	2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)	79	2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	20	2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)	4.4	2.0	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		2.0	2.0	
	NMeFOSAA		2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		2.0	2.0	
	NEtFOSAA		2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		2.0	2.0	

Data File	18L0603-03.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/27/2018 11:59:57 AM
Sample Name	18L0603-03	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File	122018.m	Comment	
Tune File		Tune Date	
Batch Name	1.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

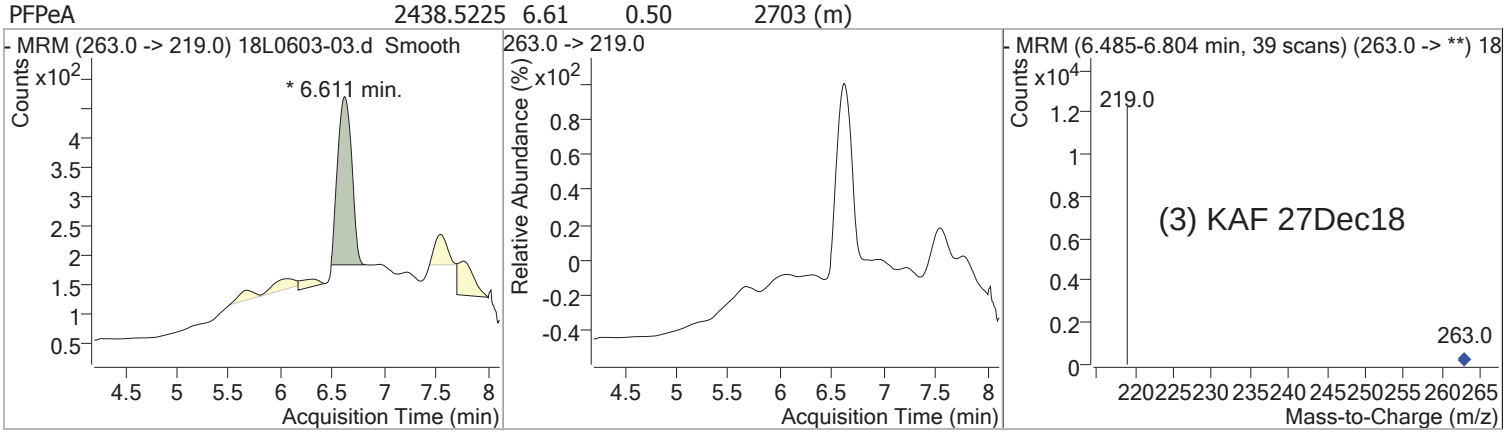
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	7.887	416.9 -> 371.9	15719	10000.0000	pg/ml		0.237
M PFOS C13	8.062	502.9 -> 80.0	10569	28700.0000	pg/ml		0.161
M d3-N-MeFOSAA	8.287	573.2 -> 419.0	12776	40000.0000	pg/ml		0.102
System Monitoring Compounds							
S PFHxA C13	7.333	314.9 -> 269.9	20014	10357.2899	pg/ml		0.396
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 103.57%			
S PFDA C13	8.221	514.9 -> 469.9	8869	8707.1901	pg/ml		0.128
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 87.07%			
S d5-N-MeFOSAA	8.353	589.2 -> 419.0	9533	34108.9261	pg/ml		0.086
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 85.27%			
Target Compounds							QValue
T PFBA	2.260	213.0 -> 168.9	635	719.5486	pg/ml		100
T PFPeA	6.611	263.0 -> 219.0	2703	2438.5225	pg/ml	m	100
T PFBS	6.922	298.9 -> 80.0	921	2693.4974	pg/ml		100
T PFHxA	7.334	312.9 -> 268.9	4669	2629.1420	pg/ml	m	100
T PFHpA	7.661	362.9 -> 319.0	5521	2898.8251	pg/ml		100
T 6.2 FTS	7.626	427.0 -> 406.8	0	0.0000	pg/ml	md	1
T PFOA-Total	7.888	412.9 -> 368.9	35620	19775.8426	pg/ml		100
T PFHpS	7.811	449.0 -> 79.7	0	0.0000	pg/ml	md	1
T PFHxS-Total	7.678	398.9 -> 80.0	422	1358.9278	pg/ml		100
T PFNA	8.063	462.9 -> 418.9	996	1087.7755	pg/ml		100
T PFOS-Total	8.053	498.9 -> 80.0	2314	4979.4651	pg/ml		100
T PFDA	8.145	513.1 -> 469.0	0	0.0000	pg/ml	md	1
T 8.2 FTS	8.195	527.0 -> 81.0	0	0.0000	pg/ml	md	1
T N-MeFOSAA	8.262	570.2 -> 419.1	0	0.0000	pg/ml	md	1
T FOSA	8.340	497.9 -> 77.9	0	0.0000	pg/ml	md	1
T PFDS	8.235	599.0 -> 80.0	0	0.0000	pg/ml	md	1
T N-EtFOSAA	8.371	584.2 -> 419.0	0	0.0000	pg/ml	md	1
T PFUnA	8.220	563.1 -> 519.0	0	0.0000	pg/ml	md	1
T PFDoA	8.529	613.1 -> 569.0	0	0.0000	pg/ml	md	1
T PFTrDA	8.688	663.1 -> 619.0	0	0.0000	pg/ml	md	1
T PFTA	9.293	713.1 -> 669.1	0	0.0000	pg/ml	md	1

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

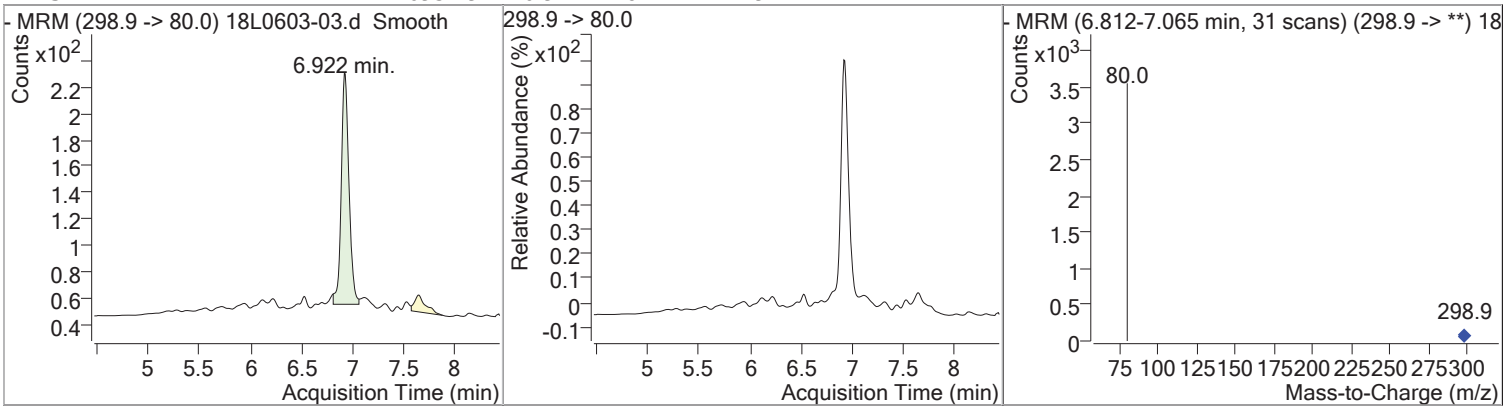
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	719.5486	2.26	0.09	635				



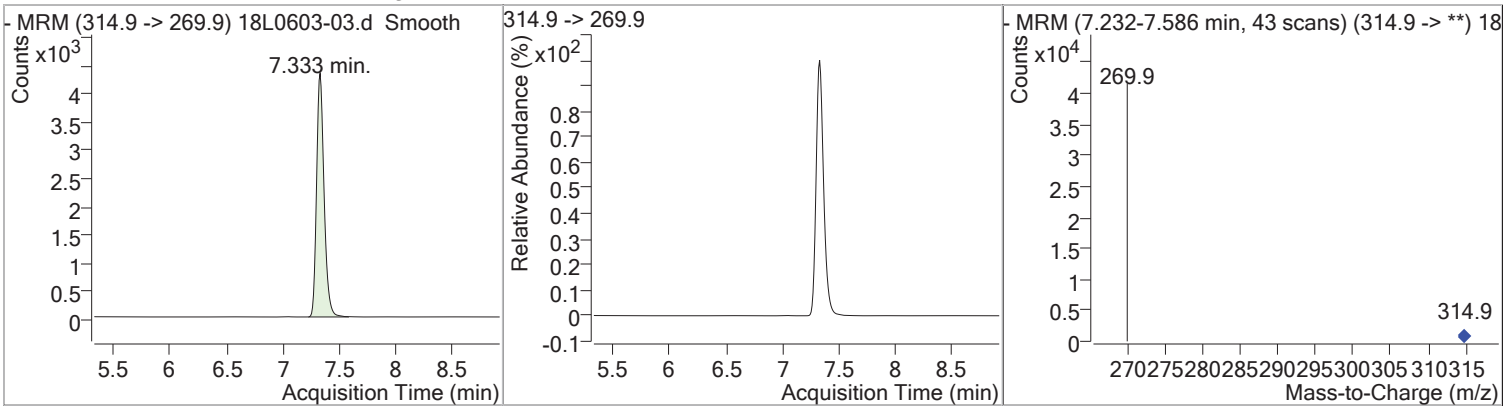
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	2438.5225	6.61	0.50	2703 (m)				



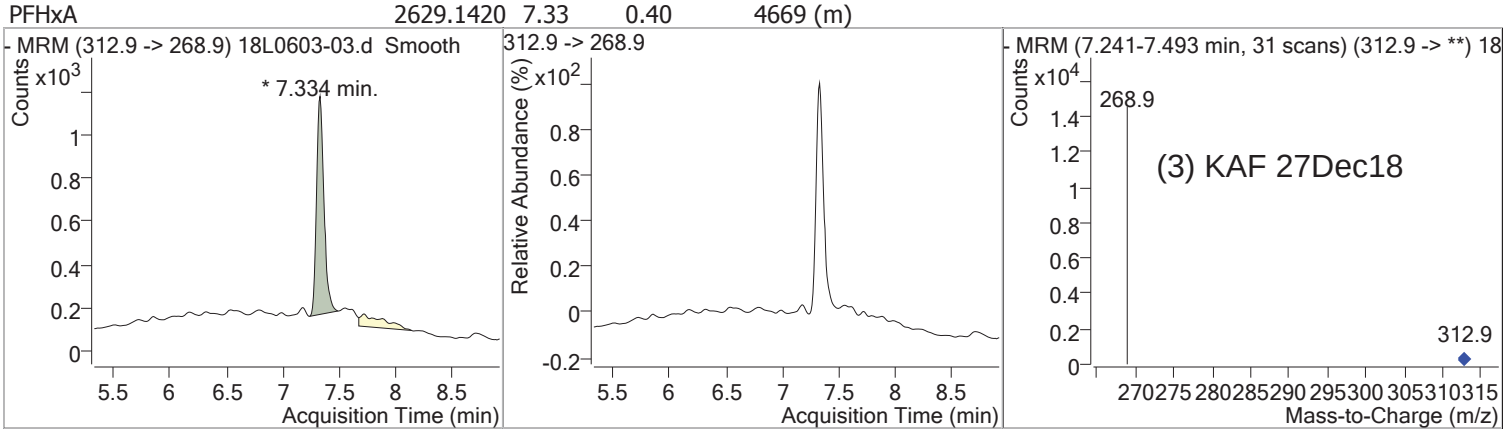
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	2693.4974	6.92	0.47	921				



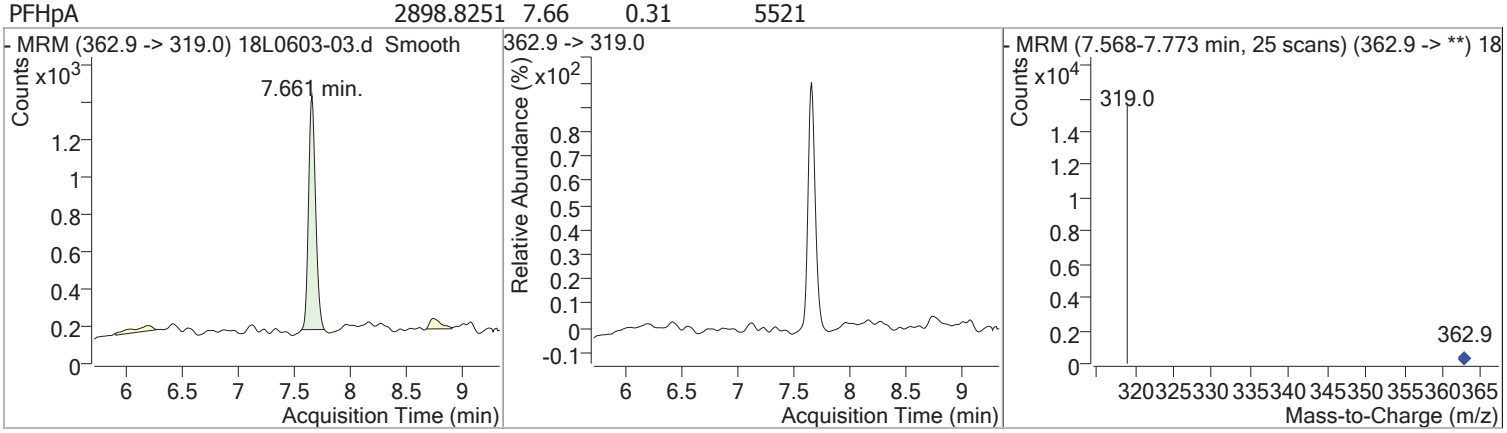
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	10357.2899	7.33	0.40	20014				



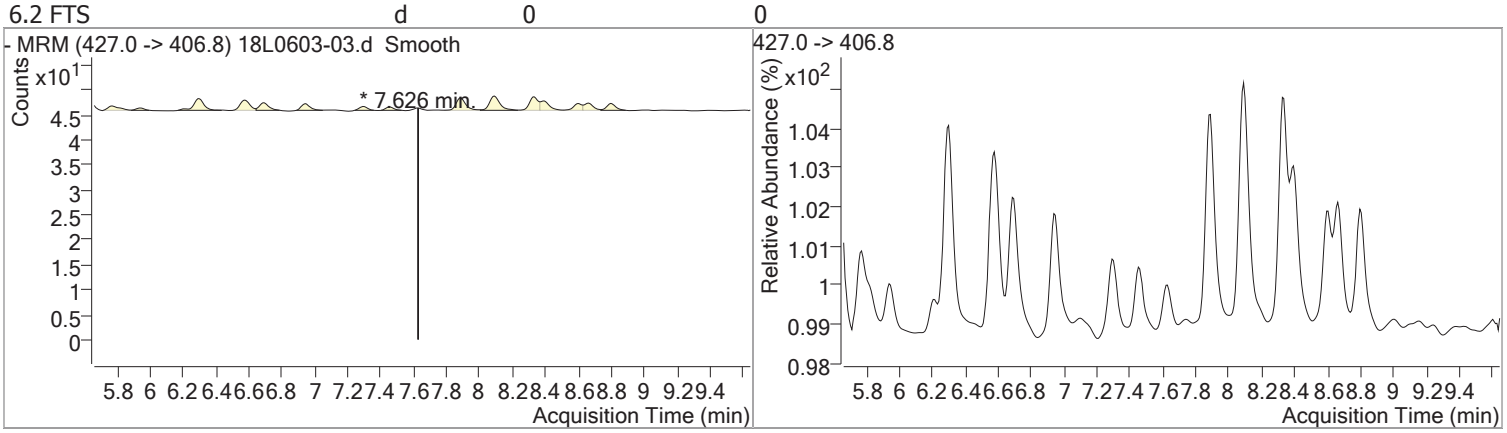
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	2629.1420	7.33	0.40	4669 (m)				



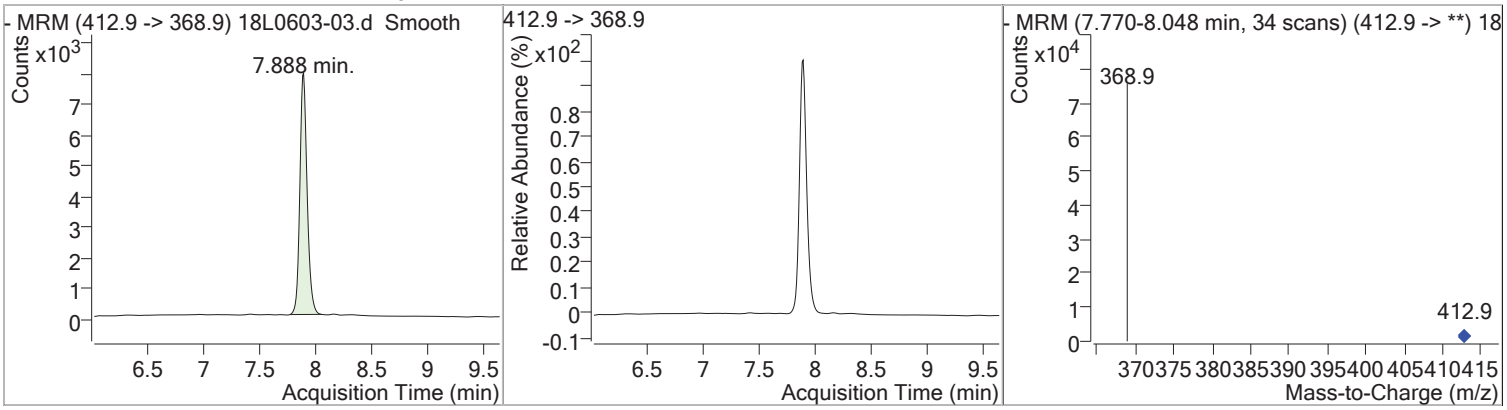
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	2898.8251	7.66	0.31	5521				



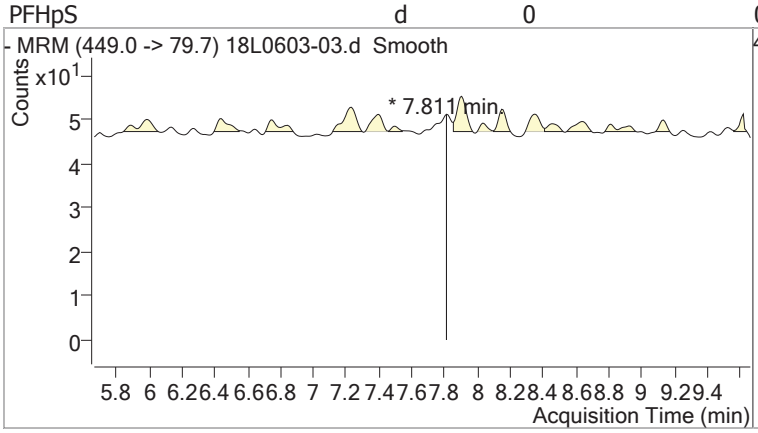
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	d	0		0				

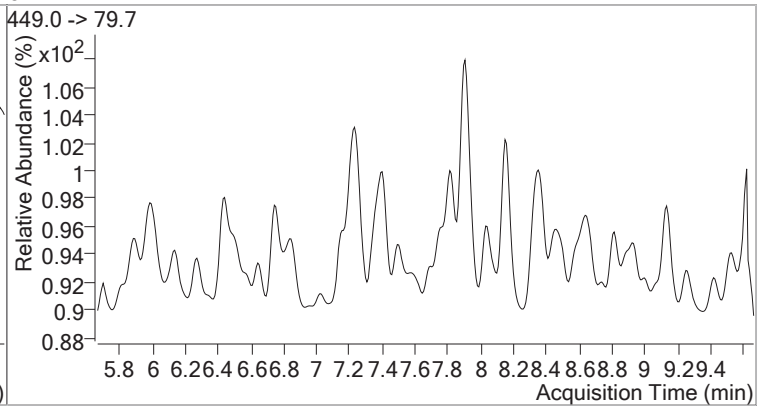


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	19775.8426	7.89	0.24	35620				

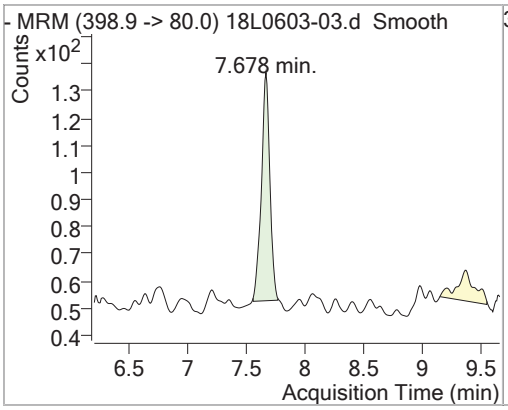


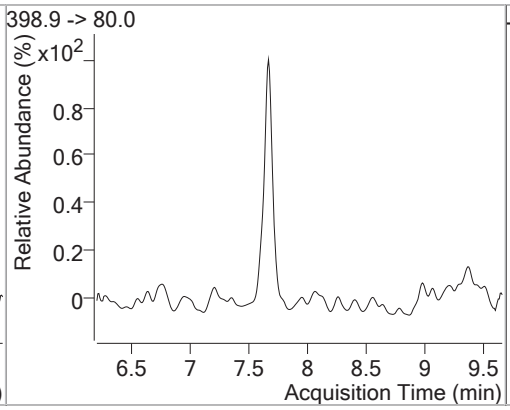
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	d	0		0				

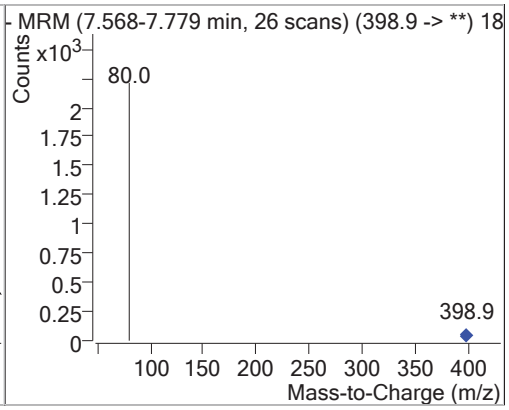




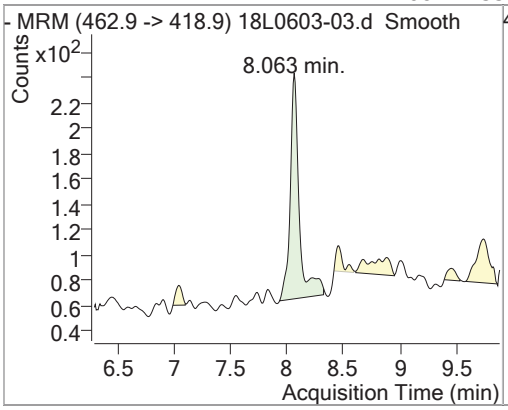
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	1358.9278	7.68	0.00	422				

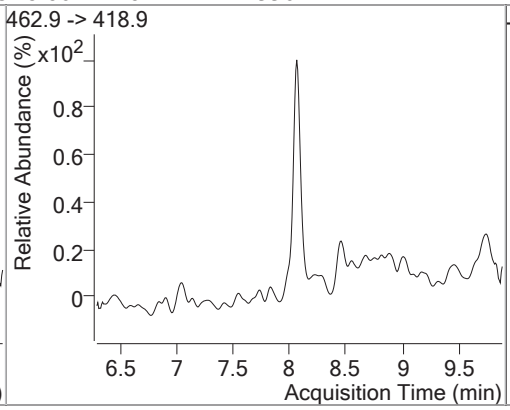


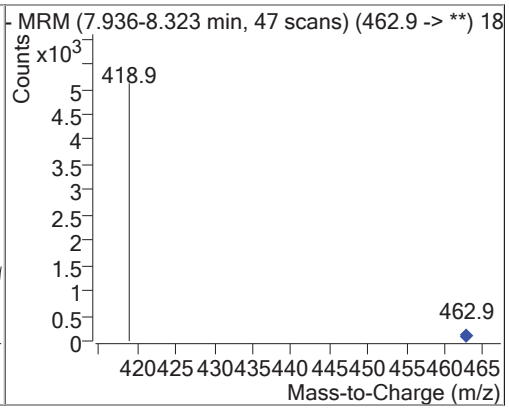




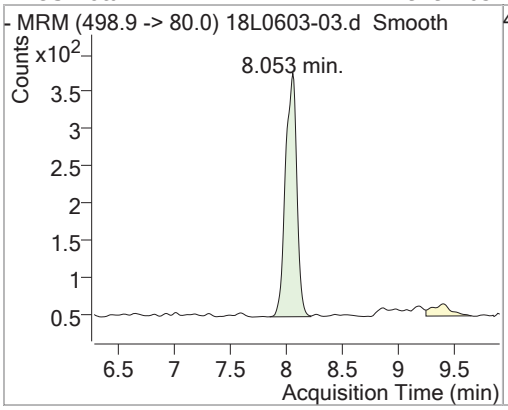
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	1087.7755	8.06	0.17	996				

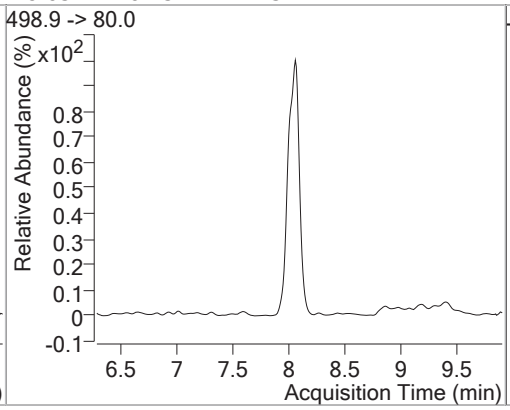


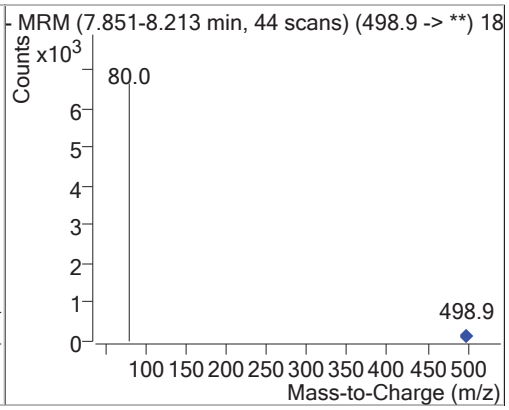




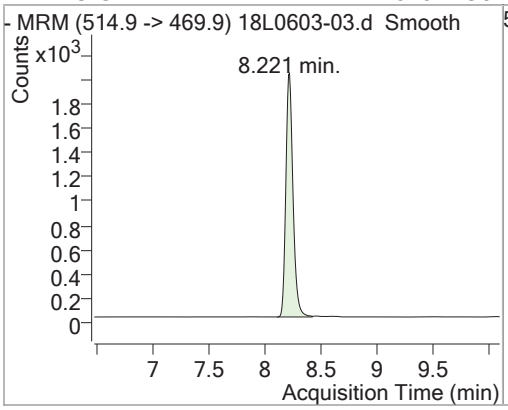
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	4979.4651	8.05	0.15	2314				

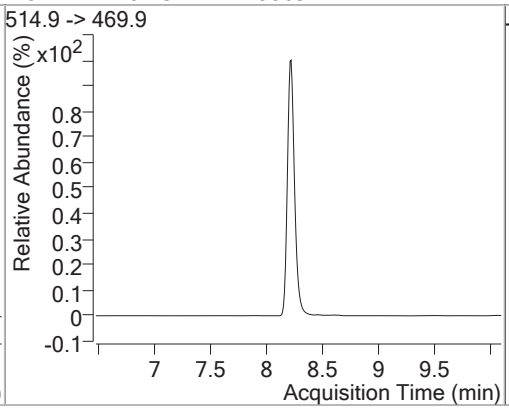


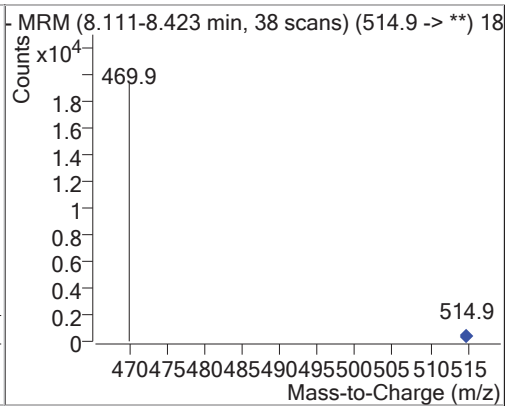




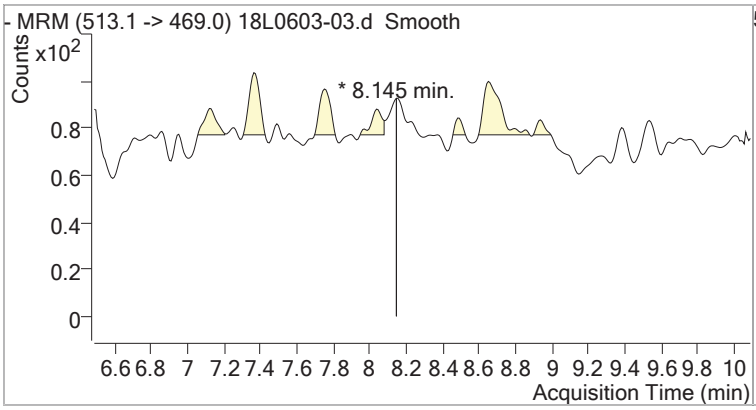
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	8707.1901	8.22	0.13	8869				

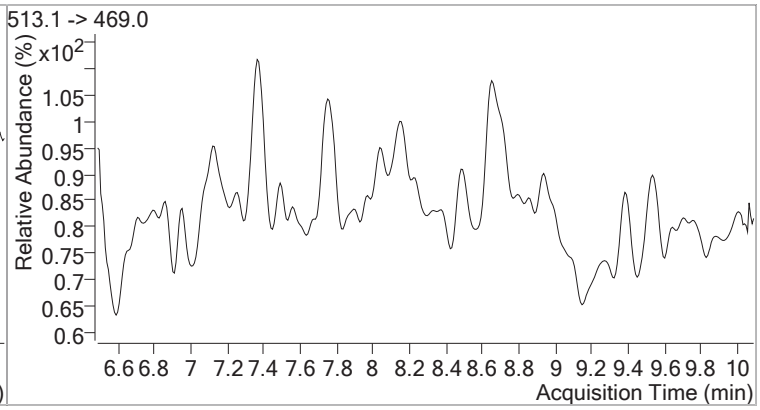




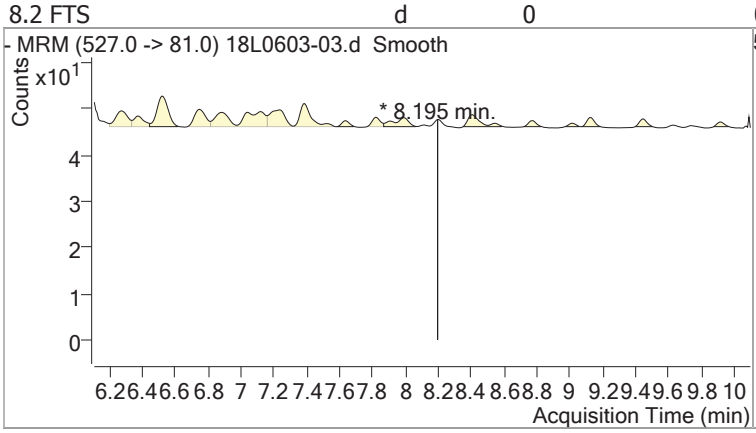


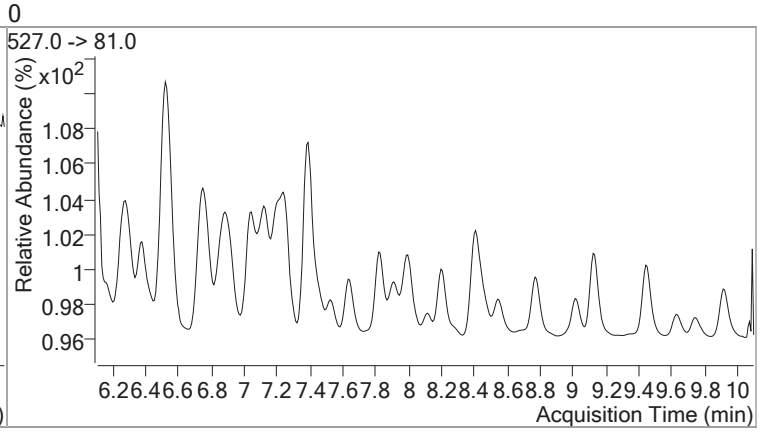
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	d	0		0				



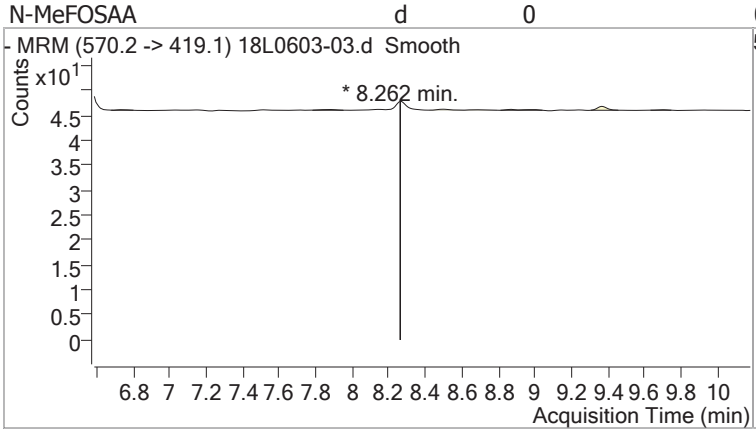


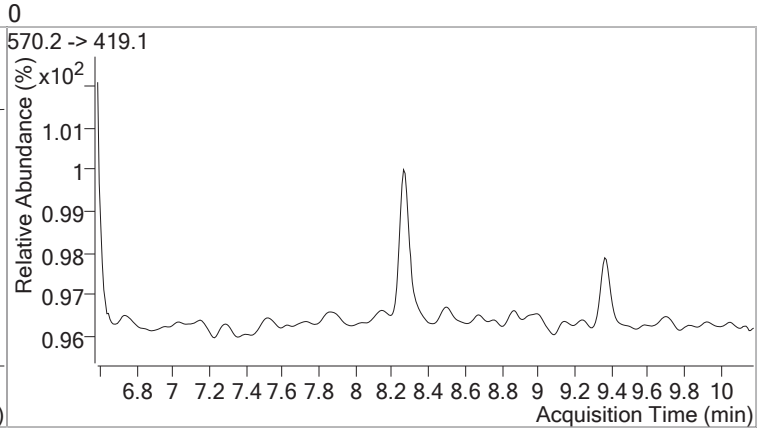
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	d	0		0				



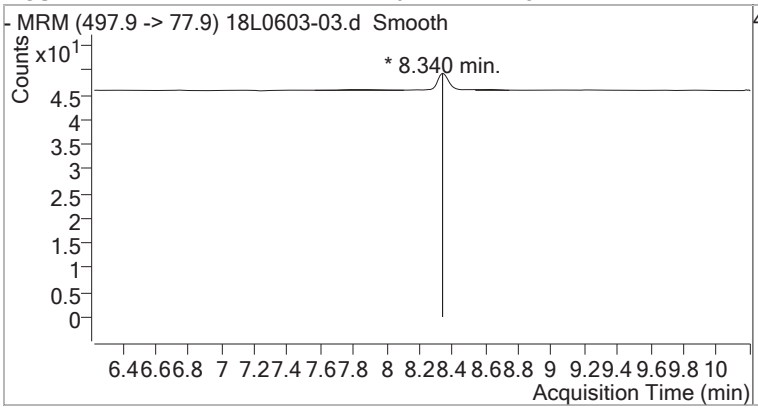


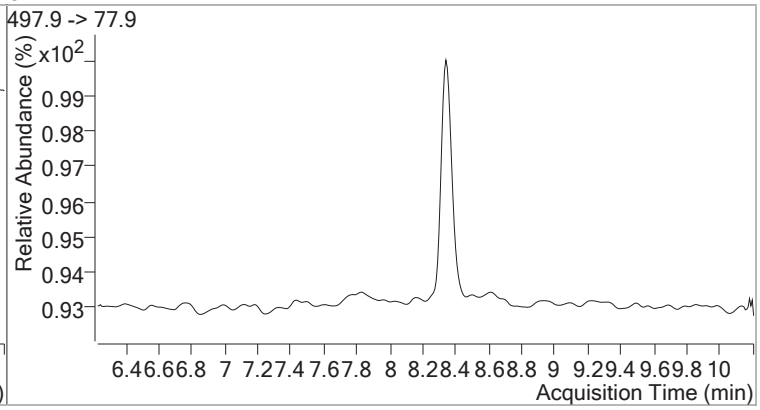
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	d	0		0				



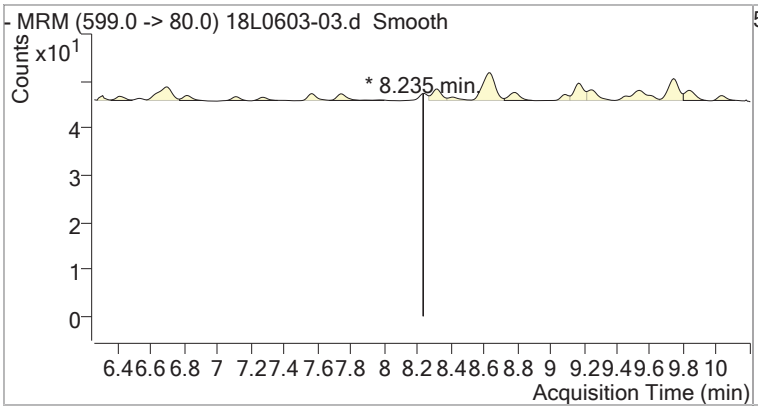


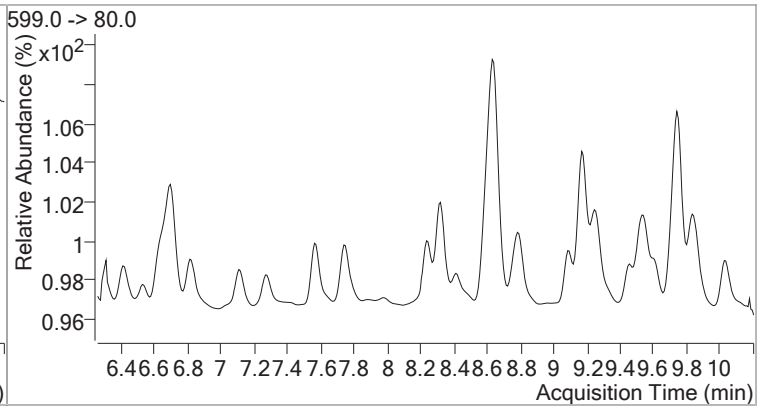
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	d	0		0				



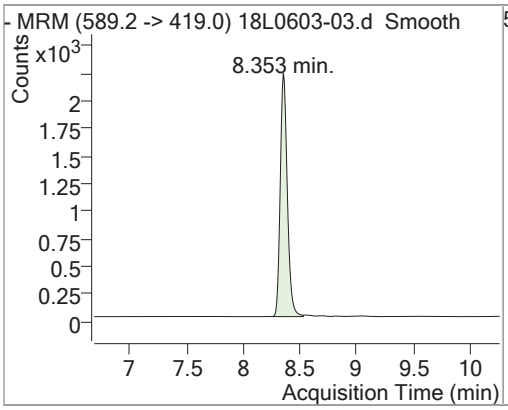


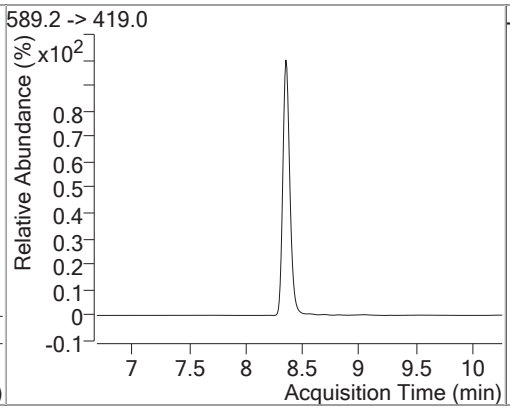
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	d	0		0				

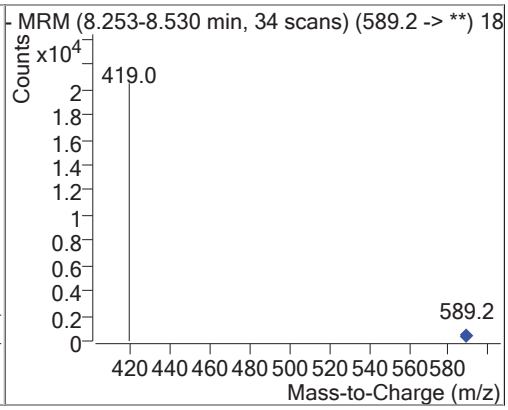




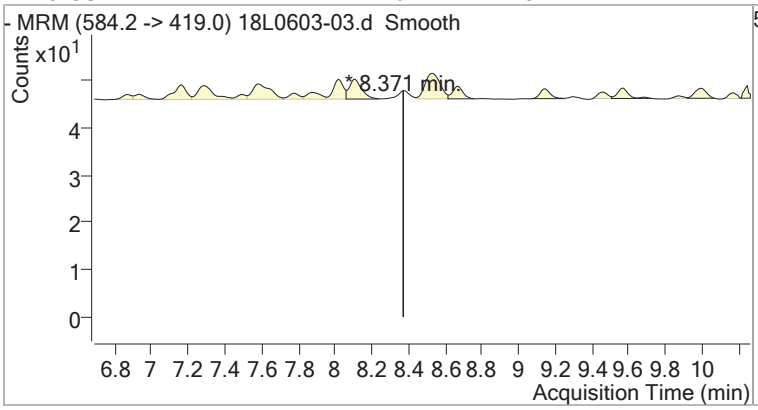
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	34108.9261	8.35	0.09	9533				

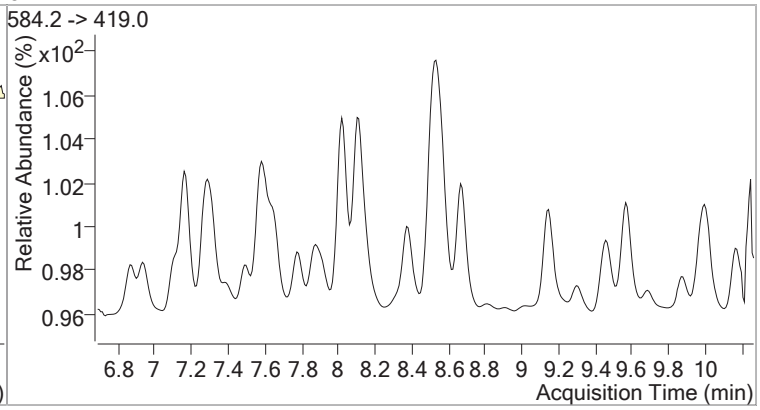




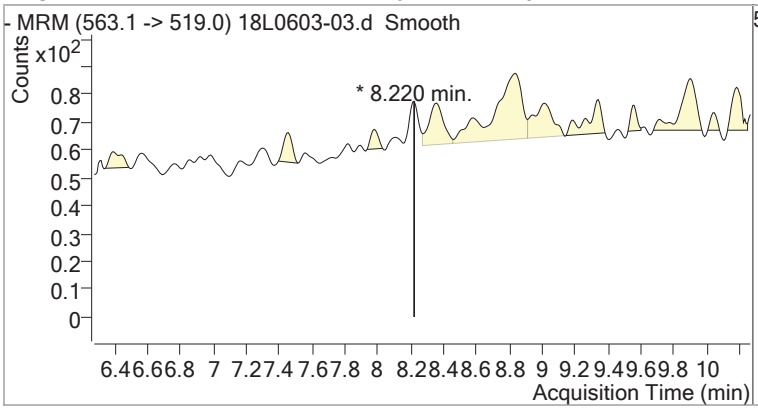


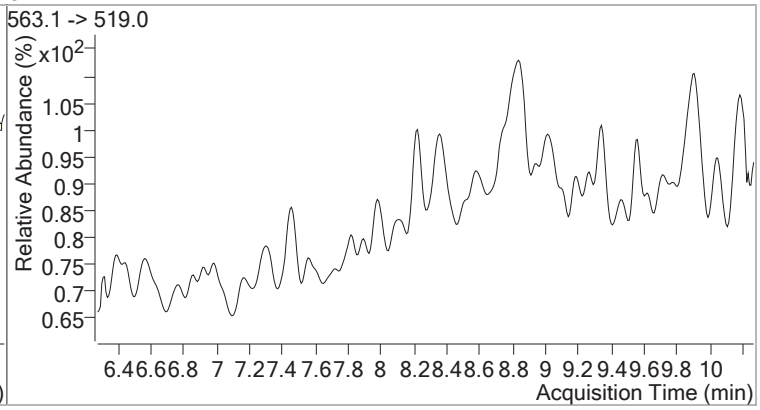
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	d	0		0				



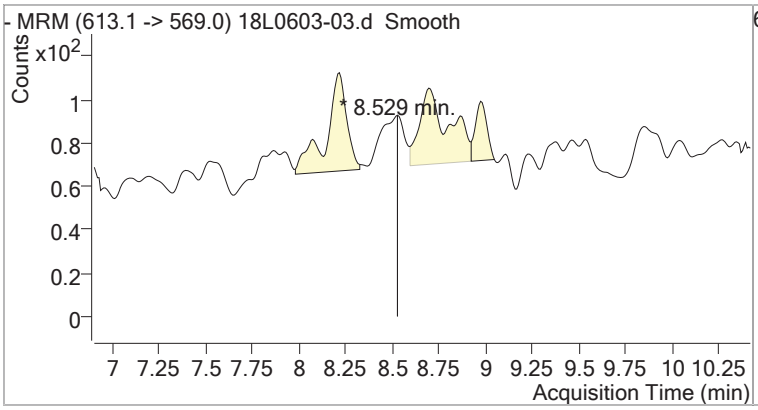


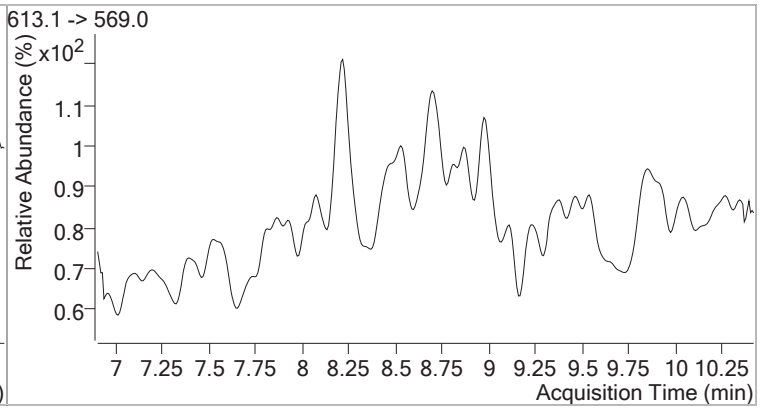
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	d	0		0				



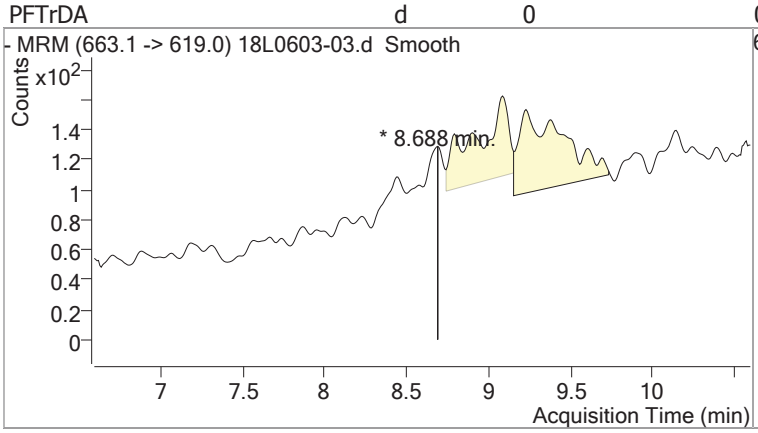


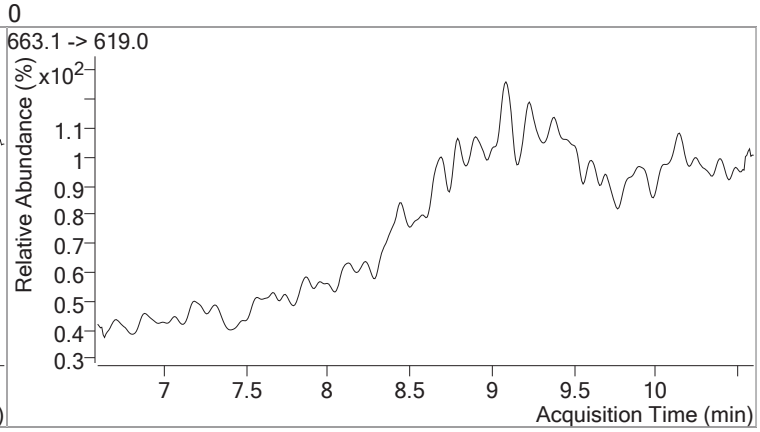
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	d	0		0				



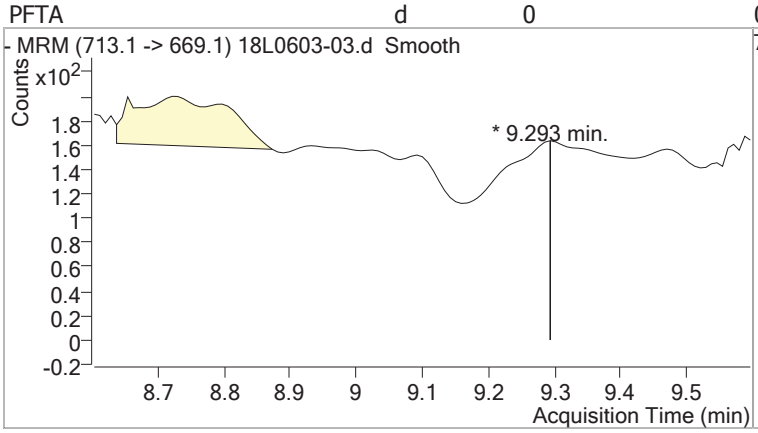


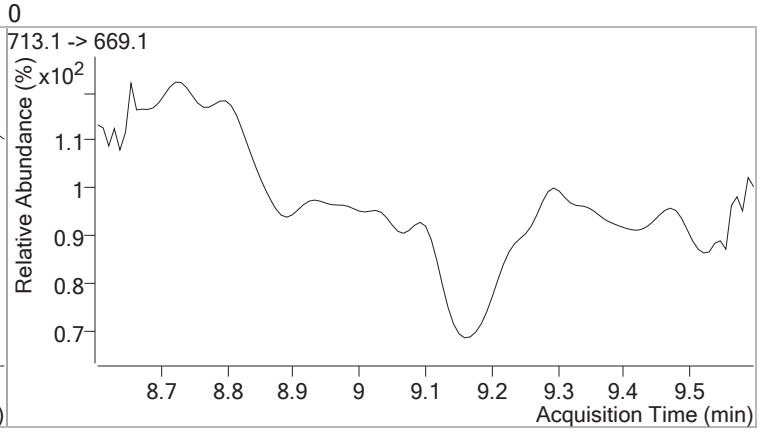
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	d	0		0				





Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	d	0		0				





1 - FORM I
ANALYSIS DATA SHEET

MW-12 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-04	File ID:	lims export files full-009
Sampled:	12/12/18 14:10	Prepared:	12/24/18 08:00	Analyzed:	12/27/18 12:12
Solids:		Preparation:	EPA 537	Dilution:	1
Initial/Final:	250 mL / 1 mL				
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
Instrument:	HPLC1				

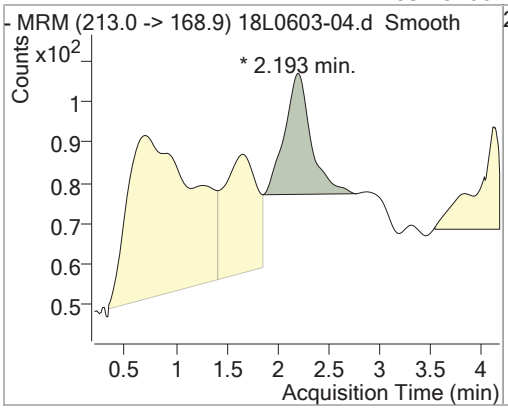
CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)	3.6	2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)		2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)	3.3	2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)		2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)		2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)	5.6	2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)		2.0	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	4.8	2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)	3.1	2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)		2.0	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		2.0	2.0	
	NMeFOSAA		2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		2.0	2.0	
	NEtFOSAA		2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		2.0	2.0	

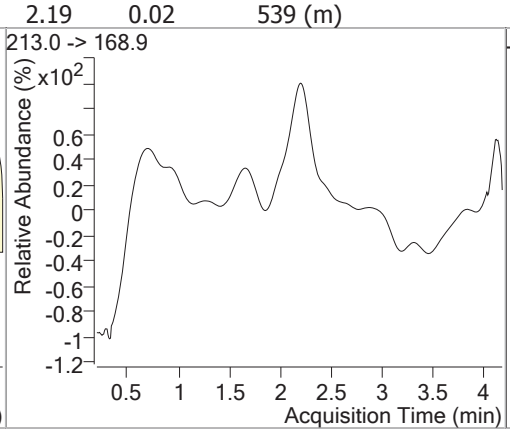
Data File	18L0603-04.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/27/2018 12:12:43 PM
Sample Name	18L0603-04	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File	122018.m	Comment	
Tune File		Tune Date	
Batch Name	1.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

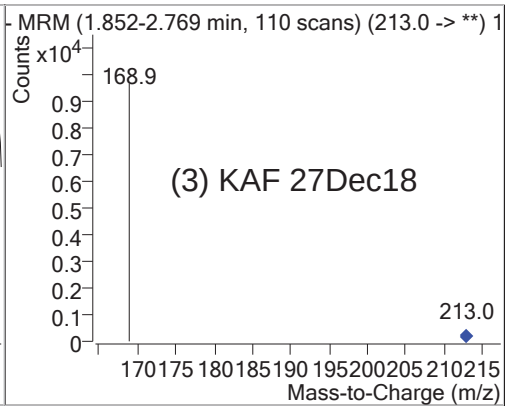
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	7.870	416.9 -> 371.9	11508	10000.0000	pg/ml		0.220
M PFOS C13	8.053	502.9 -> 80.0	8810	28700.0000	pg/ml		0.153
M d3-N-MeFOSAA	8.287	573.2 -> 419.0	10206	40000.0000	pg/ml		0.102
System Monitoring Compounds							
S PFHxA C13	7.308	314.9 -> 269.9	11085	7835.4826	pg/ml		0.371
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 78.35%			
S PFDA C13	8.213	514.9 -> 469.9	7073	9485.2889	pg/ml		0.119
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 94.85%			
S d5-N-MeFOSAA	8.353	589.2 -> 419.0	8013	35893.6820	pg/ml		0.086
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 89.73%			
Target Compounds							QValue
T PFBA	2.193	213.0 -> 168.9	539	834.8766	pg/ml	m	100
T PFPeA	6.040	263.0 -> 219.0	0	0.0000	pg/ml	md	1
T PFBS	6.930	298.9 -> 80.0	256	896.5174	pg/ml	m	100
T PFHxA	7.308	312.9 -> 268.9	0	0.0000	pg/ml	md	1
T PFHpA	7.266	362.9 -> 319.0	0	0.0000	pg/ml	md	1
T 6.2 FTS	7.862	427.0 -> 406.8	91	1401.1183	pg/ml	m	100
T PFOA-Total	7.871	412.9 -> 368.9	1025	777.2089	pg/ml	m	100
T PFHpS	7.735	449.0 -> 79.7	0	0.0000	pg/ml	md	1
T PFHxS-Total	7.669	398.9 -> 80.0	312	1204.4647	pg/ml		100
T PFNA	7.129	462.9 -> 418.9	0	0.0000	pg/ml	md	1
T PFOS-Total	8.028	498.9 -> 80.0	0	0.0000	pg/ml	md	1
T PFDA	8.053	513.1 -> 469.0	0	0.0000	pg/ml	md	1
T 8.2 FTS	8.153	527.0 -> 81.0	19	267.4872	pg/ml		100
T N-MeFOSAA	8.136	570.2 -> 419.1	0	0.0000	pg/ml	md	1
T FOSA	8.979	497.9 -> 77.9	0	0.0000	pg/ml	md	1
T PFDS	8.302	599.0 -> 80.0	0	0.0000	pg/ml	md	1
T N-EtFOSAA	8.328	584.2 -> 419.0	0	0.0000	pg/ml	md	1
T PFUnA	8.640	563.1 -> 519.0	0	0.0000	pg/ml	md	1
T PFDoA	8.504	613.1 -> 569.0	0	0.0000	pg/ml	md	1
T PFTrDA	9.268	663.1 -> 619.0	0	0.0000	pg/ml	md	1
T PFTA	8.781	713.1 -> 669.1	0	0.0000	pg/ml	md	1

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

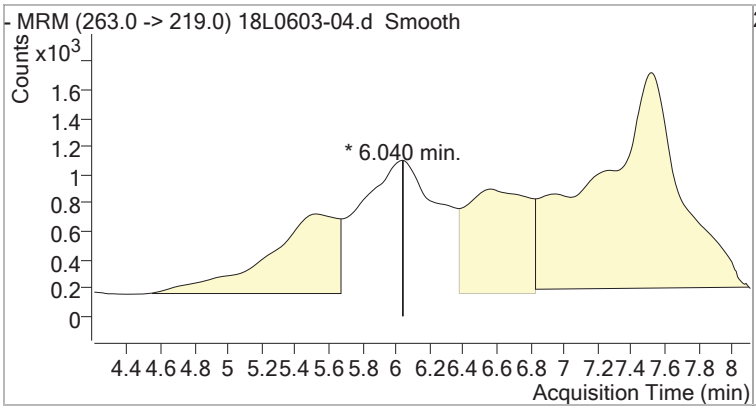
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	834.8766	2.19	0.02	539 (m)				

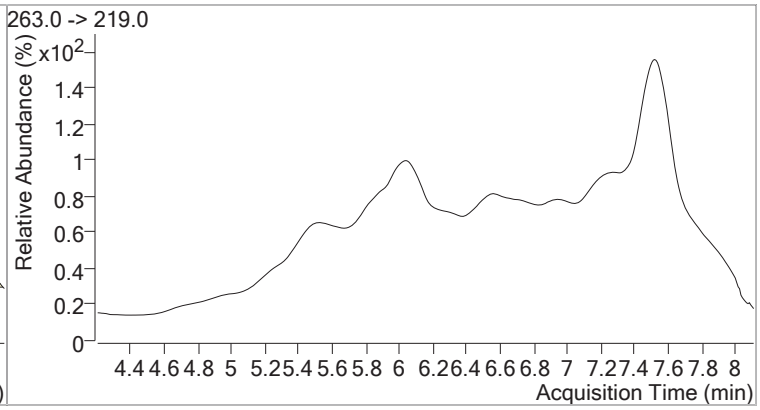




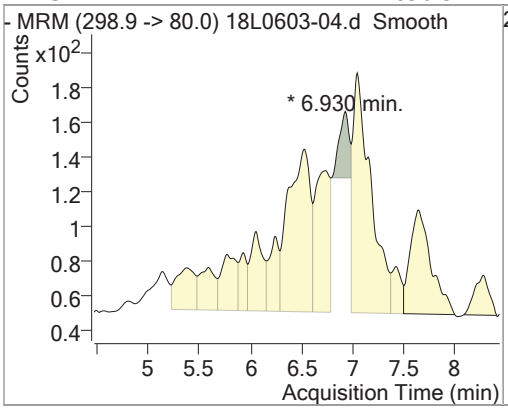


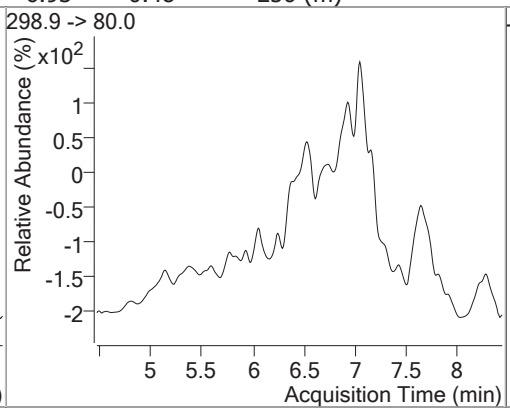
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	d	0		0				

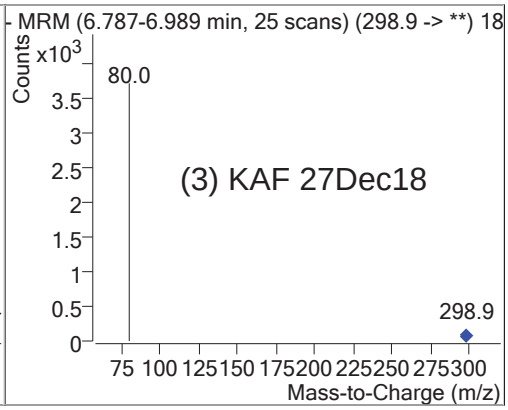




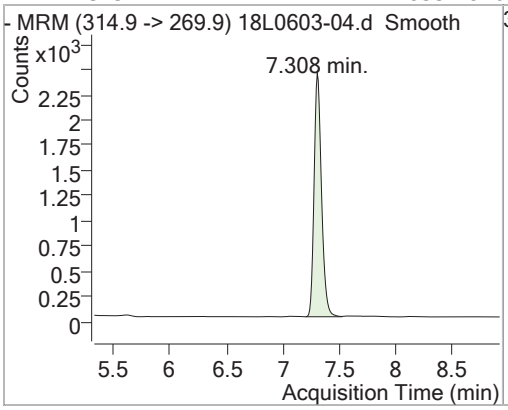
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	896.5174	6.93	0.48	256 (m)				

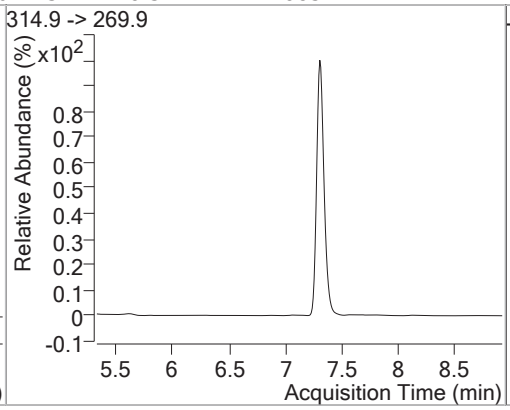


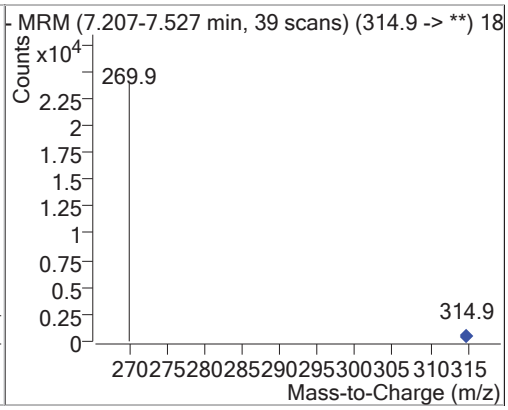




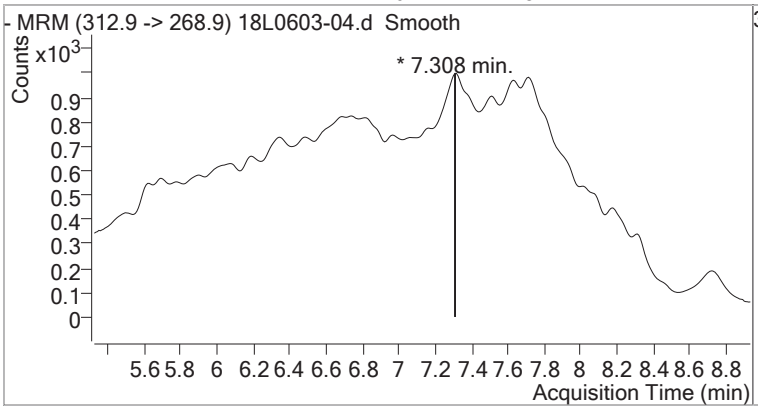
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	7835.4826	7.31	0.37	11085				

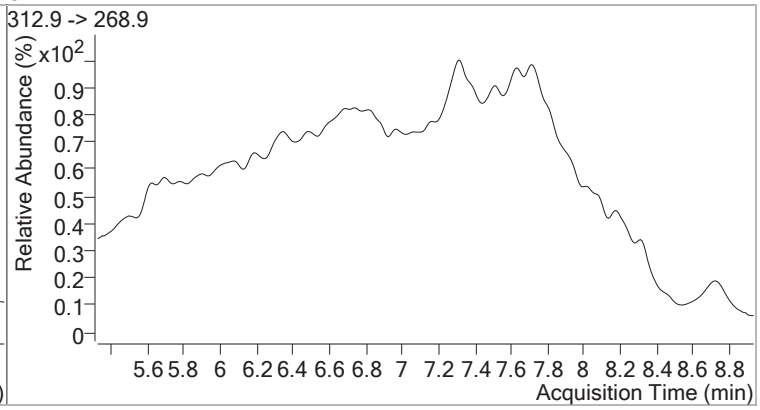




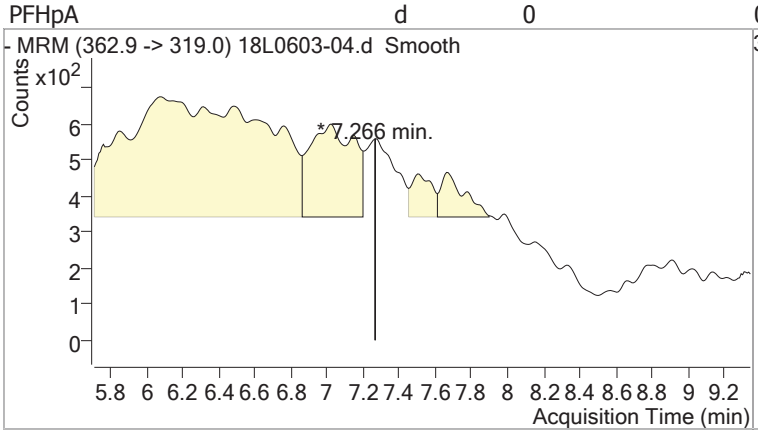


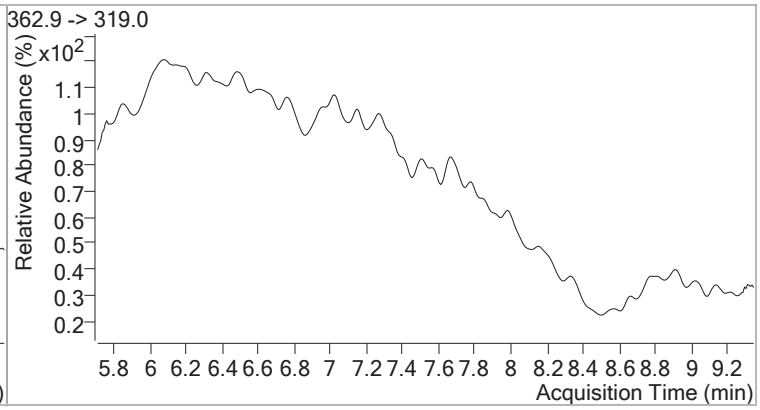
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	d	0		0				



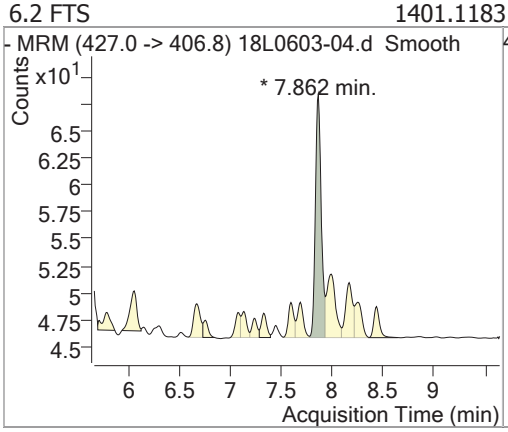


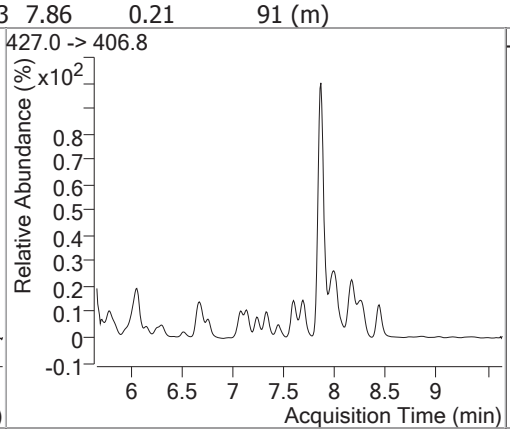
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	d	0		0				

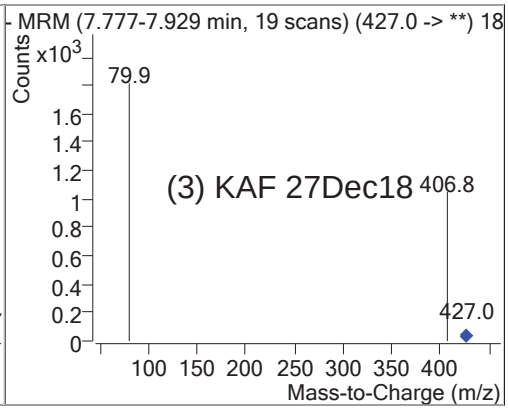




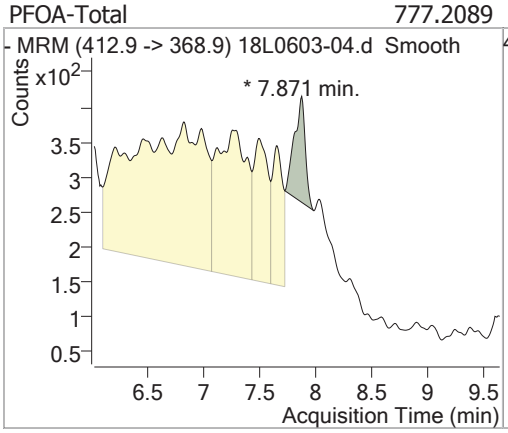
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	1401.1183	7.86	0.21	91 (m)				

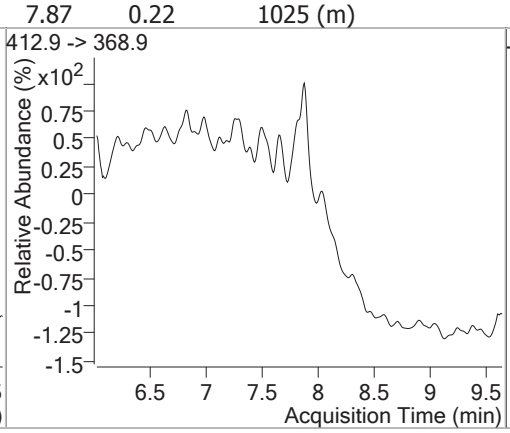


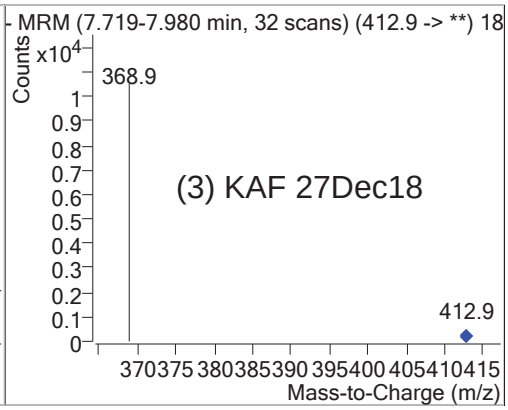




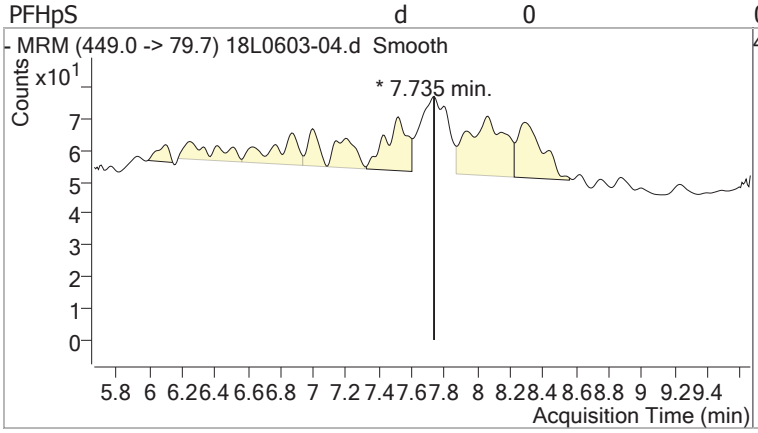
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	777.2089	7.87	0.22	1025 (m)				

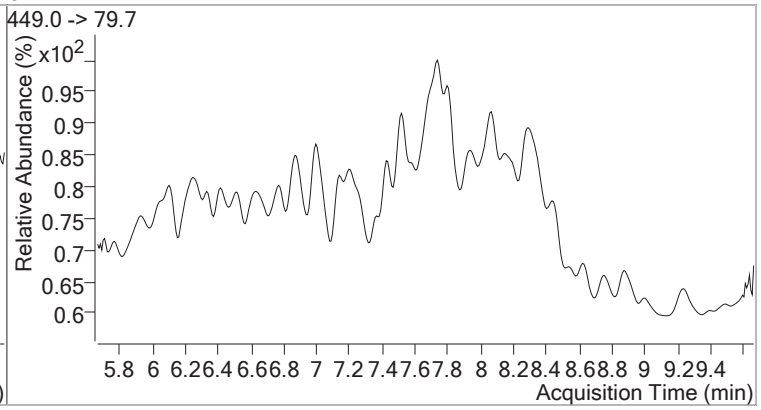




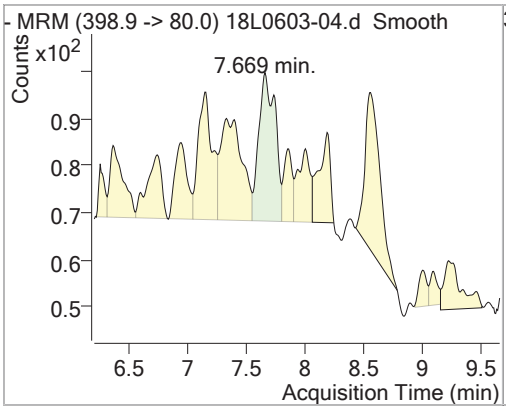


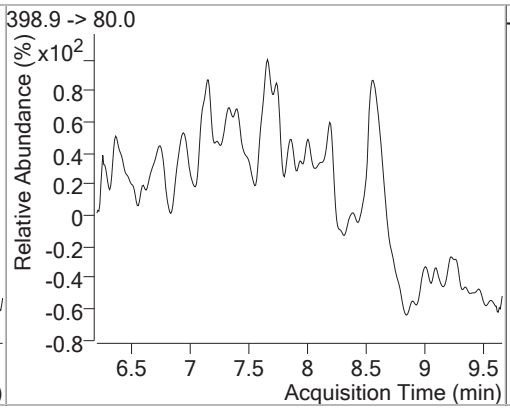
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	d	0		0				

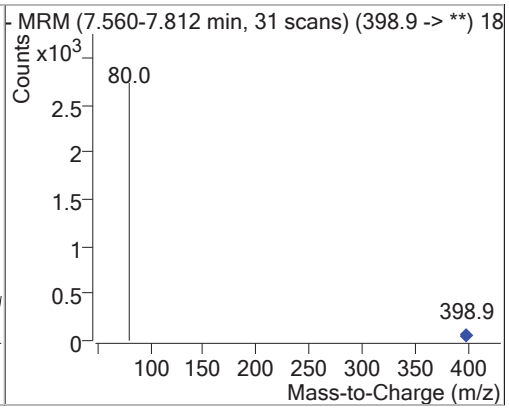




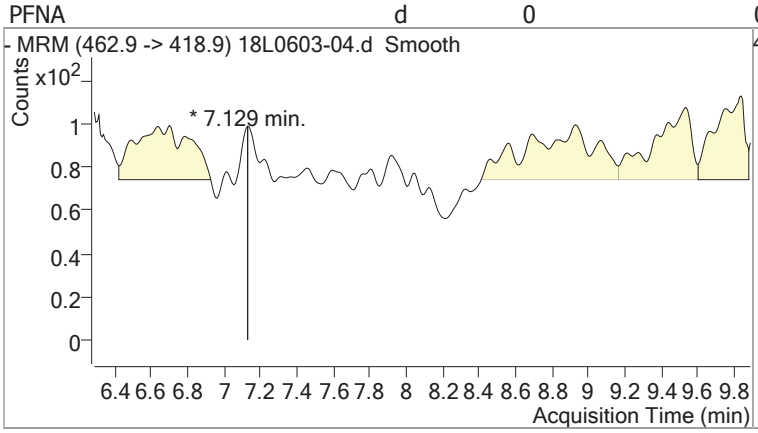
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	1204.4647	7.67	-0.01	312				

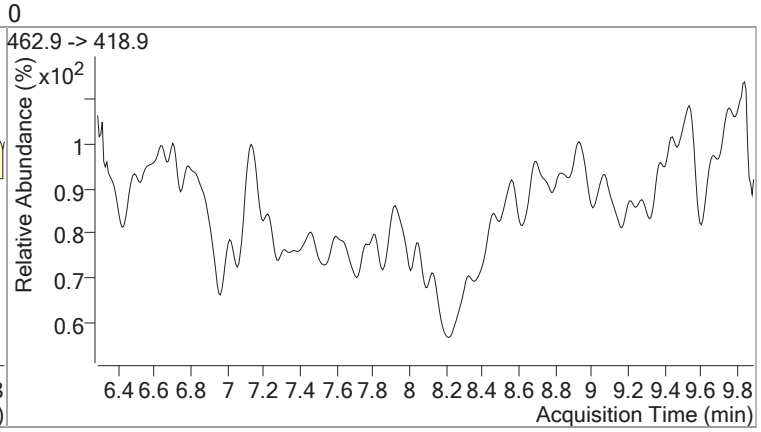




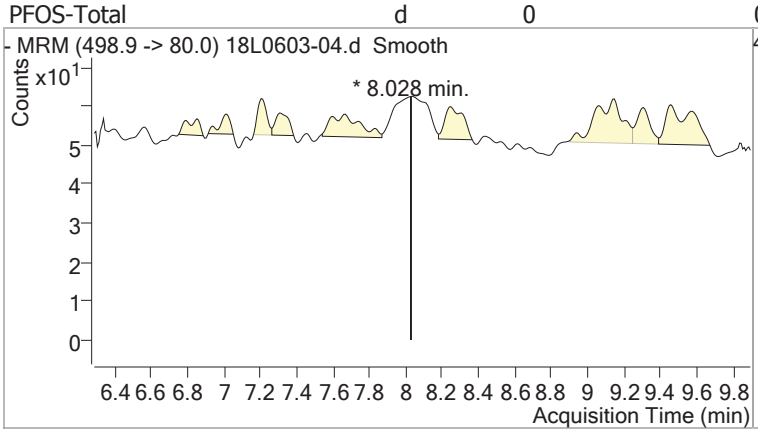


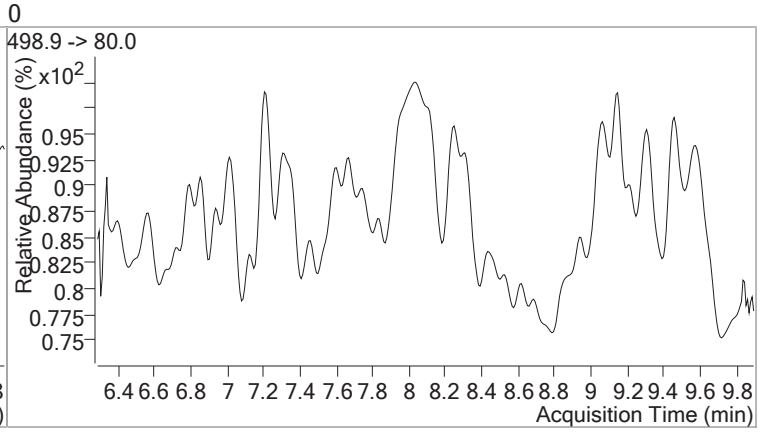
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PFNA	d	0		0				



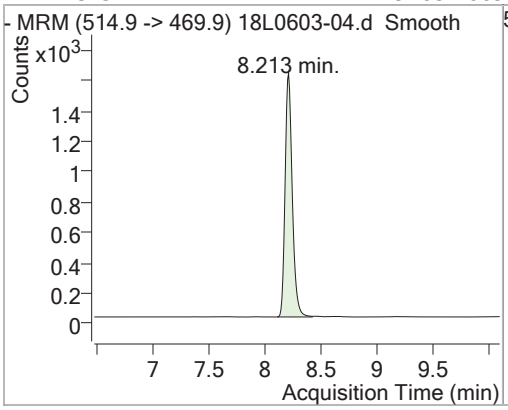


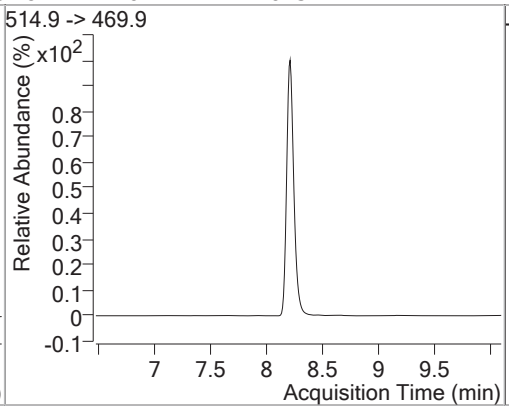
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	d	0		0				

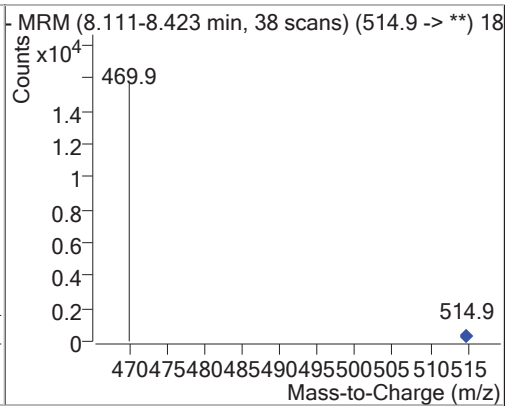




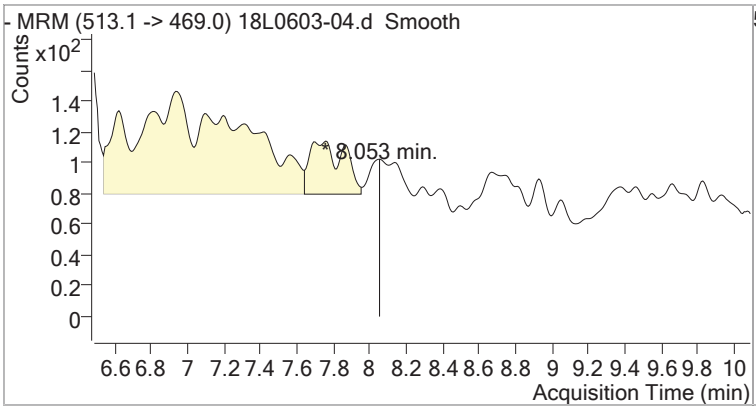
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	9485.2889	8.21	0.12	7073				

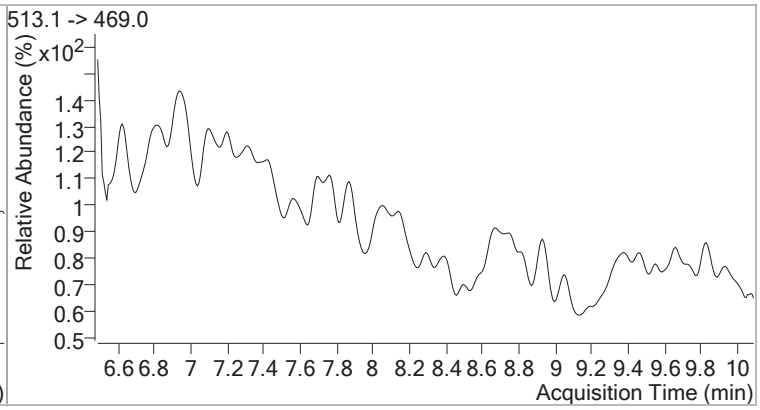




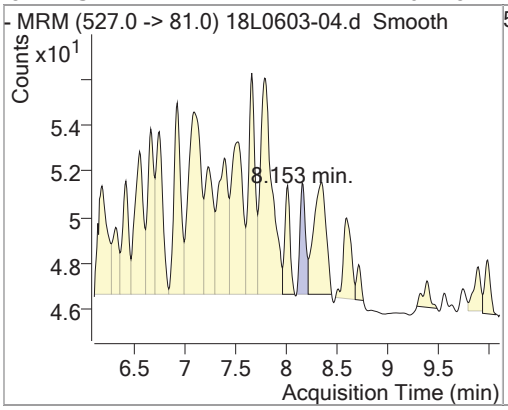


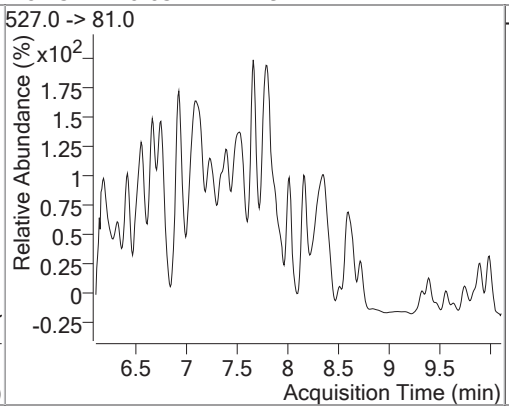
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	d	0		0				

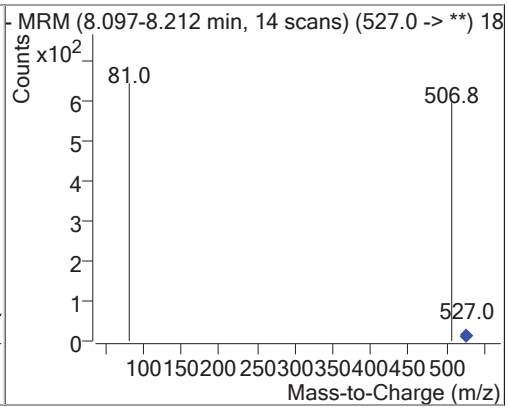




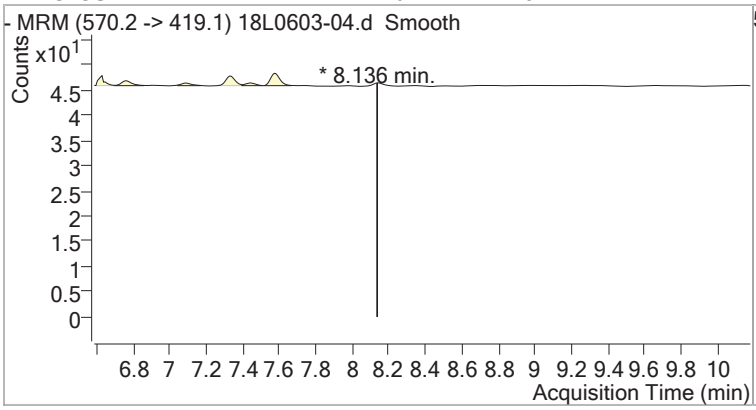
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	267.4872	8.15	0.05	19				

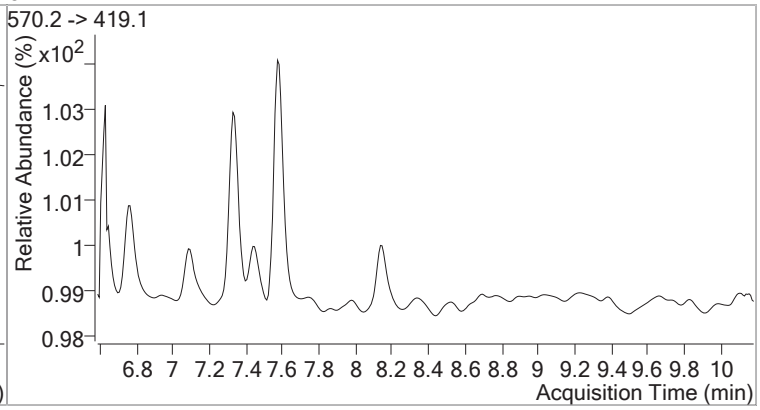




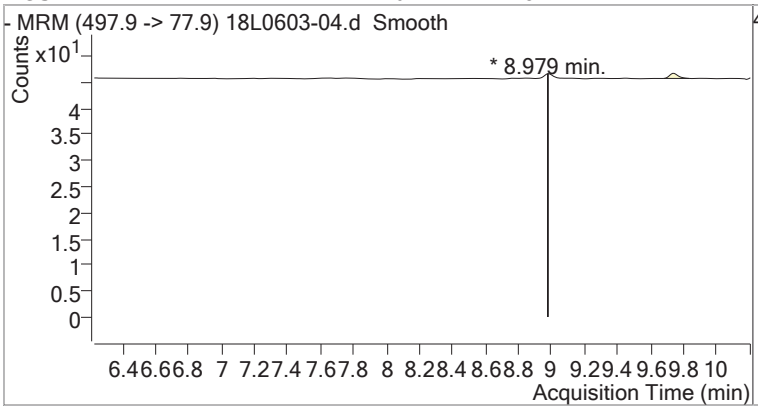


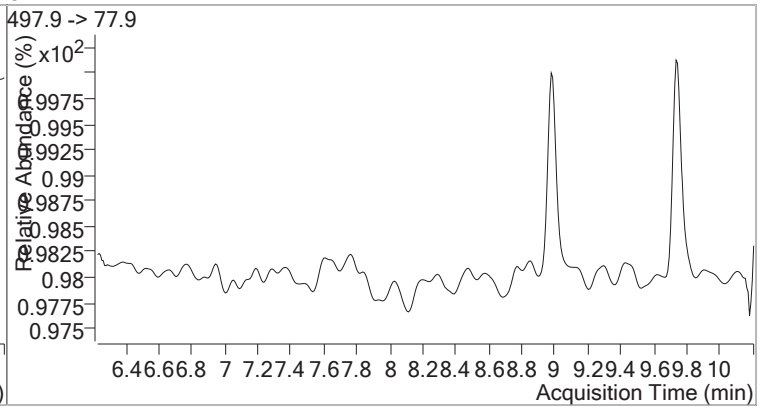
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	d	0		0				



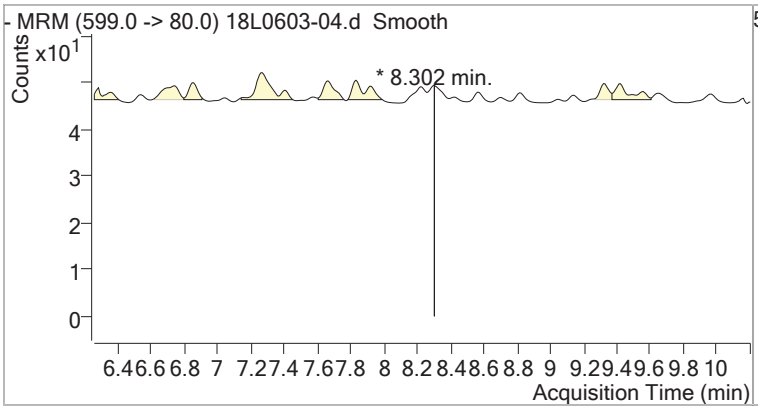


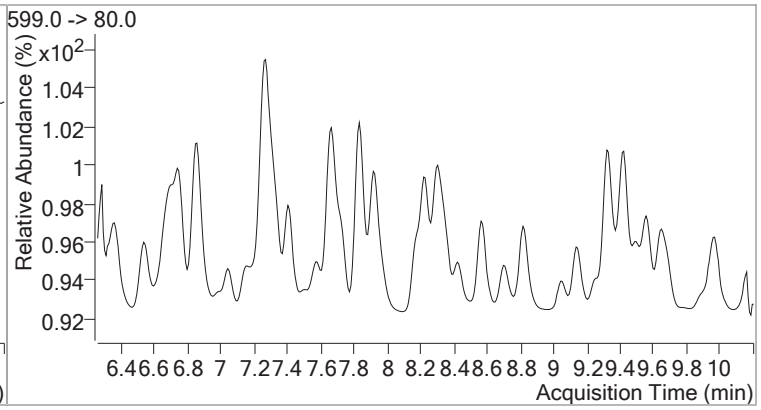
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	d	0		0				



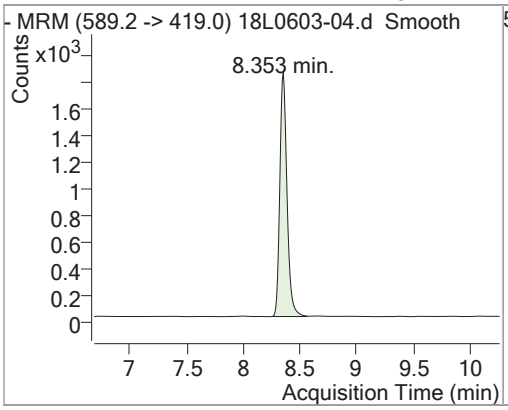


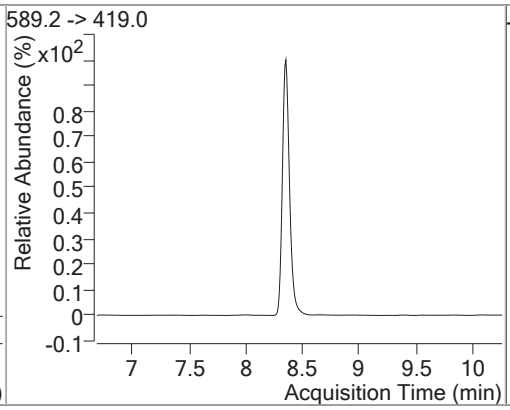
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	d	0		0				

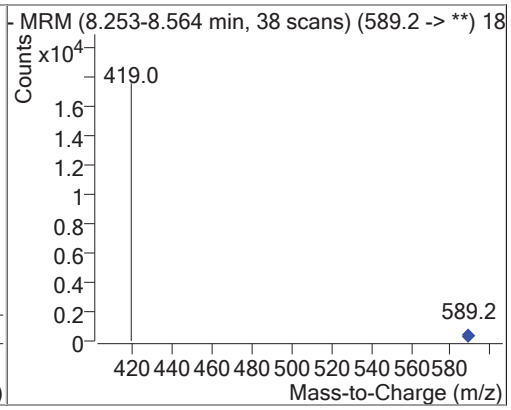




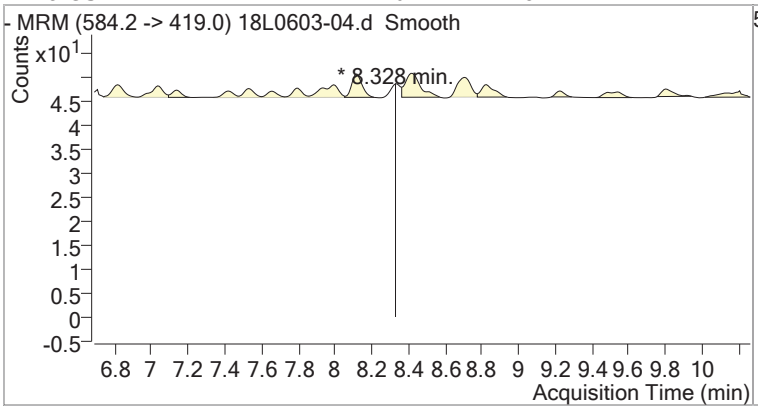
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	35893.6820	8.35	0.09	8013				

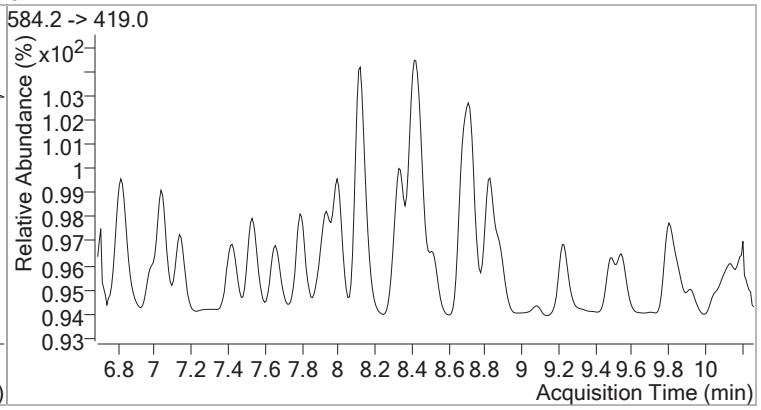




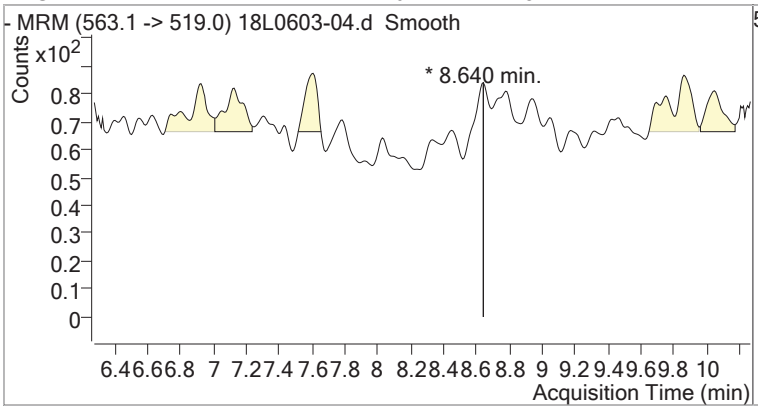


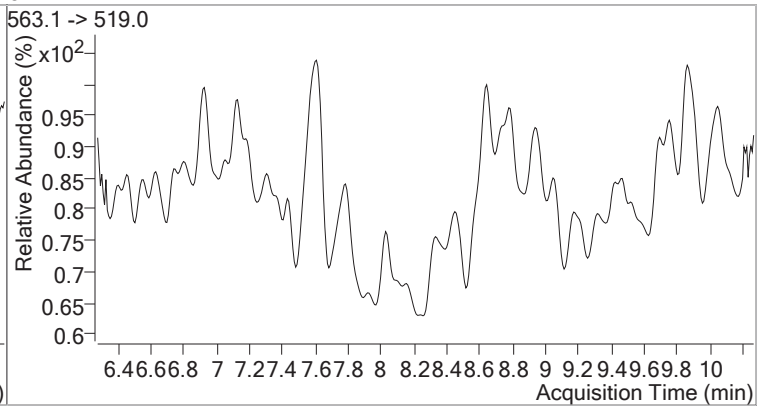
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	d	0		0				



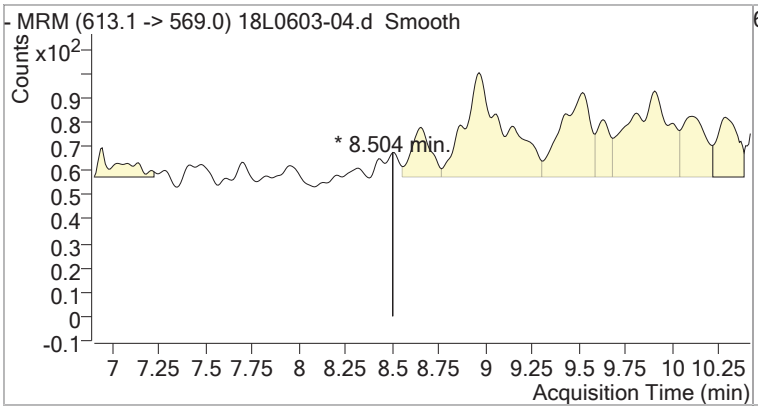


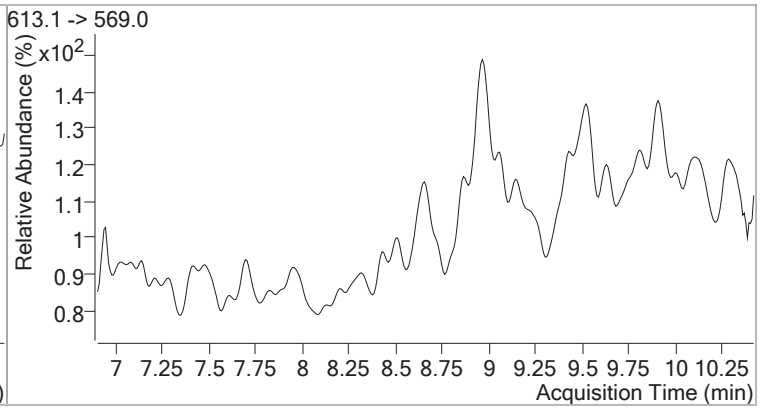
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	d	0		0				



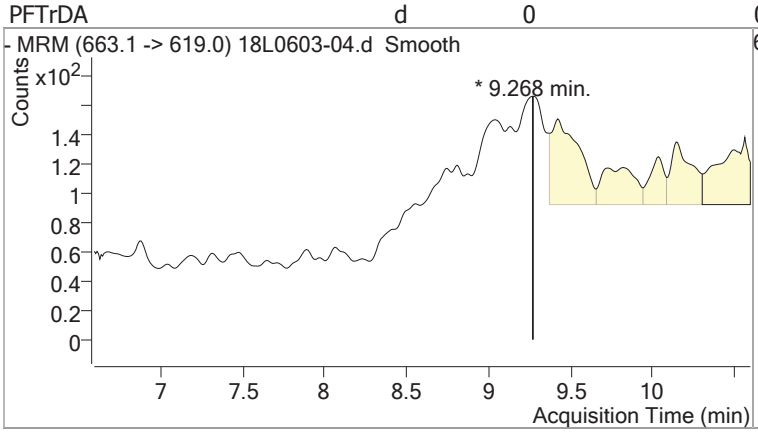


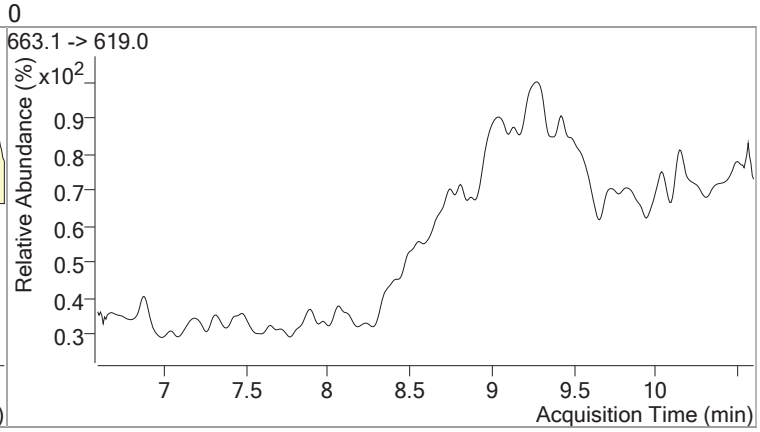
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PFDoA	d	0		0				



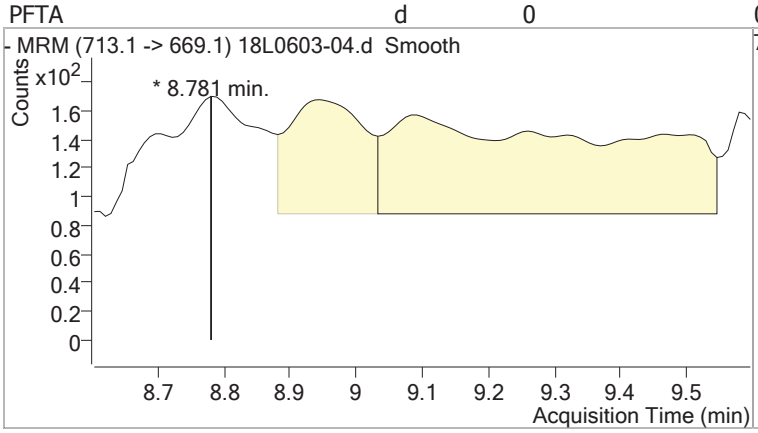


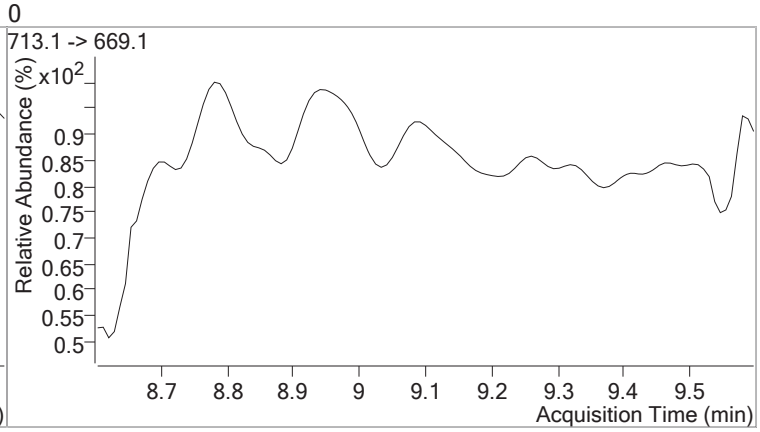
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	d	0		0				





Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	d	0		0				





1 - FORM I
ANALYSIS DATA SHEET

MW-1 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-05	File ID:	lims export files full-010
Sampled:	12/12/18 15:30	Prepared:	12/24/18 08:00	Analyzed:	12/27/18 12:25
Solids:		Preparation:	EPA 537	Dilution:	1
Initial/Final:	250 mL / 1 mL				
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
				Instrument:	HPLC1

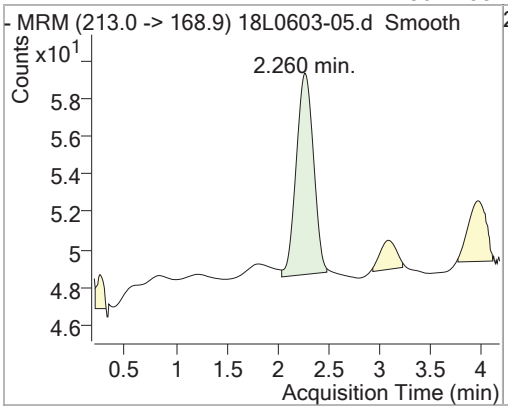
CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)		2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)		2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)		2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)		2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)	2.5	2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)		2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)		2.0	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)		2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)		2.0	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		2.0	2.0	
	NMeFOSAA		2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		2.0	2.0	
	NEtFOSAA		2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		2.0	2.0	

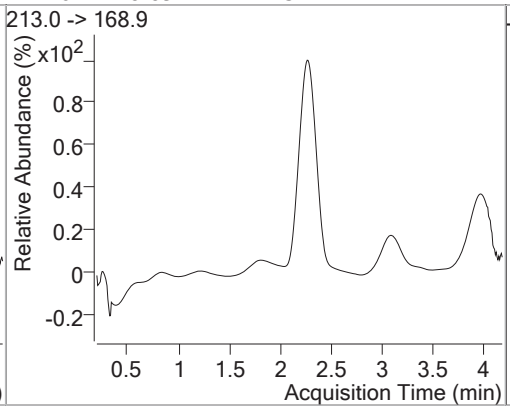
Data File	18L0603-05.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/27/2018 12:25:27 PM
Sample Name	18L0603-05	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File	122018.m	Comment	
Tune File		Tune Date	
Batch Name	1.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

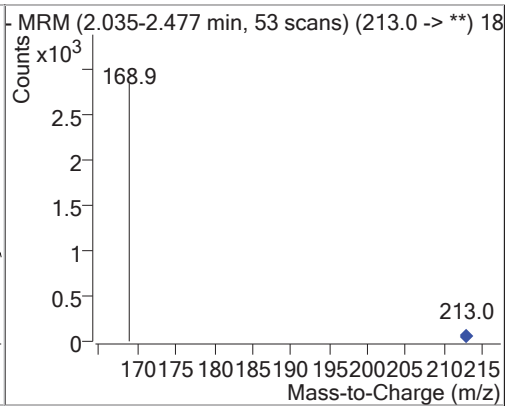
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	7.879	416.9 -> 371.9	11984	10000.0000	pg/ml		0.228
M PFOS C13	8.053	502.9 -> 80.0	9700	28700.0000	pg/ml		0.153
M d3-N-MeFOSAA	8.287	573.2 -> 419.0	11483	40000.0000	pg/ml		0.102
System Monitoring Compounds							
S PFHxA C13	7.325	314.9 -> 269.9	16345	11094.9498	pg/ml		0.388
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 110.95%			
S PFDA C13	8.213	514.9 -> 469.9	7636	9833.5845	pg/ml		0.119
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 98.34%			
S d5-N-MeFOSAA	8.353	589.2 -> 419.0	8634	34370.6551	pg/ml		0.086
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 85.93%			
Target Compounds							QValue
T PFBA	2.260	213.0 -> 168.9	125	186.1408	pg/ml		100
T PFPeA	6.594	263.0 -> 219.0	523	618.4066	pg/ml		100
T PFBS	6.568	298.9 -> 80.0	0	0.0000	pg/ml	md	1
T PFHxA	7.325	312.9 -> 268.9	284	210.0451	pg/ml	m	100
T PFHpA	7.341	362.9 -> 319.0	0	0.0000	pg/ml	md	1
T 6.2 FTS	7.862	427.0 -> 406.8	0	0.0000	pg/ml	md	1
T PFOA-Total	7.585	412.9 -> 368.9	0	0.0000	pg/ml	md	1
T PFHpS	7.567	449.0 -> 79.7	0	0.0000	pg/ml	md	1
T PFHxS-Total	7.669	398.9 -> 80.0	0	0.0000	pg/ml	md	1
T PFNA	7.659	462.9 -> 418.9	0	0.0000	pg/ml	md	1
T PFOS-Total	8.062	498.9 -> 80.0	0	0.0000	pg/ml	md	1
T PFDA	7.969	513.1 -> 469.0	0	0.0000	pg/ml	md	1
T 8.2 FTS	7.968	527.0 -> 81.0	0	0.0000	pg/ml	md	1
T N-MeFOSAA	8.060	570.2 -> 419.1	0	0.0000	pg/ml	md	1
T FOSA	8.340	497.9 -> 77.9	0	0.0000	pg/ml	md	1
T PFDS	8.328	599.0 -> 80.0	0	0.0000	pg/ml	md	1
T N-EtFOSAA	8.211	584.2 -> 419.0	0	0.0000	pg/ml	md	1
T PFUnA	8.262	563.1 -> 519.0	0	0.0000	pg/ml	md	1
T PFDoA	8.538	613.1 -> 569.0	0	0.0000	pg/ml	md	1
T PFTrDA	8.630	663.1 -> 619.0	0	0.0000	pg/ml	md	1
T PFTA	8.655	713.1 -> 669.1	0	0.0000	pg/ml	md	1

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

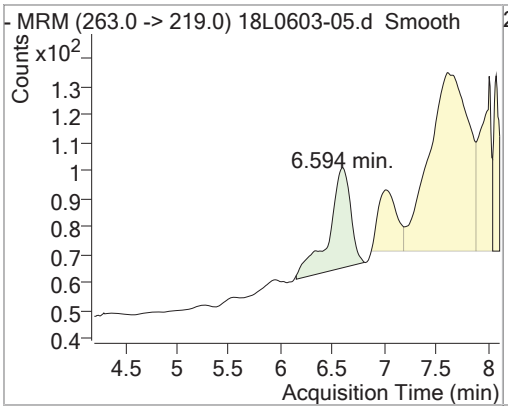
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	186.1408	2.26	0.09	125				

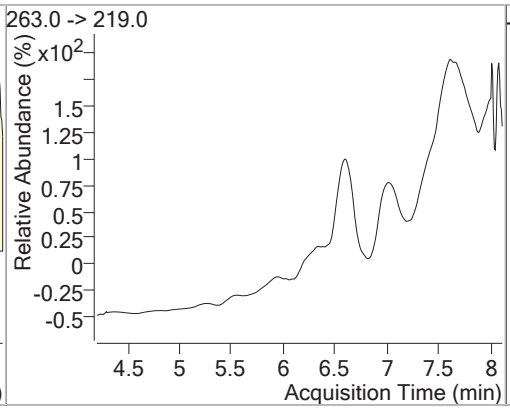


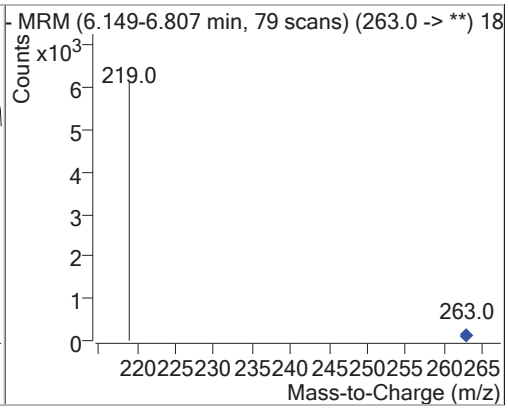




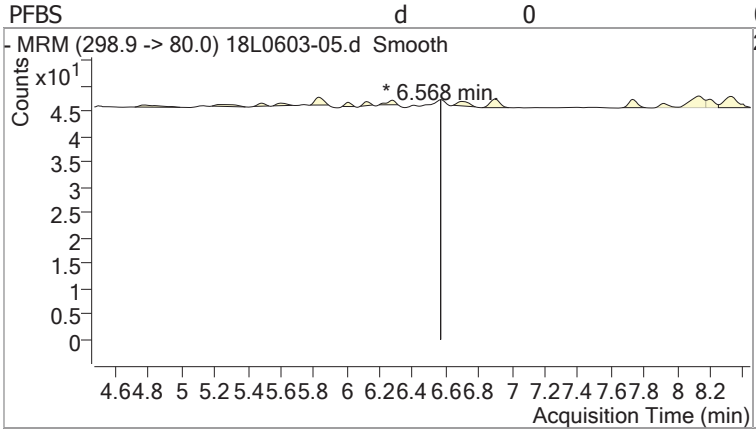
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	618.4066	6.59	0.49	523				

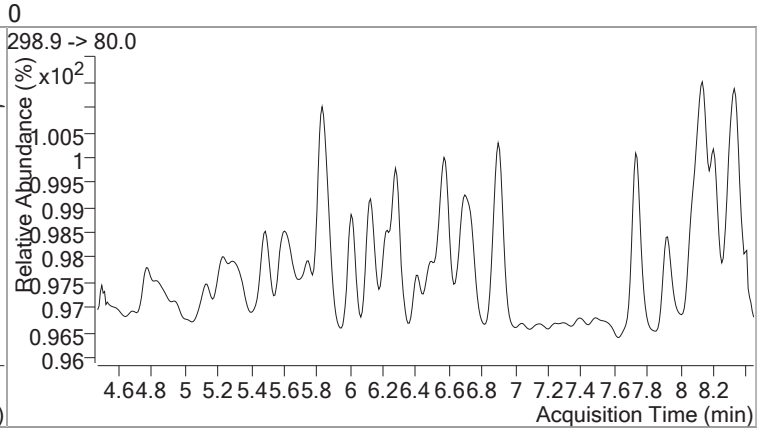




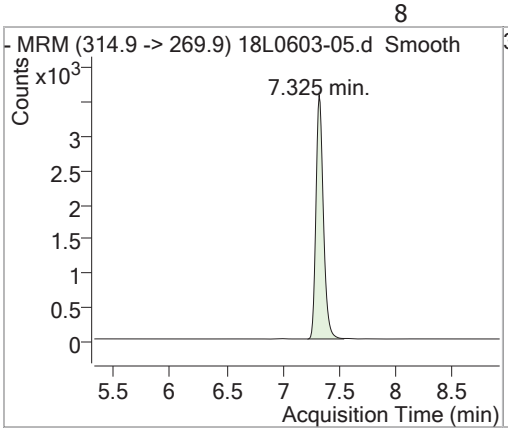


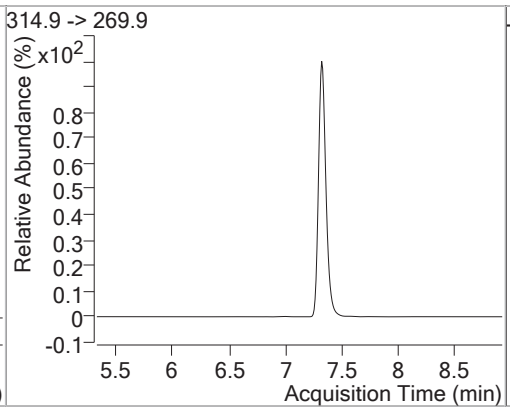
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	d	0		0				

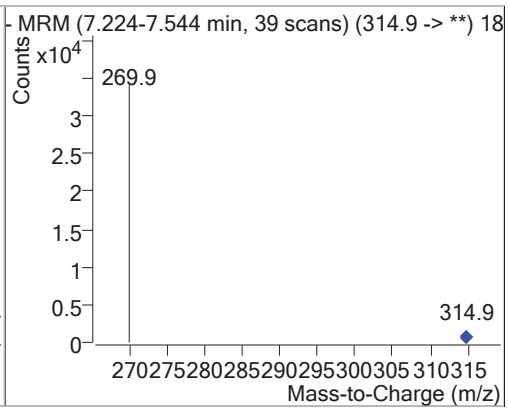




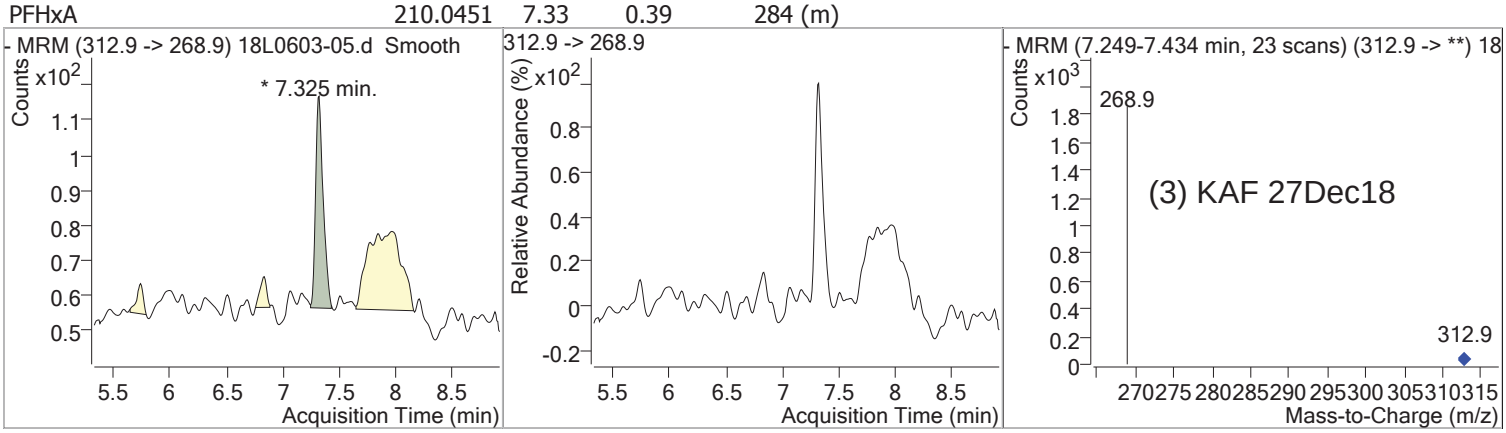
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	11094.9498	7.32	0.39	16345				



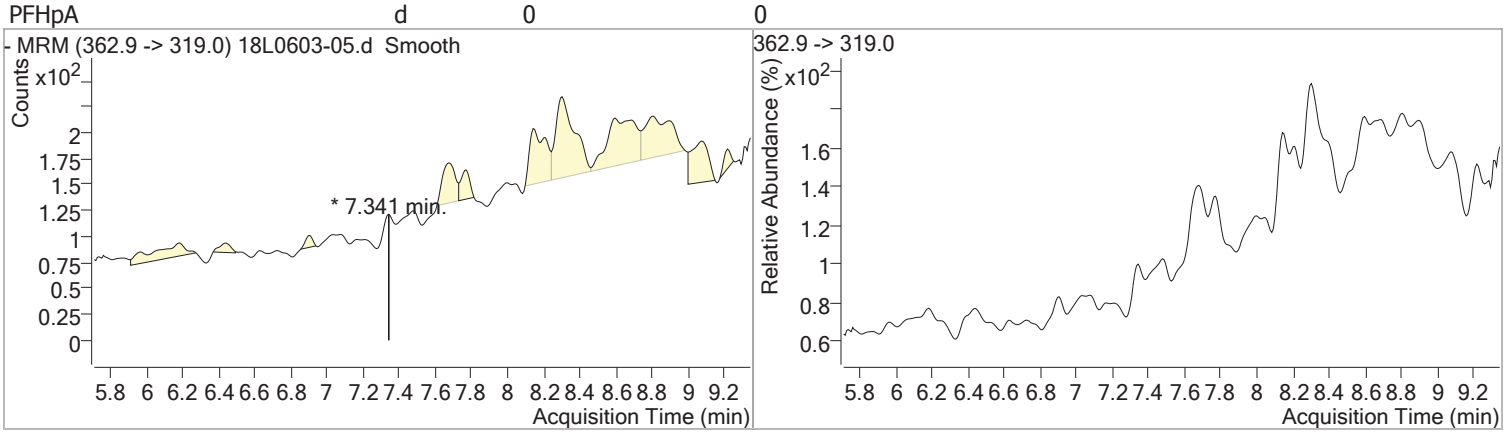




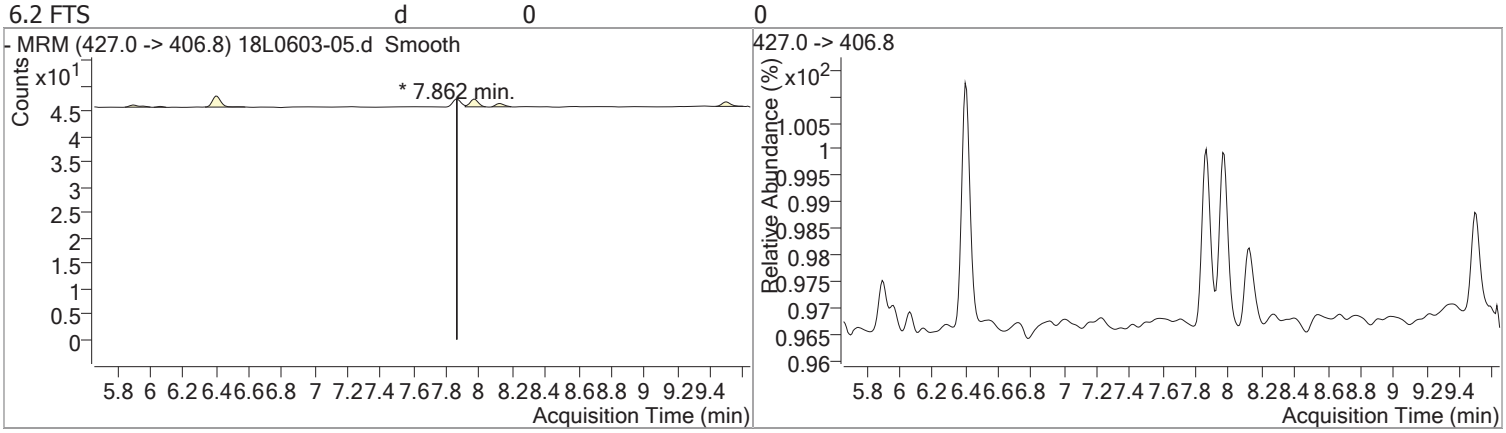
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	210.0451	7.33	0.39	284 (m)				



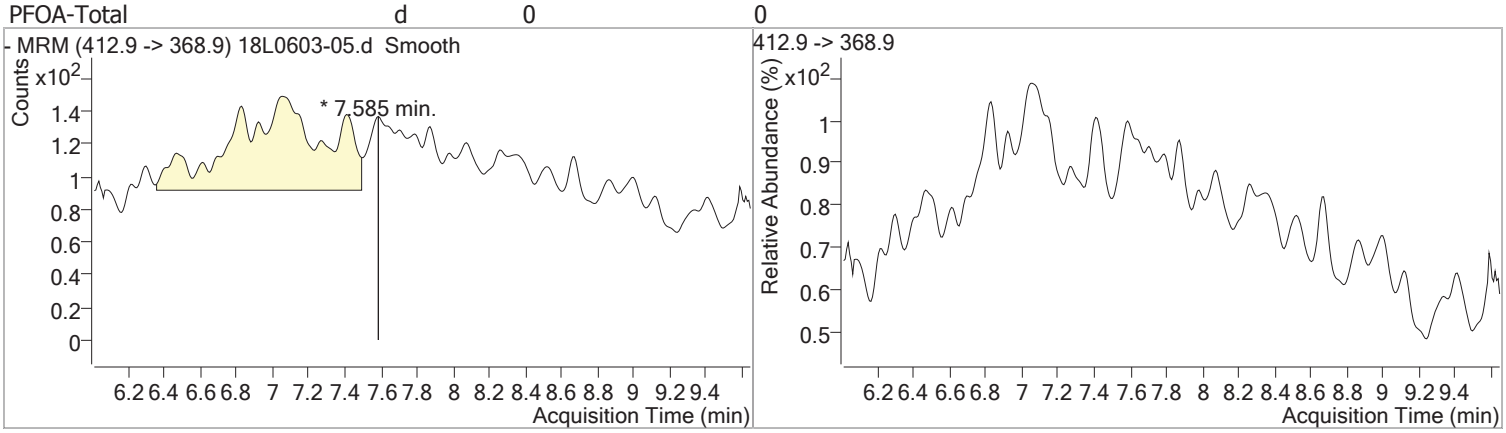
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	d	0		0				



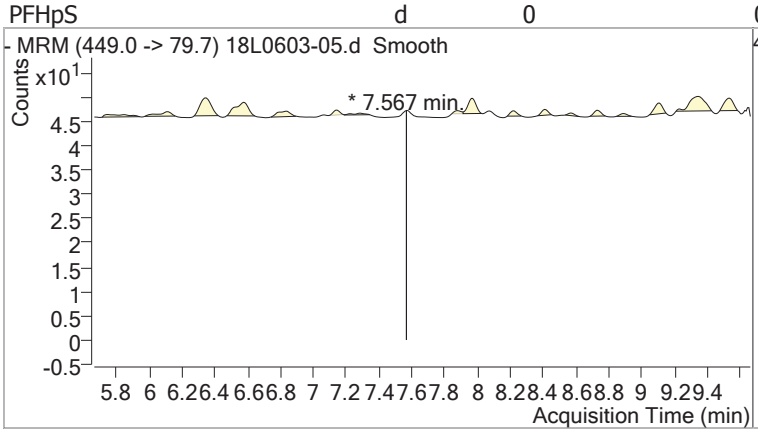
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	d	0		0				

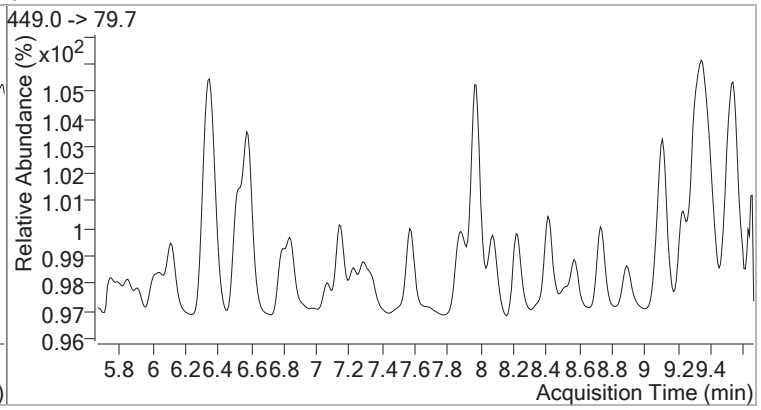


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	d	0		0				

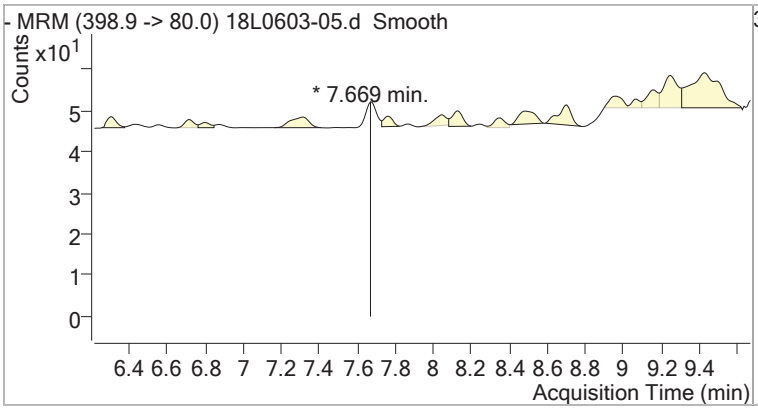


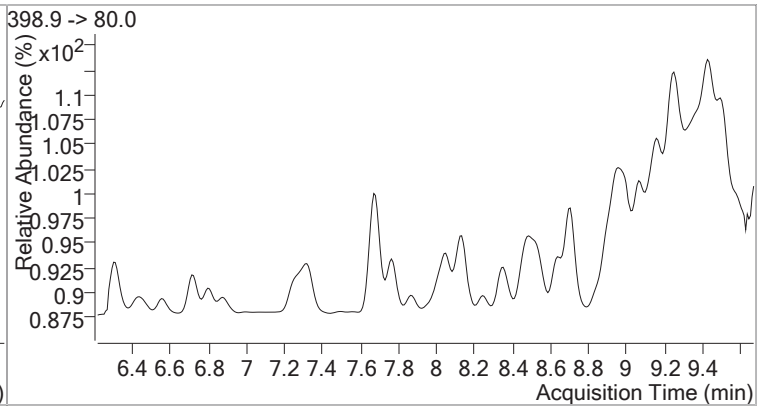
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	d	0		0				



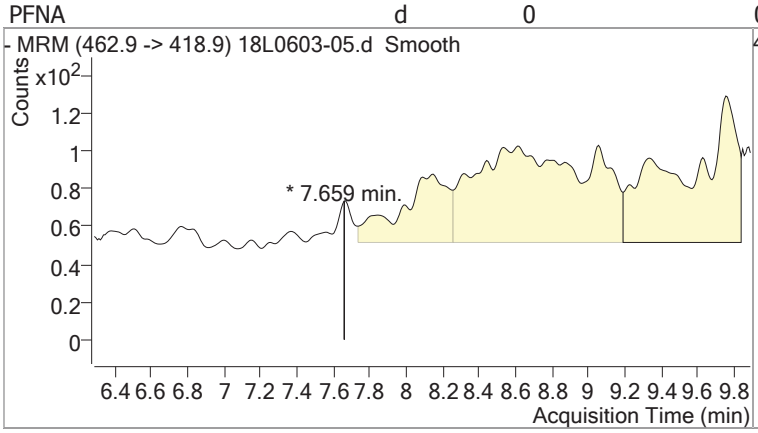


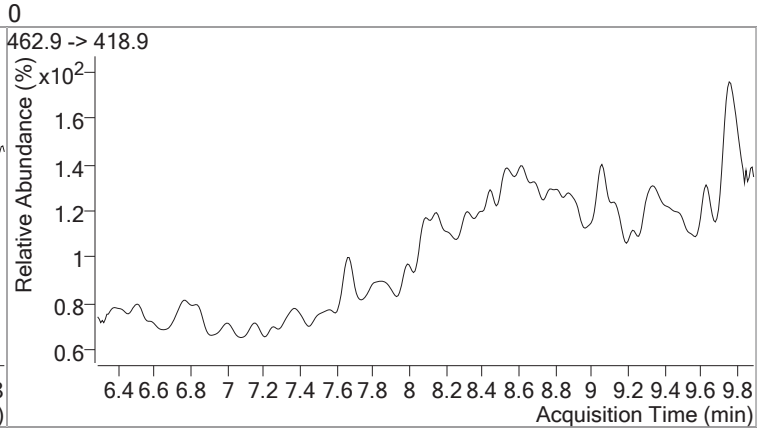
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	d	0		0				



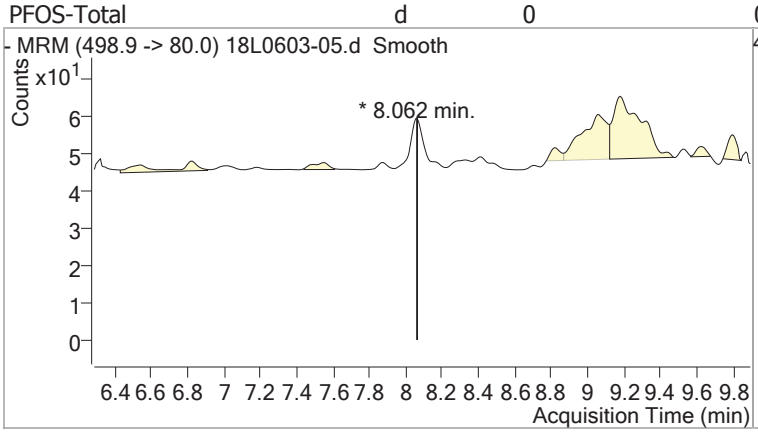


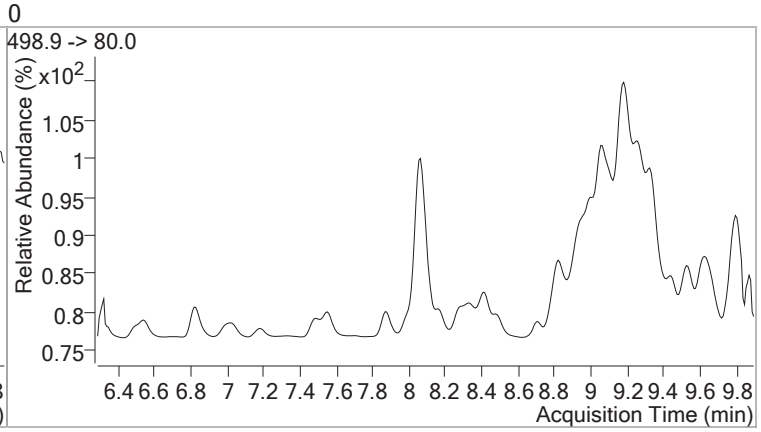
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	d	0		0				



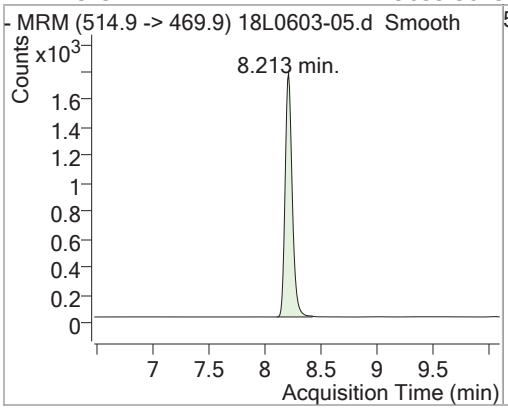


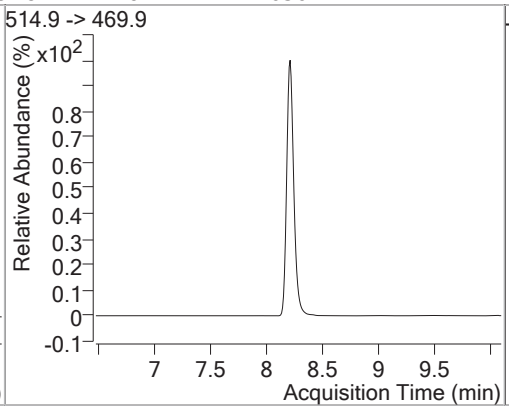
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	d	0		0				

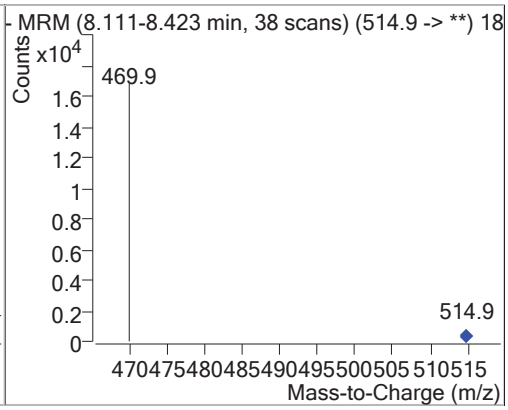




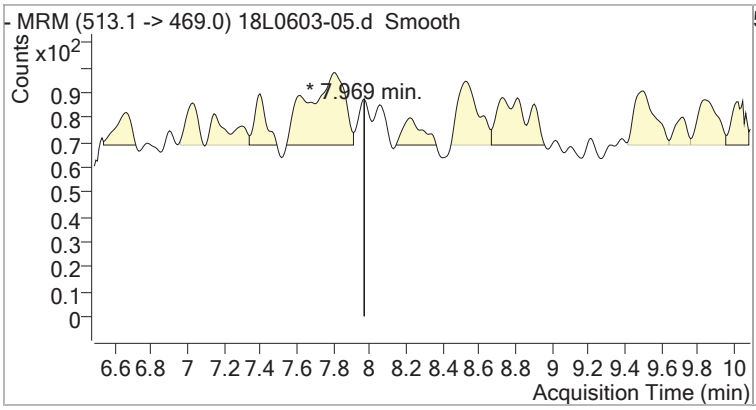
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	9833.5845	8.21	0.12	7636				

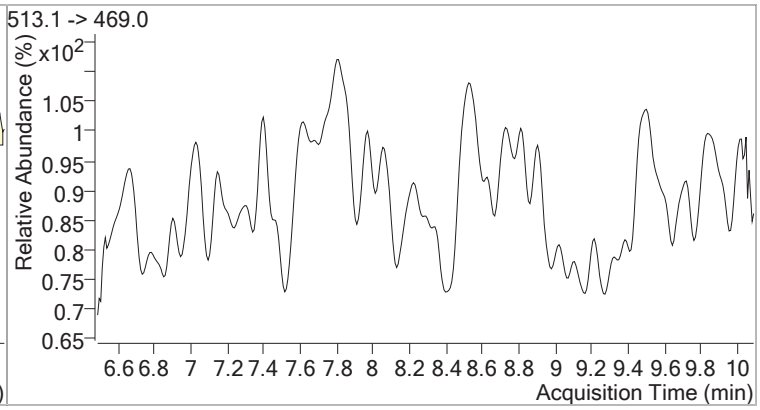




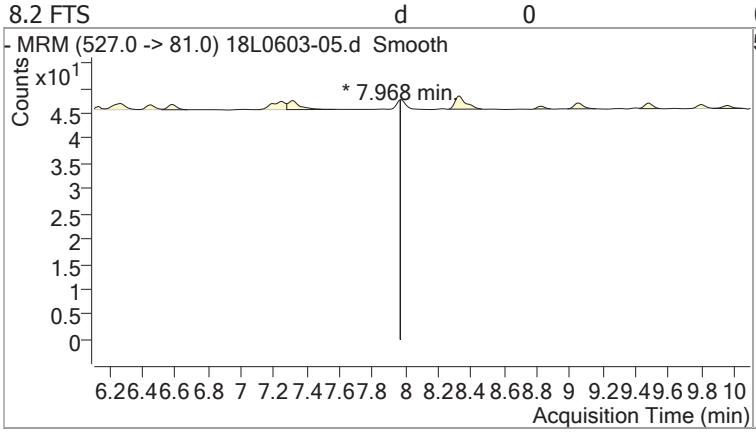


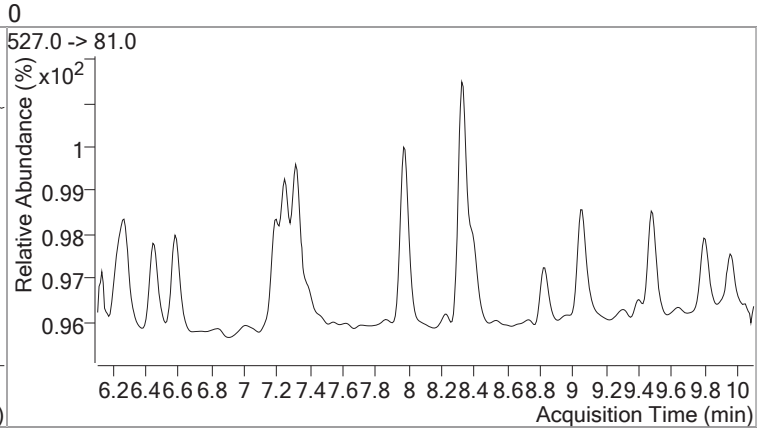
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	d	0		0				



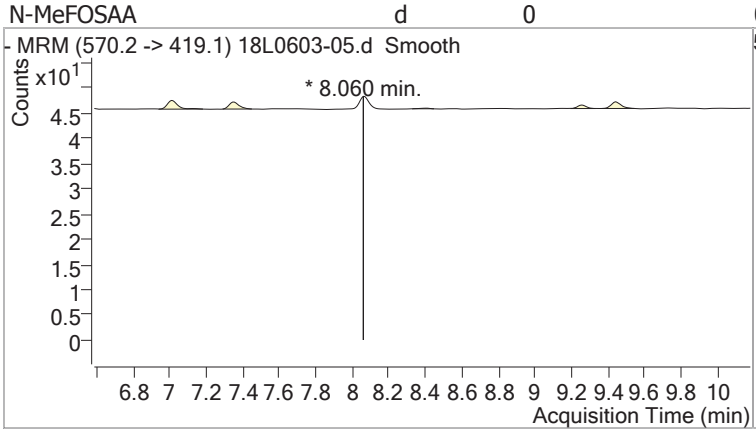


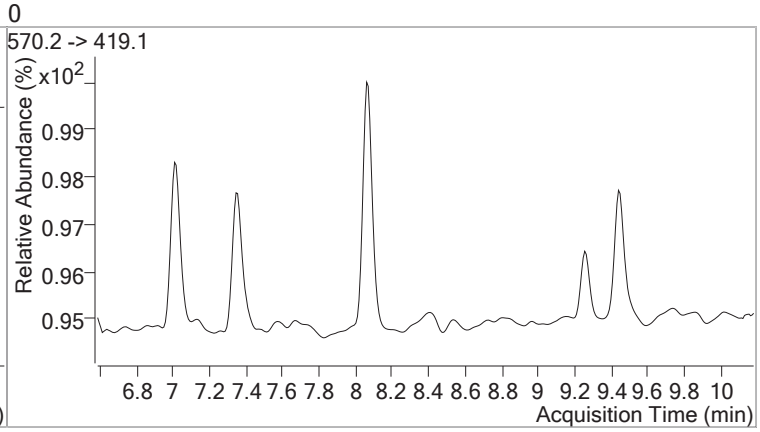
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	d	0		0				



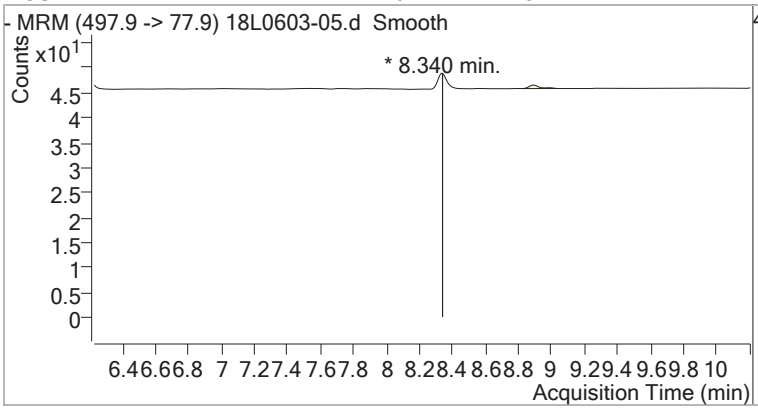


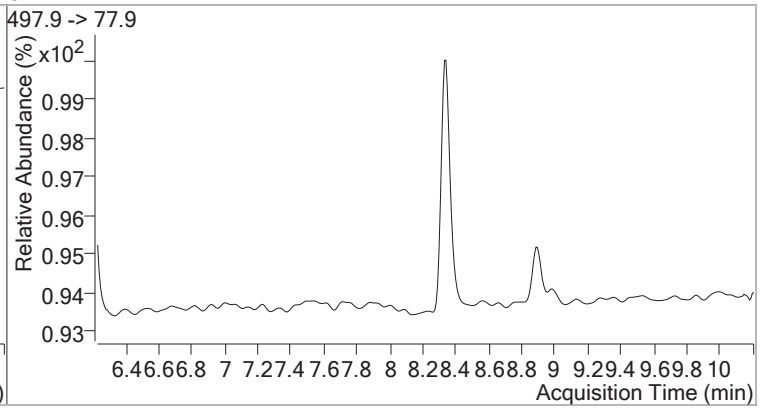
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	d	0		0				



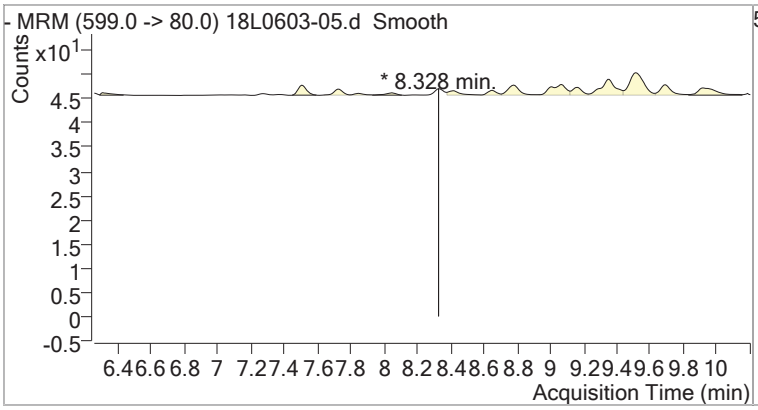


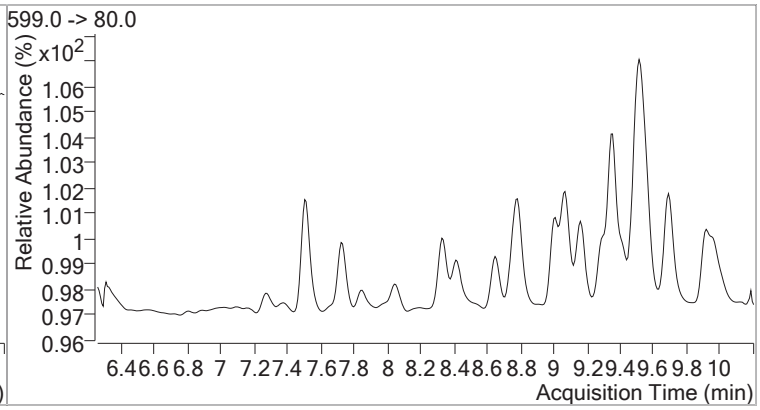
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	d	0		0				



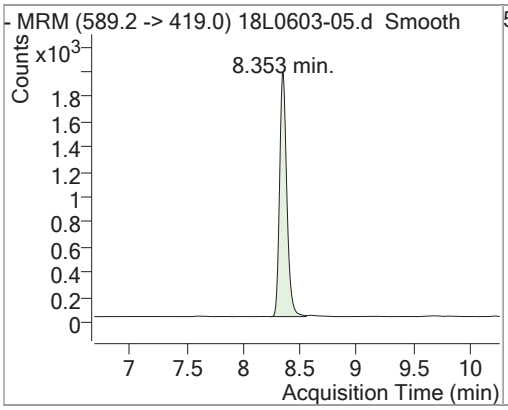


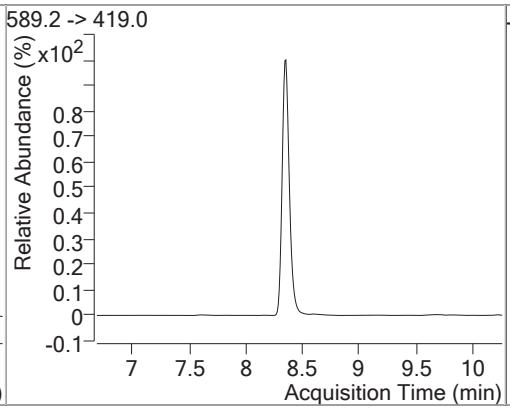
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	d	0		0				

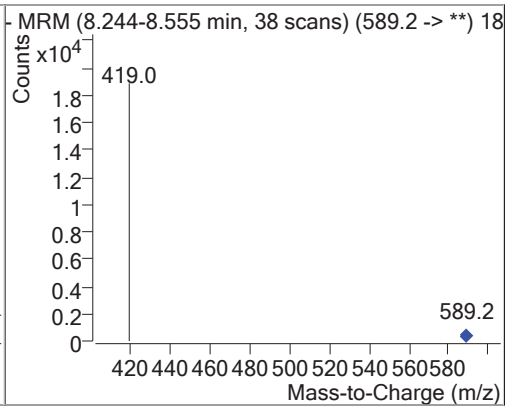




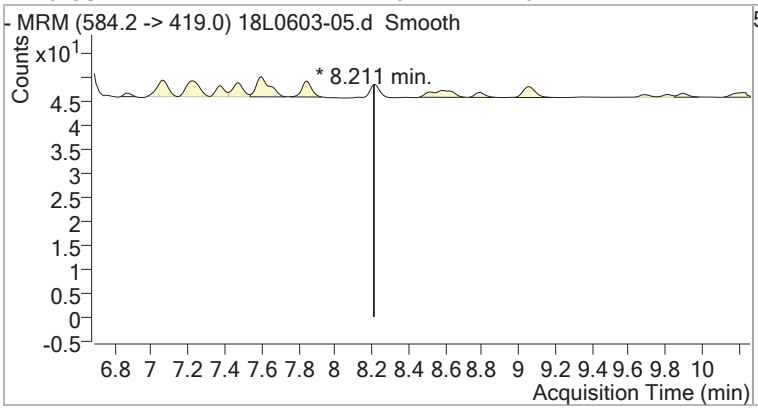
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	34370.6551	8.35	0.09	8634				

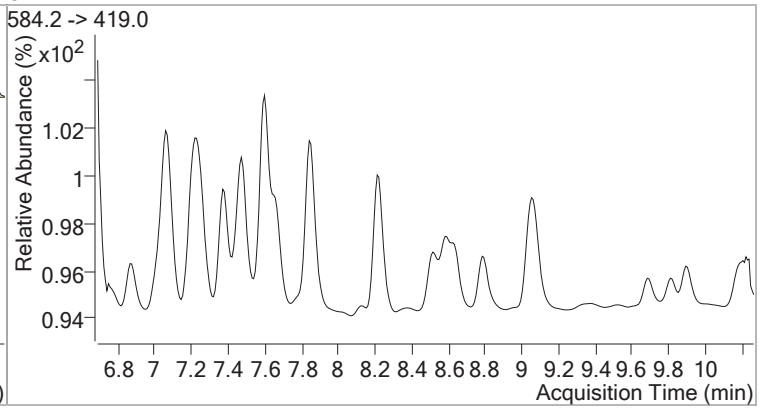




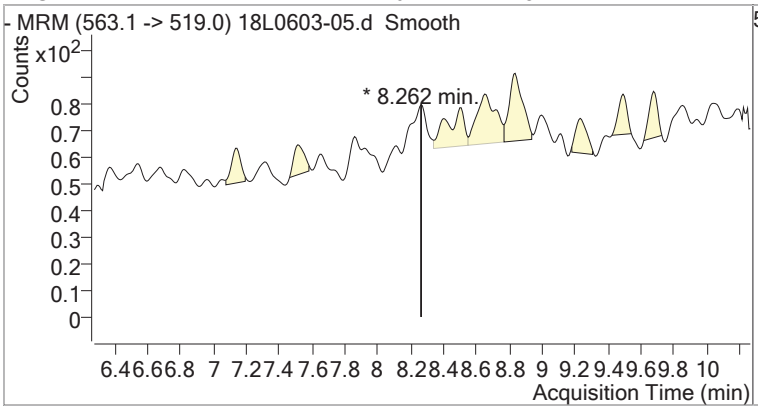


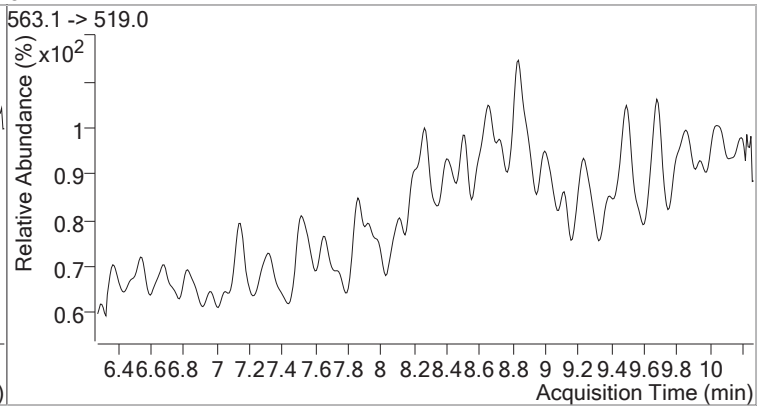
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	d	0		0				



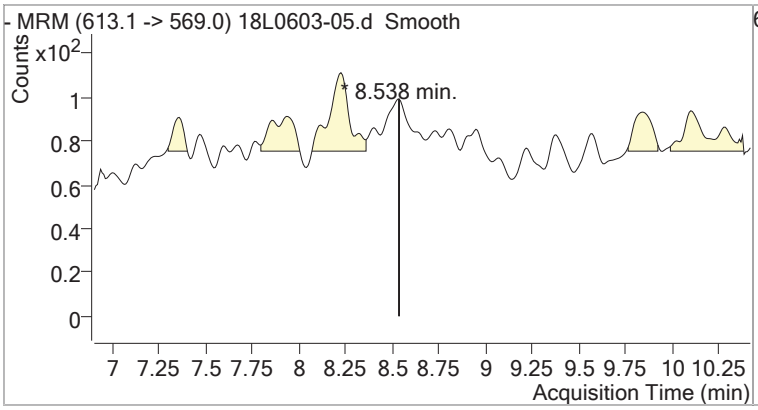


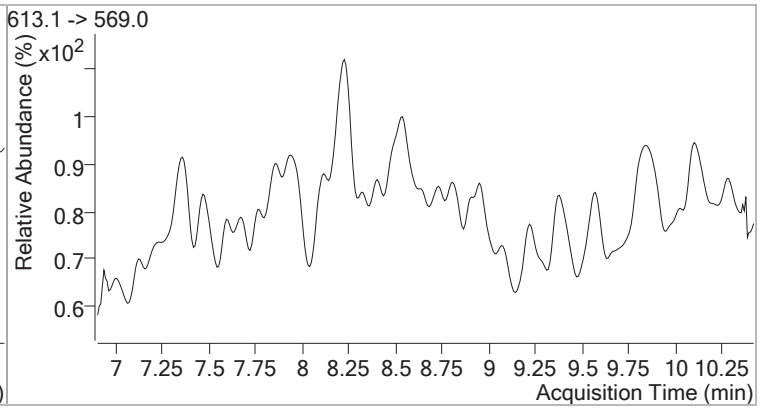
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	d	0		0				



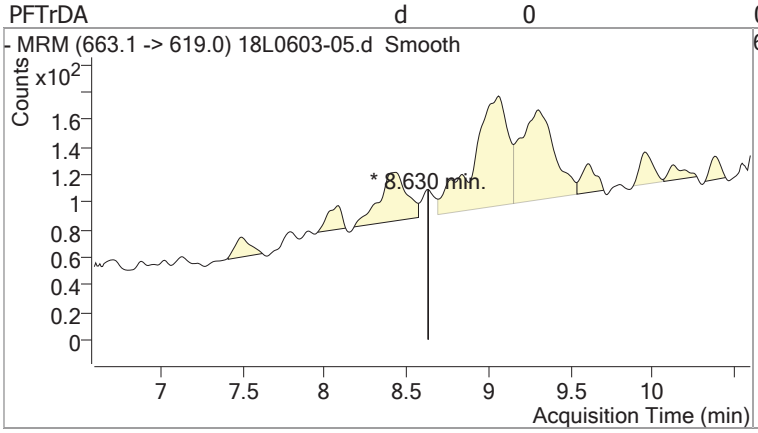


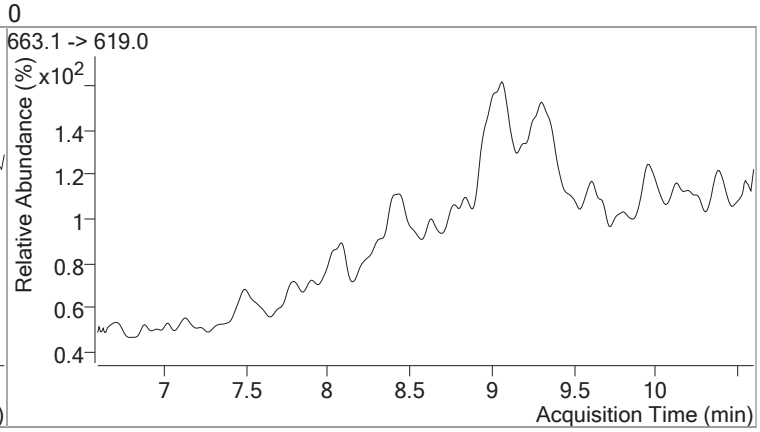
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	d	0		0				



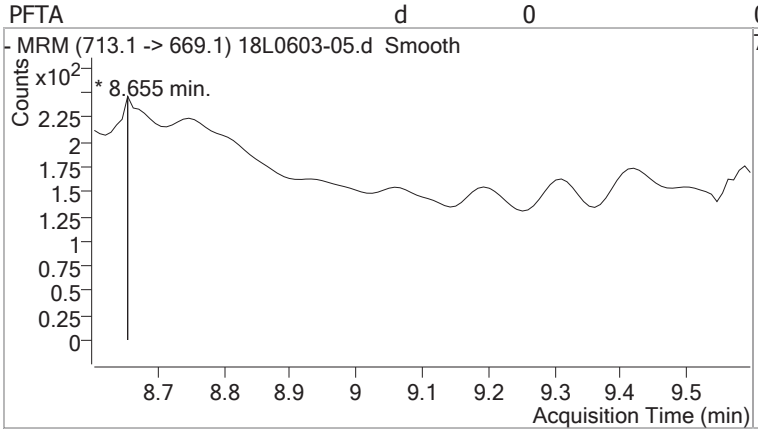


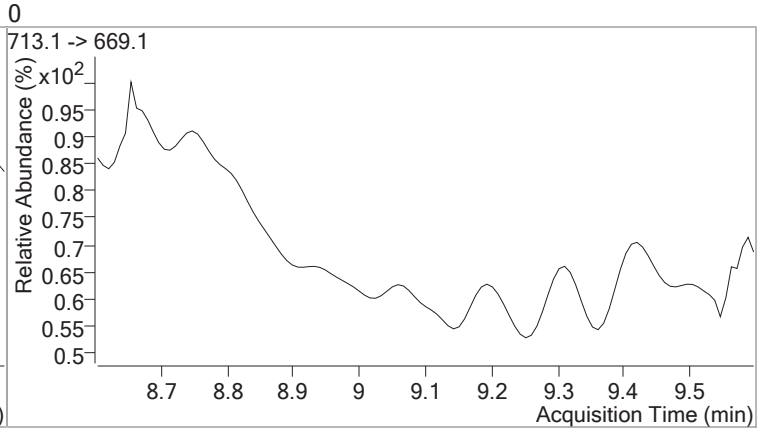
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	d	0		0				





Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	d	0		0				





1 - FORM I
ANALYSIS DATA SHEET

field blank

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Field Blank	Laboratory ID:	18L0603-06	File ID:	lims export files full-011
Sampled:	12/12/18 11:10	Prepared:	12/24/18 08:00	Analyzed:	12/27/18 12:38
Solids:		Preparation:	EPA 537	Dilution:	1
Initial/Final:	250 mL / 1 mL				
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
Instrument:	HPLC1				

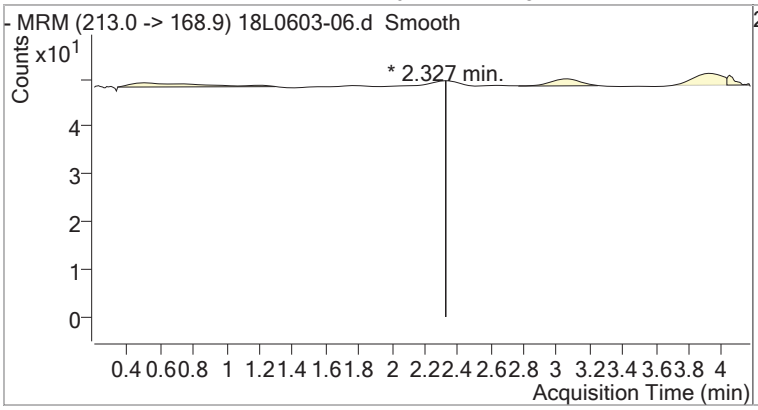
CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)		2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)		2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)		2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)		2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)		2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)		2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)		2.0	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)		2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)		2.0	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		2.0	2.0	
	NMeFOSAA		2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		2.0	2.0	
	NEtFOSAA		2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		2.0	2.0	

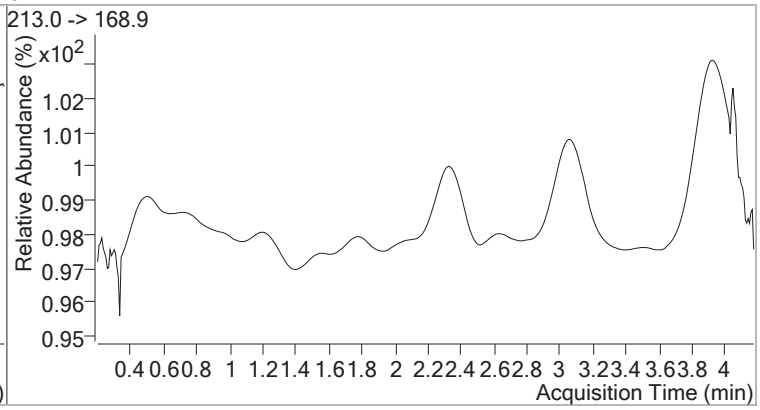
Data File	18L0603-06.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/27/2018 12:38:10 PM
Sample Name	18L0603-06	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File	122018.m	Comment	
Tune File		Tune Date	
Batch Name	1.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	7.812	416.9 -> 371.9	12106	10000.0000	pg/ml		0.161
M PFOS C13	7.994	502.9 -> 80.0	9594	28700.0000	pg/ml		0.094
M d3-N-MeFOSAA	8.220	573.2 -> 419.0	10516	40000.0000	pg/ml		0.035
System Monitoring Compounds							
S PFHxA C13	7.266	314.9 -> 269.9	16615	11164.1046	pg/ml		0.329
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 111.64%			
S PFDA C13	8.145	514.9 -> 469.9	7368	9392.7525	pg/ml		0.052
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 93.93%			
S d5-N-MeFOSAA	8.286	589.2 -> 419.0	8078	35113.1190	pg/ml		0.018
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 87.78%			
Target Compounds							QValue
T PFBA	2.327	213.0 -> 168.9	0	0.0000	pg/ml	md	1
T PFPeA	6.317	263.0 -> 219.0	0	0.0000	pg/ml	md	1
T PFBS	6.518	298.9 -> 80.0	0	0.0000	pg/ml	md	1
T PFHxA	6.980	312.9 -> 268.9	0	0.0000	pg/ml	md	1
T PFHpA	8.233	362.9 -> 319.0	0	0.0000	pg/ml	md	1
T 6.2 FTS	7.634	427.0 -> 406.8	0	0.0000	pg/ml	md	1
T PFOA-Total	7.299	412.9 -> 368.9	0	0.0000	pg/ml	md	1
T PFHpS	7.794	449.0 -> 79.7	0	0.0000	pg/ml	md	1
T PFHxS-Total	7.736	398.9 -> 80.0	0	0.0000	pg/ml	md	1
T PFNA	7.962	462.9 -> 418.9	0	0.0000	pg/ml	md	1
T PFOS-Total	7.969	498.9 -> 80.0	0	0.0000	pg/ml	md	1
T PFDA	8.061	513.1 -> 469.0	0	0.0000	pg/ml	md	1
T 8.2 FTS	7.817	527.0 -> 81.0	0	0.0000	pg/ml	md	1
T N-MeFOSAA	7.900	570.2 -> 419.1	0	0.0000	pg/ml	md	1
T FOSA	7.633	497.9 -> 77.9	0	0.0000	pg/ml	md	1
T PFDS	8.143	599.0 -> 80.0	0	0.0000	pg/ml	md	1
T N-EtFOSAA	8.371	584.2 -> 419.0	0	0.0000	pg/ml	md	1
T PFUnA	8.304	563.1 -> 519.0	0	0.0000	pg/ml	md	1
T PFDoA	8.496	613.1 -> 569.0	0	0.0000	pg/ml	md	1
T PFTrDA	8.470	663.1 -> 619.0	0	0.0000	pg/ml	md	1
T PFTA	8.907	713.1 -> 669.1	0	0.0000	pg/ml	md	1

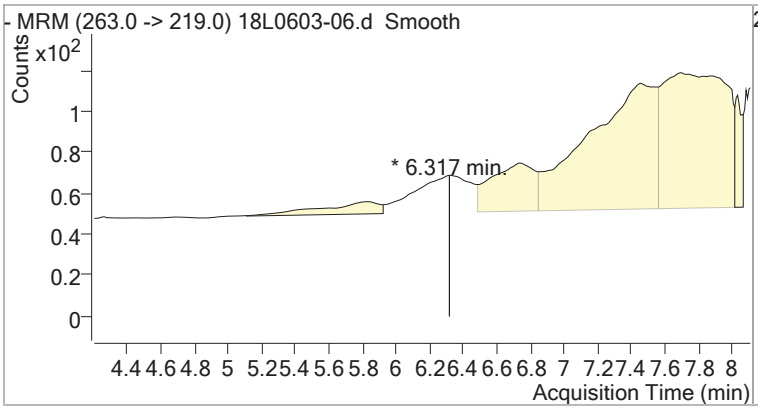
(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

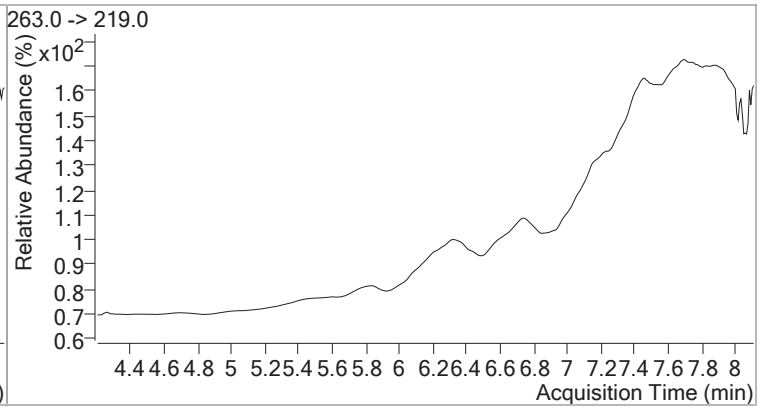
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	d	0		0				



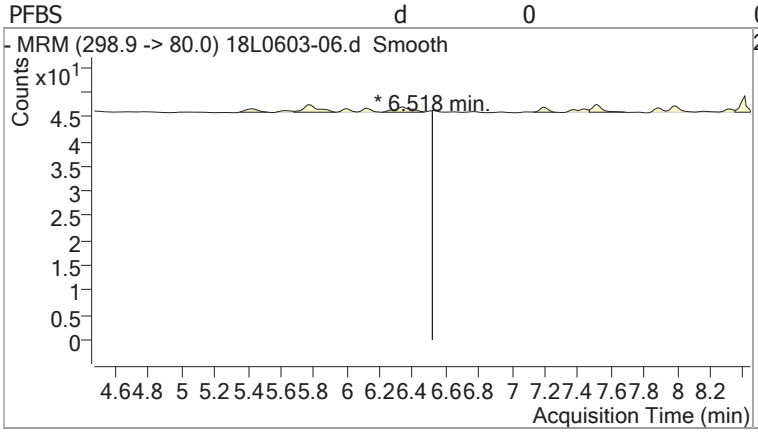


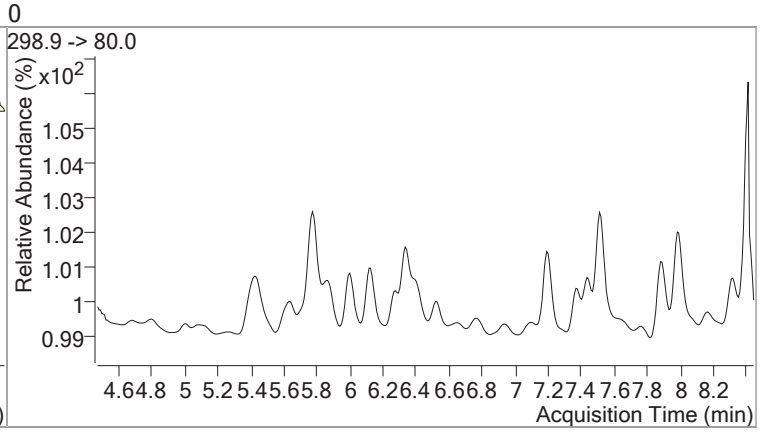
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	d	0		0				



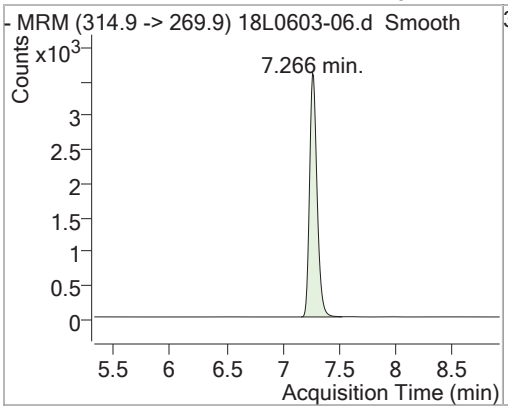


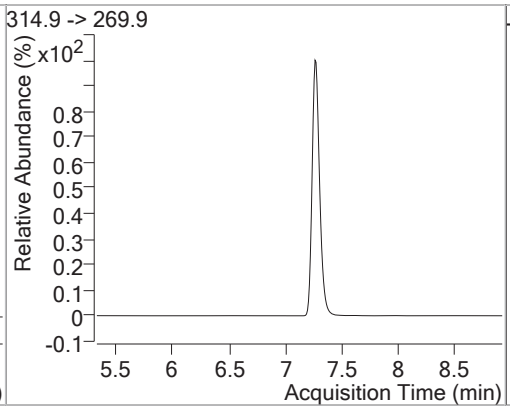
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	d	0		0				

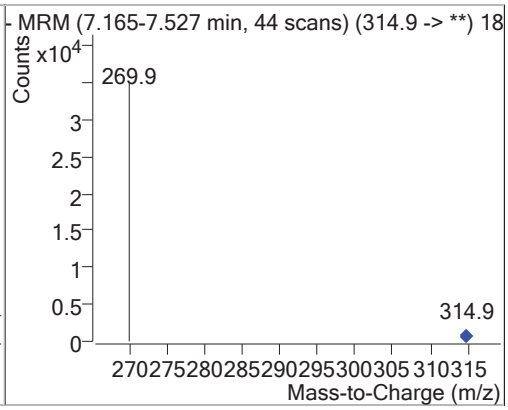




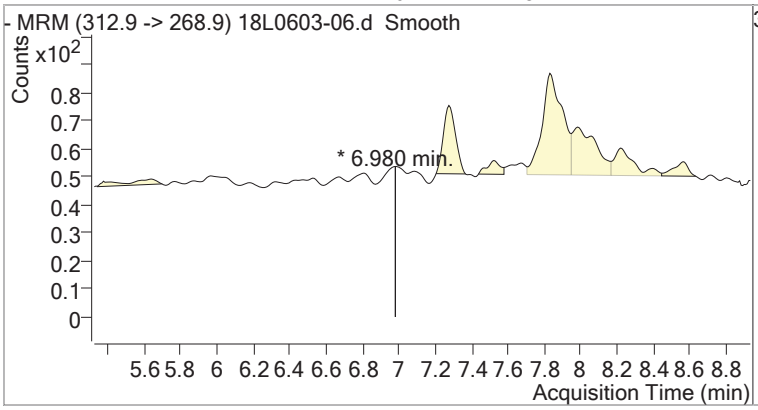
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	11164.1046	7.27	0.33	16615				

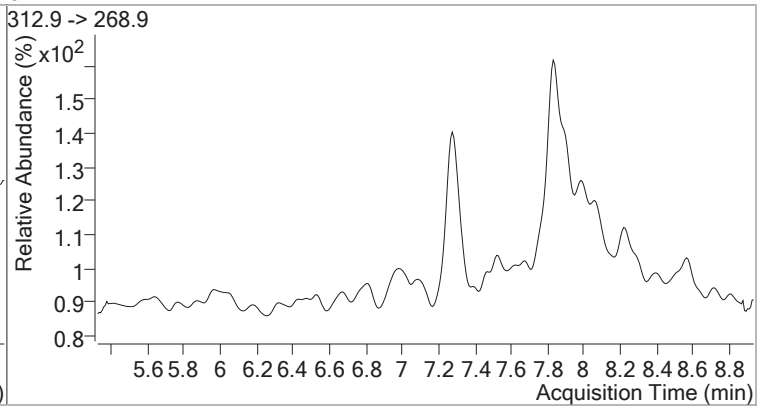




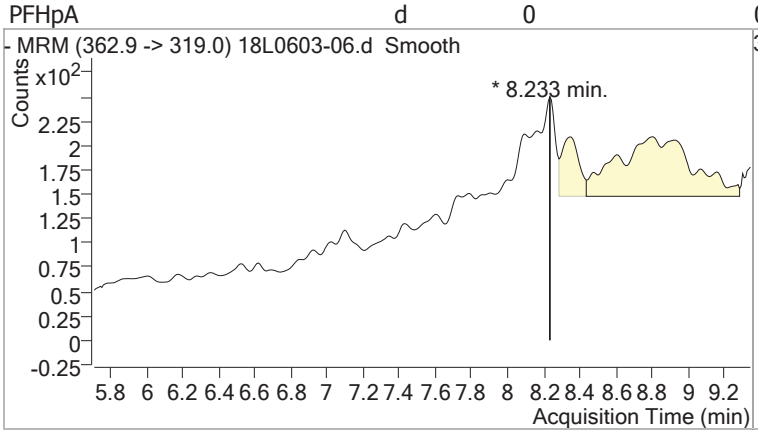


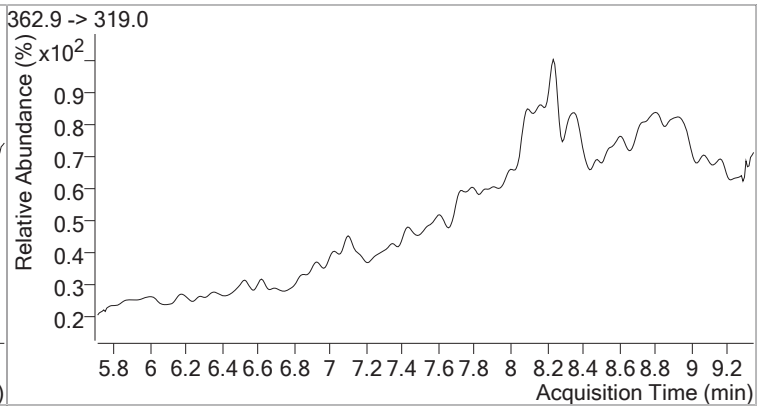
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	d	0		0				



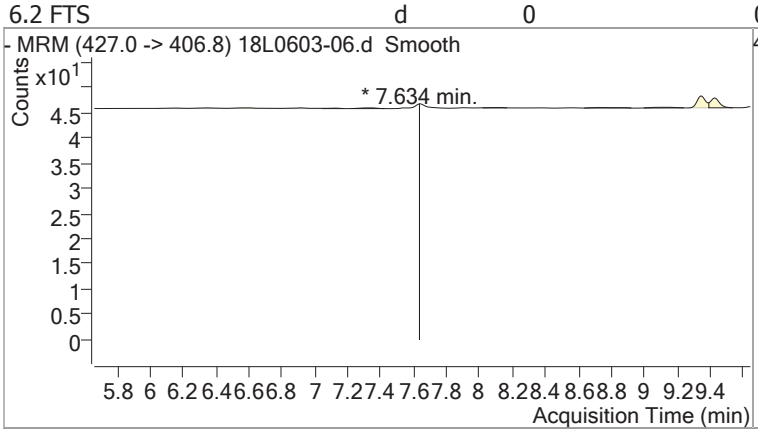


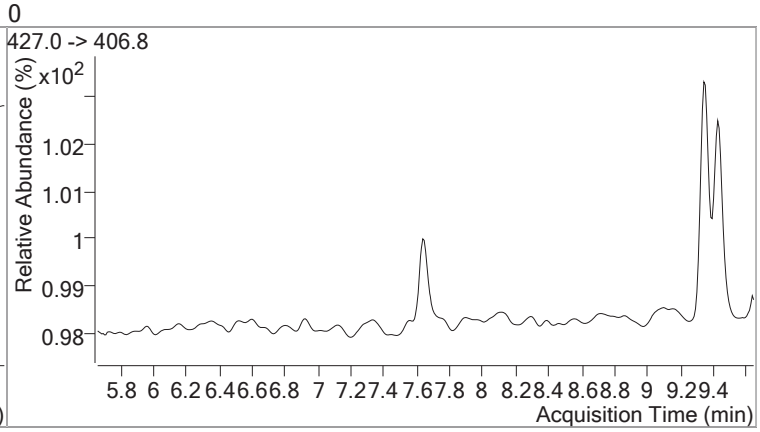
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	d	0		0				



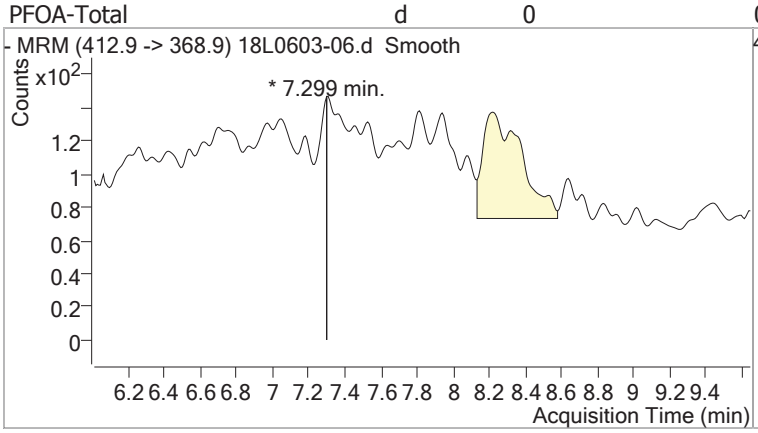


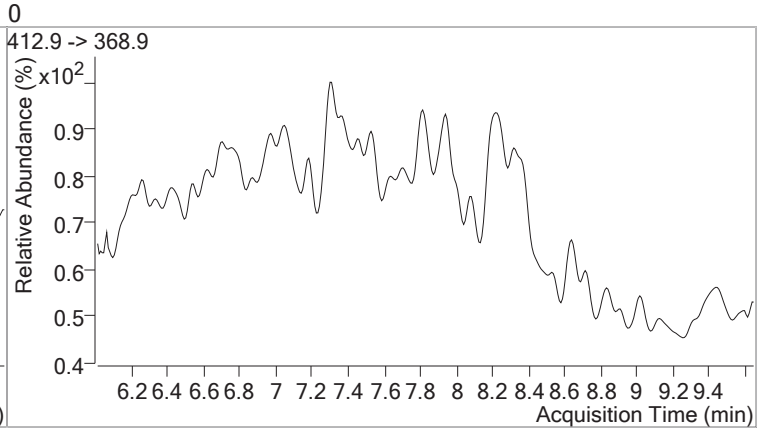
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	d	0		0				



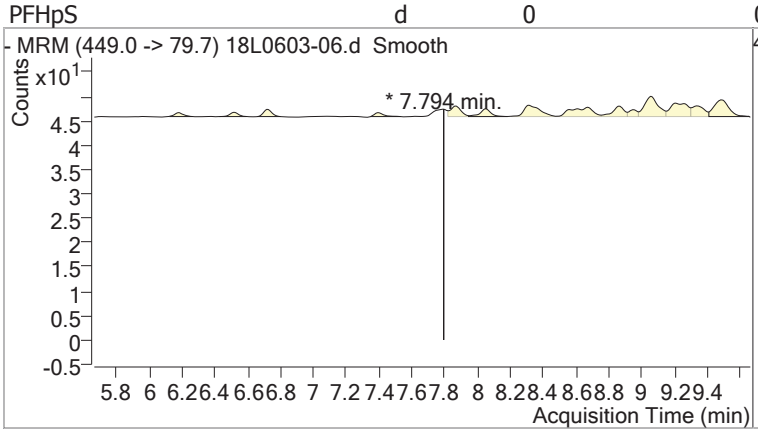


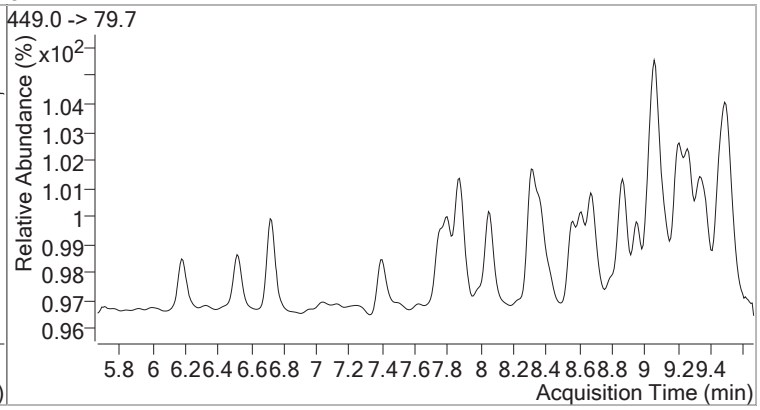
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	d	0		0				



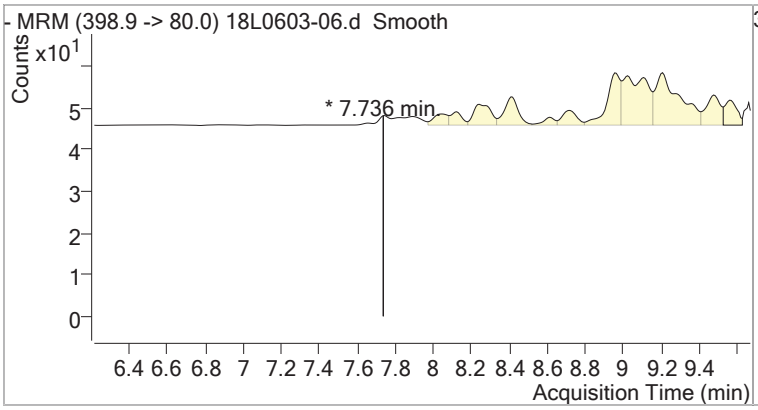


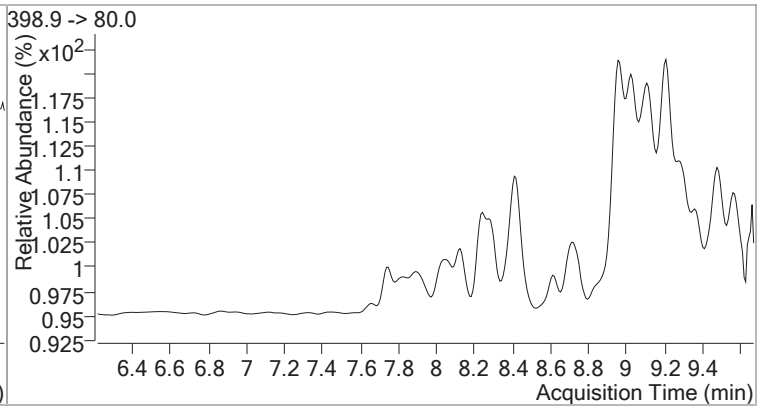
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	d	0		0				



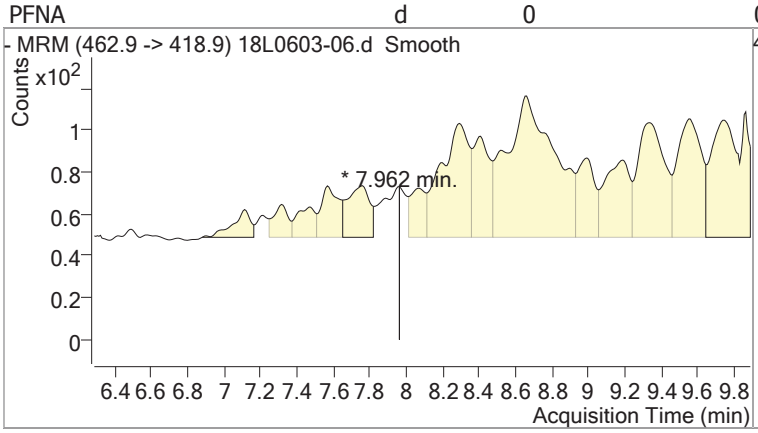


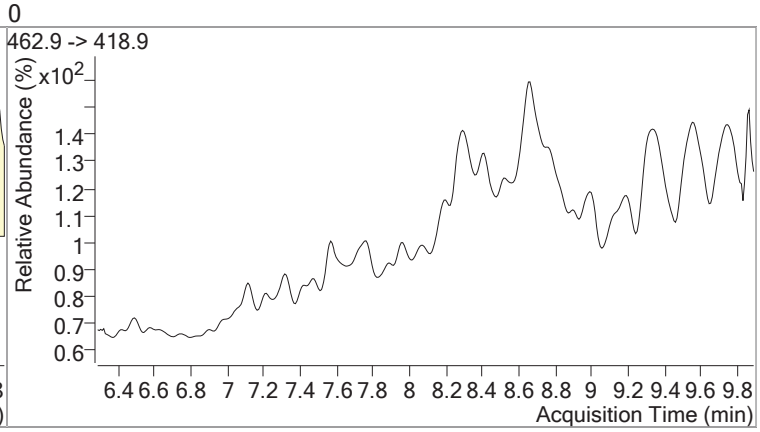
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	d	0		0				



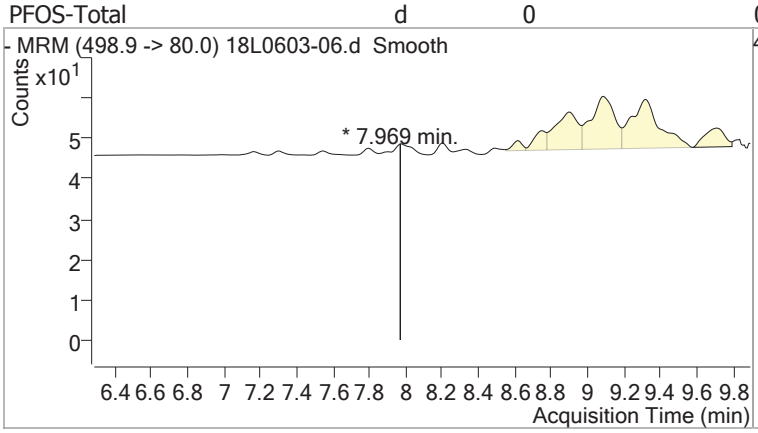


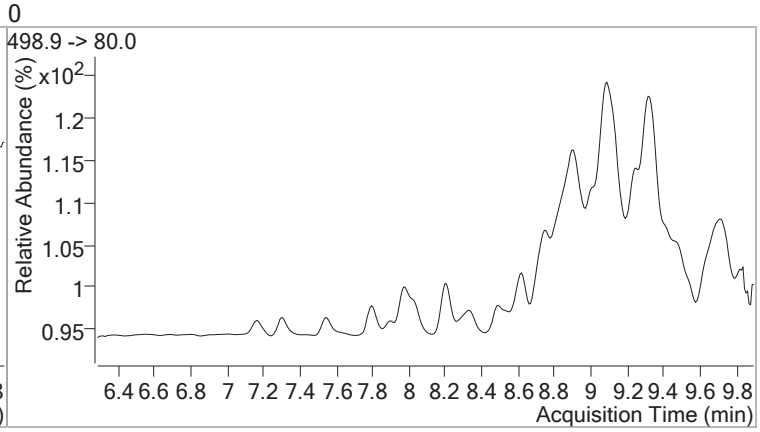
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	d	0		0				



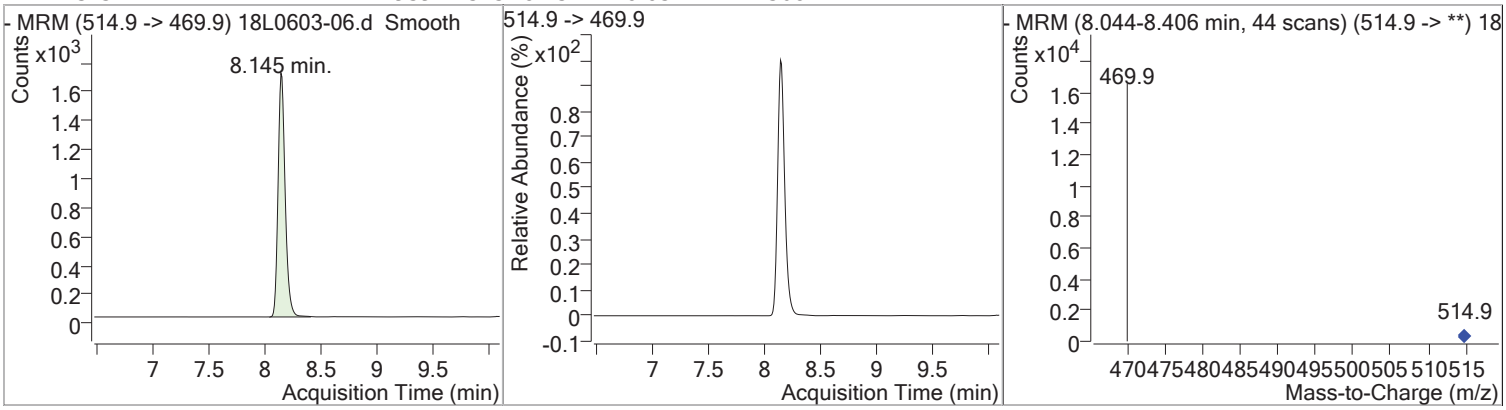


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	d	0		0				

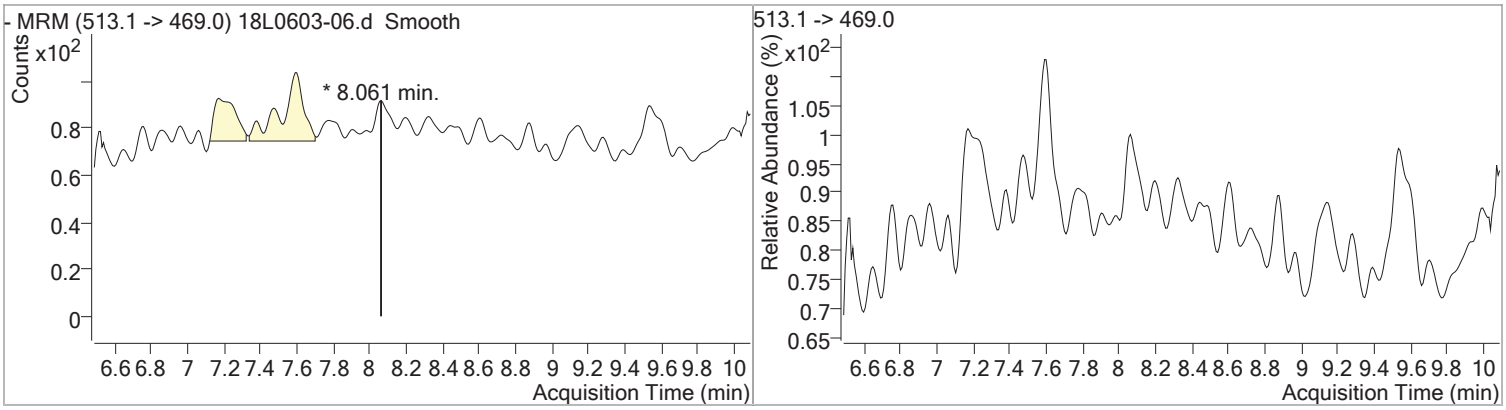




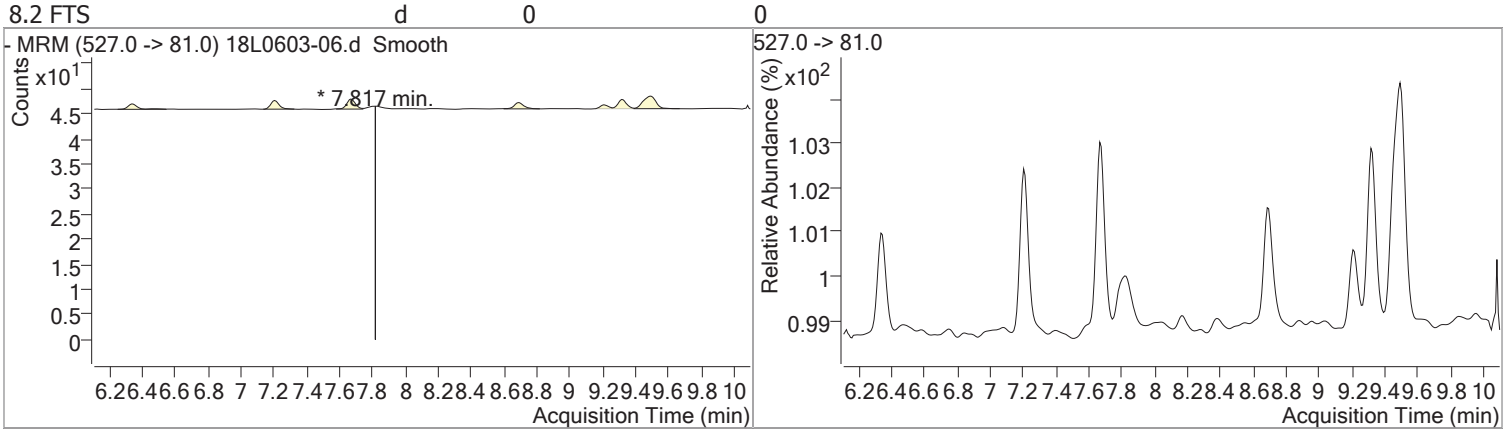
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	9392.7525	8.15	0.05	7368				



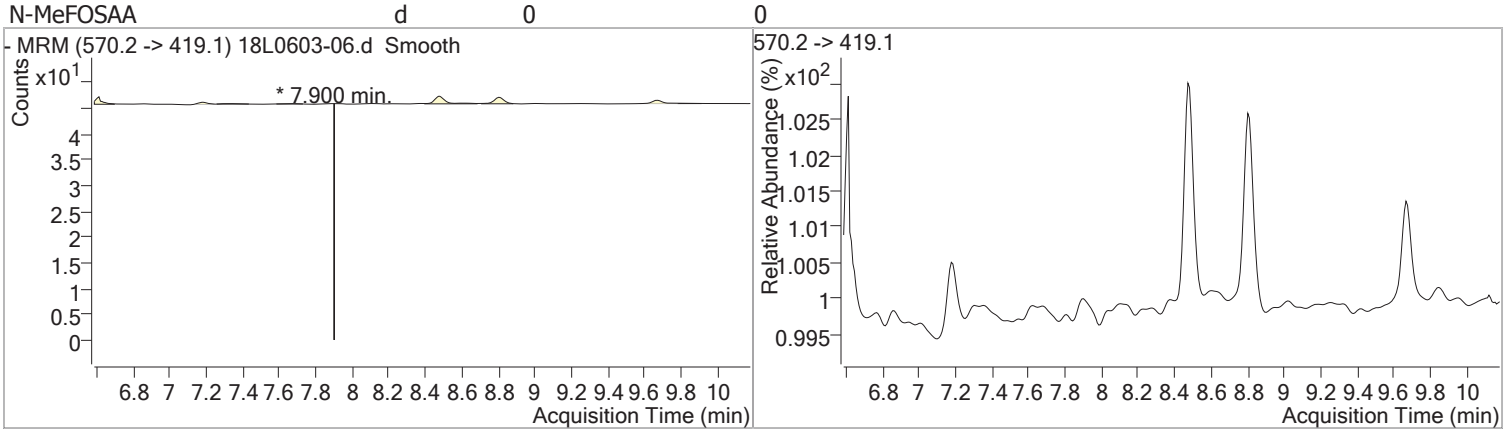
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	d	0		0				



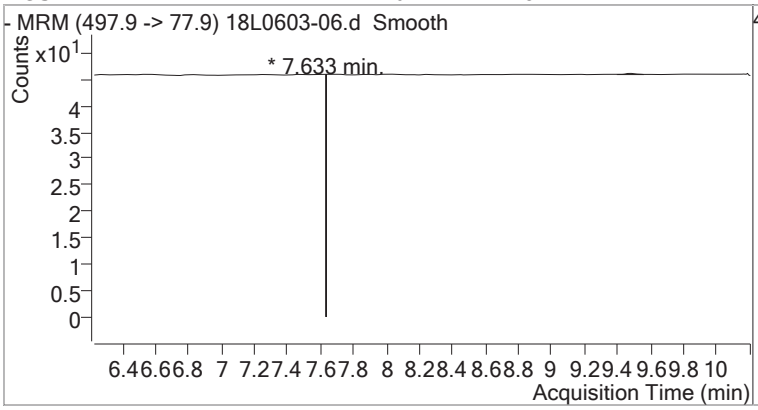
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	d	0		0				

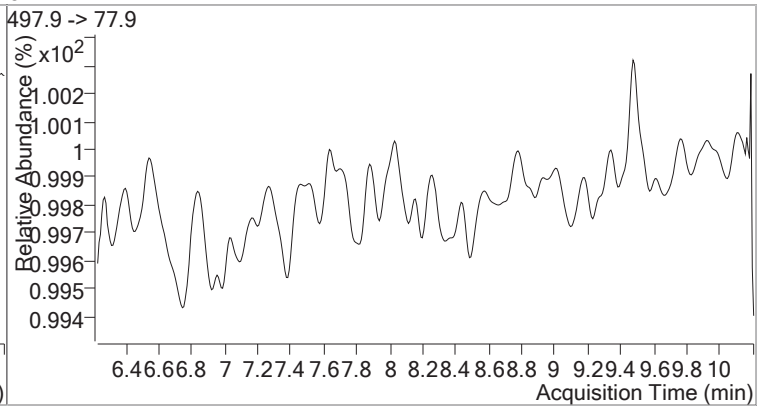


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	d	0		0				

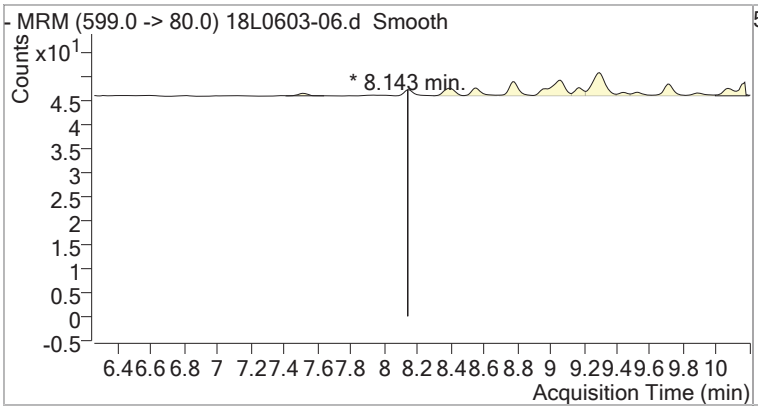


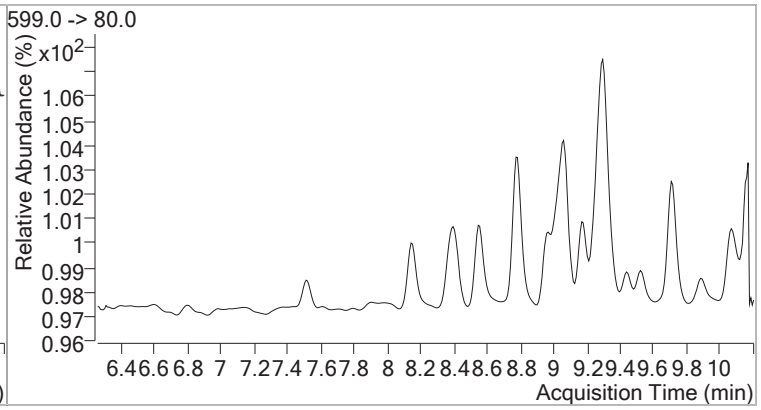
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	d	0		0				



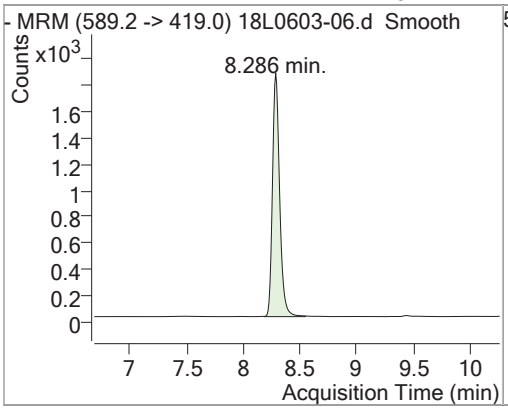


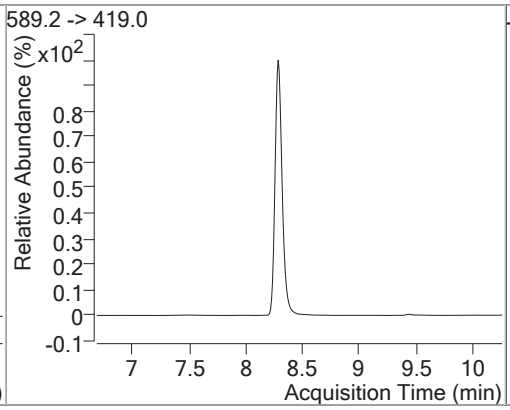
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	d	0		0				

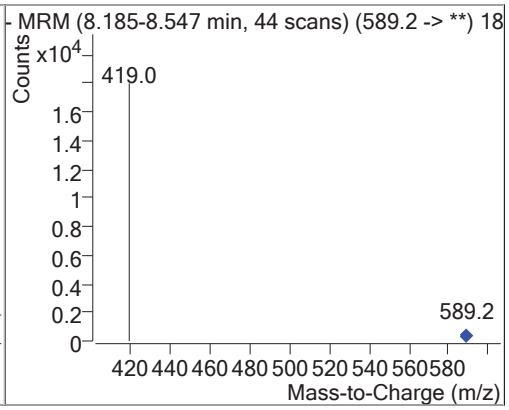




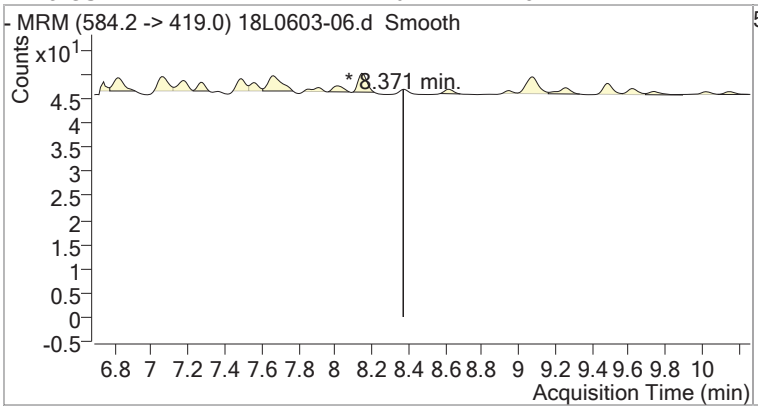
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	35113.1190	8.29	0.02	8078				

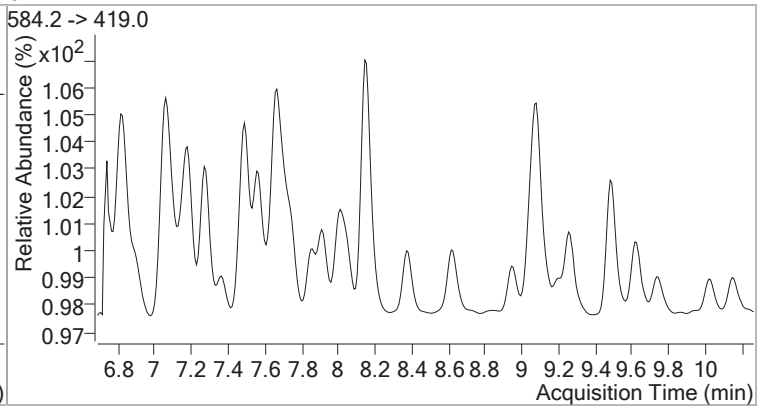




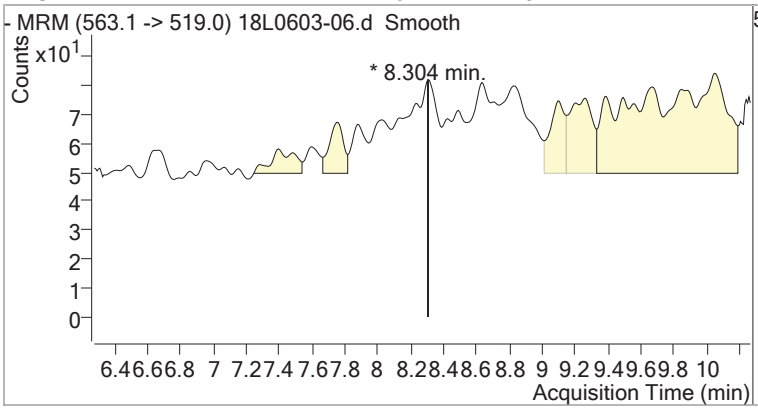


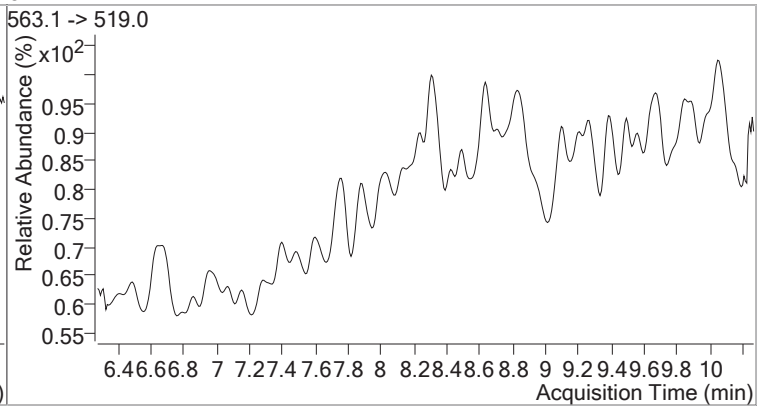
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	d	0		0				



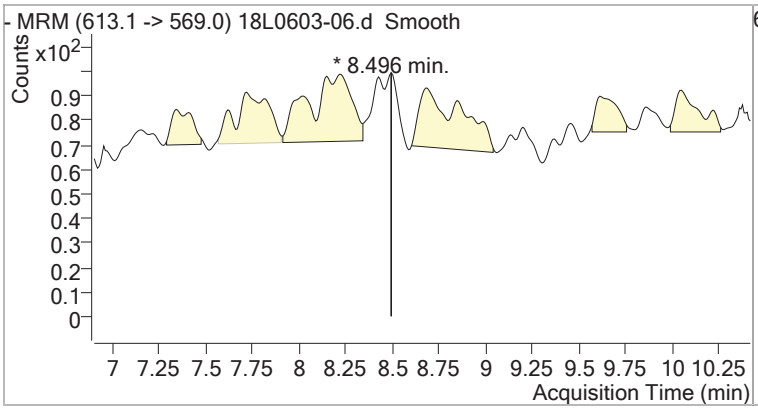


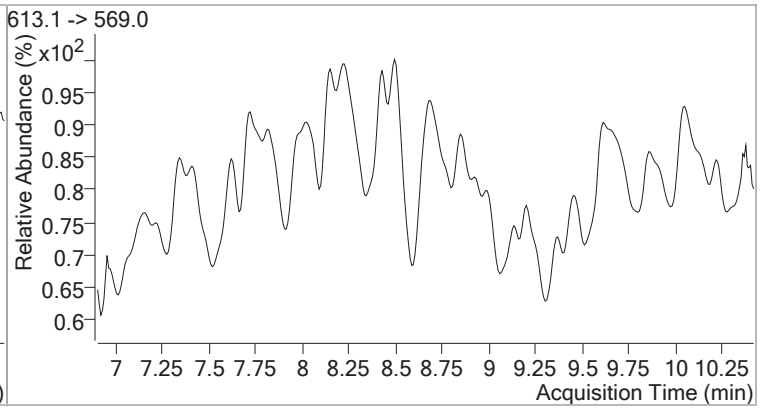
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	d	0		0				



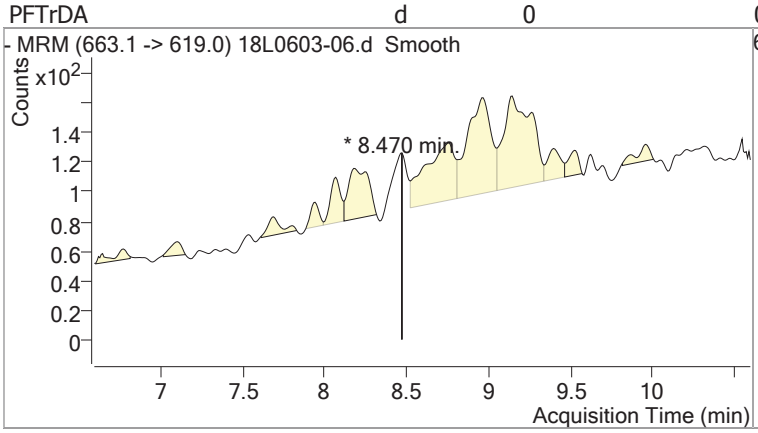


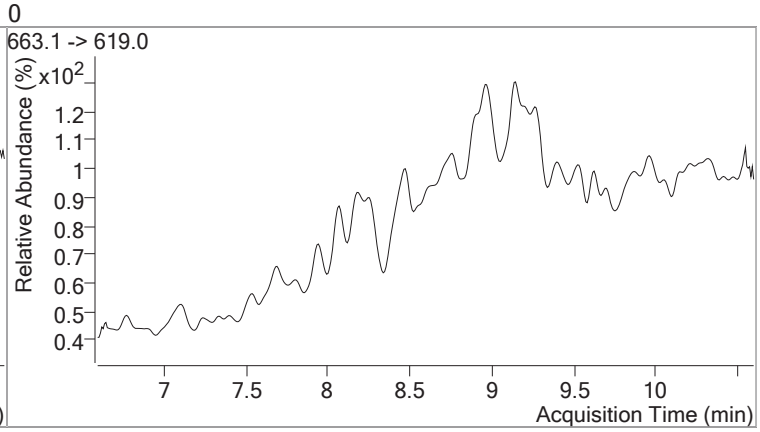
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	d	0		0				



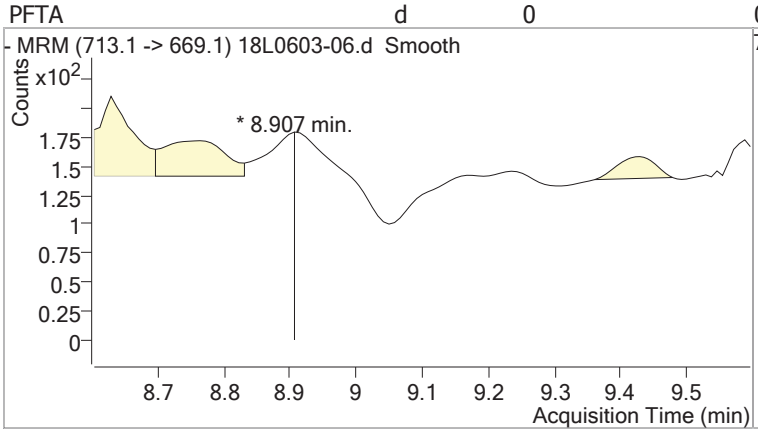


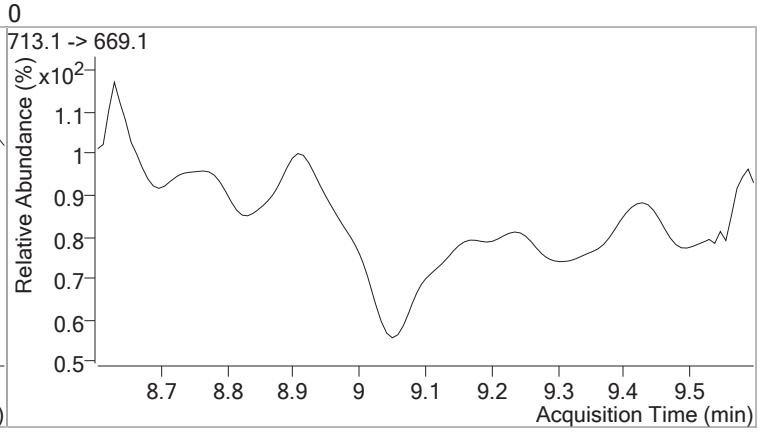
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	d	0		0				





Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	d	0		0				





1 - FORM I
ANALYSIS DATA SHEET

equipment blank

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Equipment Blank Water	Laboratory ID:	18L0603-07	File ID:	lims export files full-012
Sampled:	12/12/18 12:55	Prepared:	12/24/18 08:00	Analyzed:	12/27/18 12:50
Solids:		Preparation:	EPA 537	Dilution:	1
Initial/Final:	250 mL / 1 mL				
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
Instrument:	HPLC1				

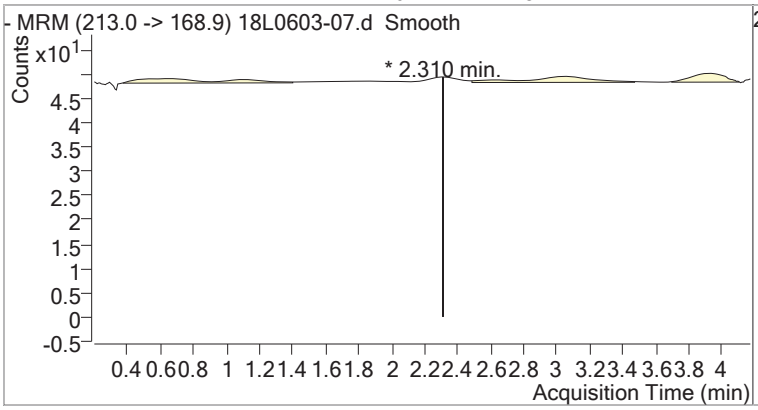
CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)		2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)		2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)		2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)		2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)		2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)		2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)		2.0	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)		2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)		2.0	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		2.0	2.0	
	NMeFOSAA		2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		2.0	2.0	
	NEtFOSAA		2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		2.0	2.0	

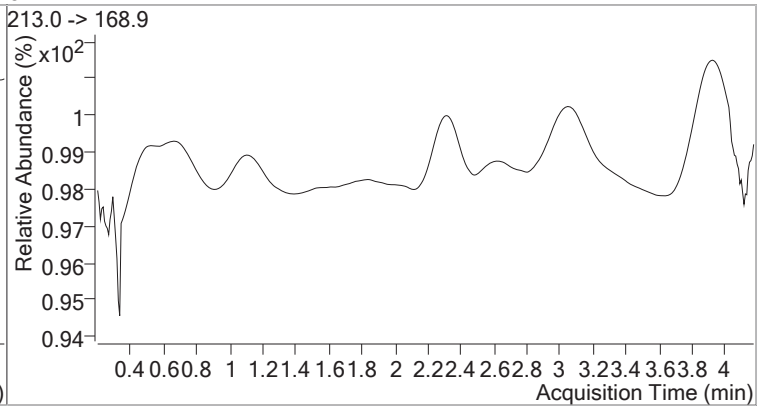
Data File	18L0603-07.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/27/2018 12:50:53 PM
Sample Name	18L0603-07	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File	122018.m	Comment	
Tune File		Tune Date	
Batch Name	1.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	7.870	416.9 -> 371.9	13369	10000.0000	pg/ml		0.220
M PFOS C13	8.053	502.9 -> 80.0	10225	28700.0000	pg/ml		0.153
M d3-N-MeFOSAA	8.278	573.2 -> 419.0	12195	40000.0000	pg/ml		0.094
System Monitoring Compounds							
S PFHxA C13	7.325	314.9 -> 269.9	16870	10264.5949	pg/ml		0.388
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 102.65%			
S PFDA C13	8.204	514.9 -> 469.9	8189	9453.6466	pg/ml		0.111
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 94.54%			
S d5-N-MeFOSAA	8.345	589.2 -> 419.0	10676	40019.9663	pg/ml		0.077
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 100.05%			
Target Compounds							QValue
T PFBA	2.310	213.0 -> 168.9	0	0.0000	pg/ml	md	1
T PFPeA	6.468	263.0 -> 219.0	0	0.0000	pg/ml	md	1
T PFBS	6.611	298.9 -> 80.0	0	0.0000	pg/ml	md	1
T PFHxA	6.854	312.9 -> 268.9	0	0.0000	pg/ml	md	1
T PFHpA	7.737	362.9 -> 319.0	0	0.0000	pg/ml	md	1
T 6.2 FTS	7.500	427.0 -> 406.8	0	0.0000	pg/ml	md	1
T PFOA-Total	7.871	412.9 -> 368.9	0	0.0000	pg/ml	md	1
T PFHpS	7.651	449.0 -> 79.7	0	0.0000	pg/ml	md	1
T PFHxS-Total	7.661	398.9 -> 80.0	0	0.0000	pg/ml	md	1
T PFNA	7.524	462.9 -> 418.9	0	0.0000	pg/ml	md	1
T PFOS-Total	7.952	498.9 -> 80.0	0	0.0000	pg/ml	md	1
T PFDA	8.221	513.1 -> 469.0	0	0.0000	pg/ml	md	1
T 8.2 FTS	7.959	527.0 -> 81.0	0	0.0000	pg/ml	md	1
T N-MeFOSAA	8.270	570.2 -> 419.1	0	0.0000	pg/ml	md	1
T FOSA	8.331	497.9 -> 77.9	0	0.0000	pg/ml	md	1
T PFDS	8.143	599.0 -> 80.0	0	0.0000	pg/ml	md	1
T N-EtFOSAA	8.244	584.2 -> 419.0	0	0.0000	pg/ml	md	1
T PFUnA	8.598	563.1 -> 519.0	0	0.0000	pg/ml	md	1
T PFDoA	8.210	613.1 -> 569.0	0	0.0000	pg/ml	md	1
T PFTrDA	9.083	663.1 -> 619.0	0	0.0000	pg/ml	md	1
T PFTA	8.789	713.1 -> 669.1	0	0.0000	pg/ml	md	1

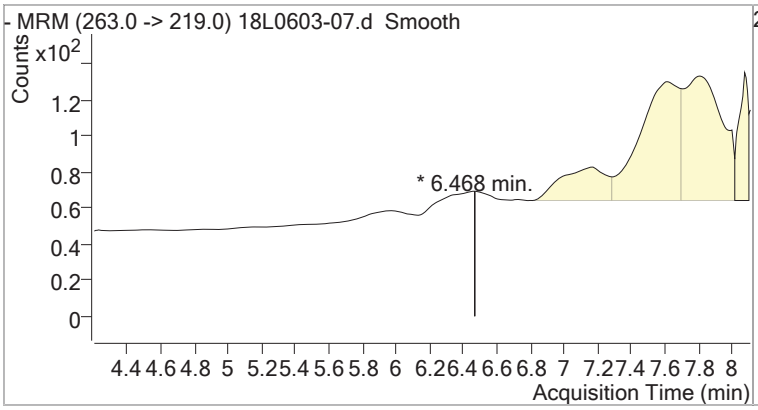
(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

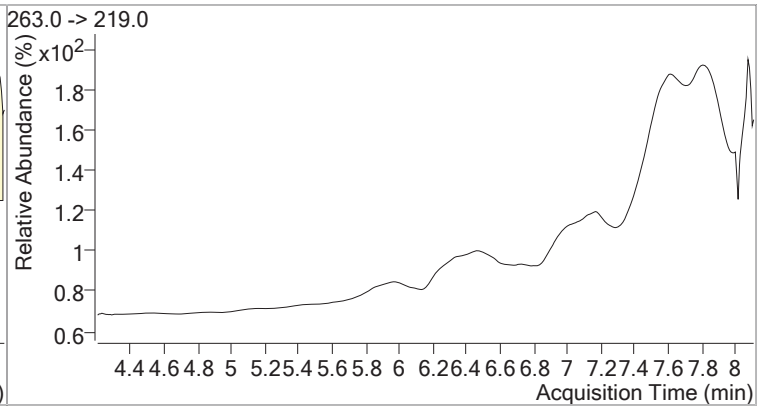
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	d	0		0				



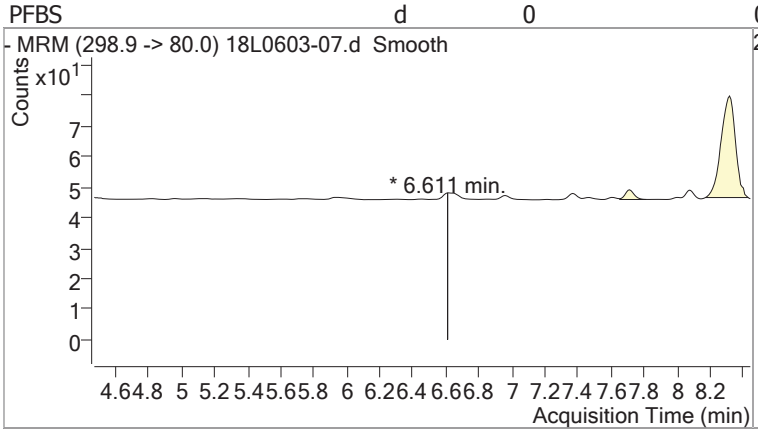


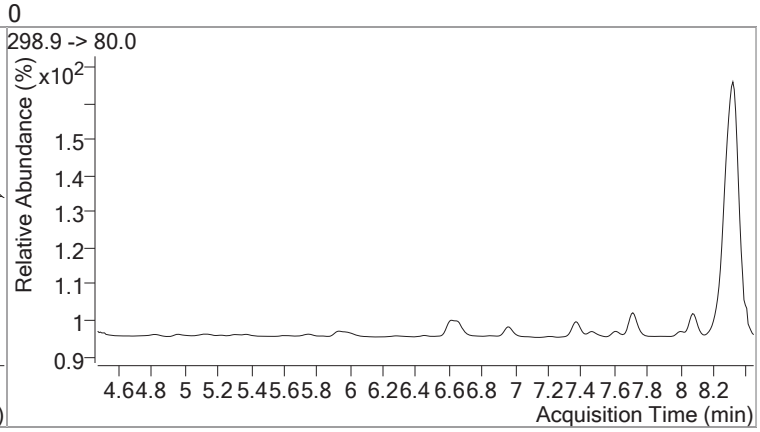
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	d	0		0				



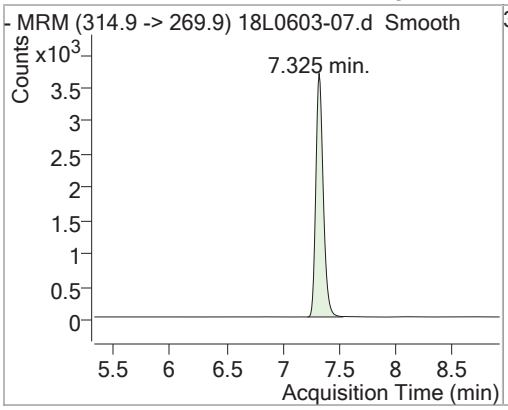


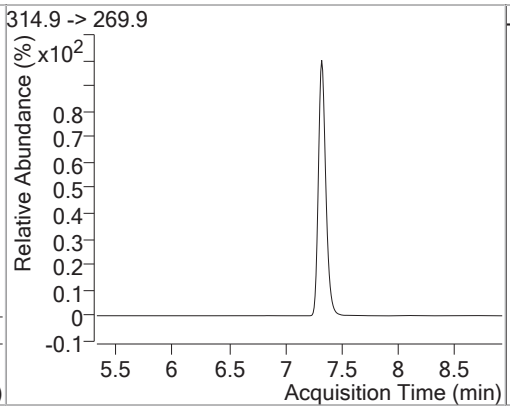
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	d	0		0				

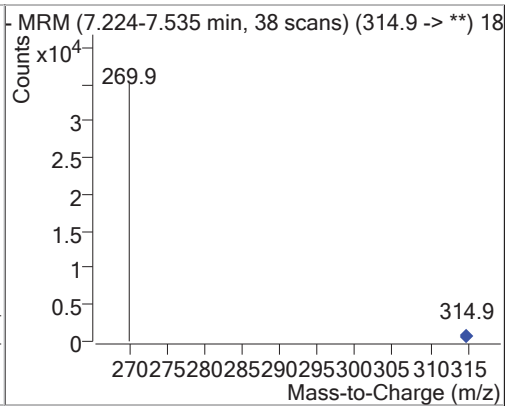




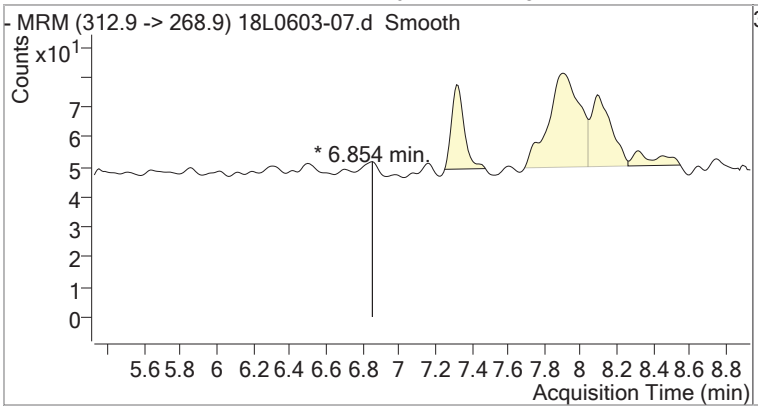
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	10264.5949	7.32	0.39	16870				

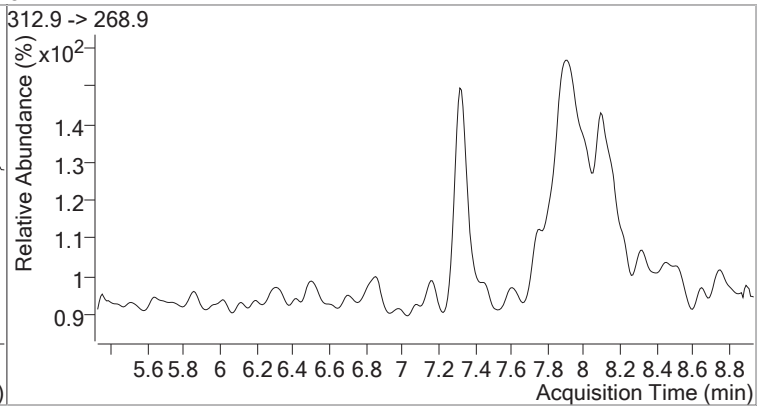




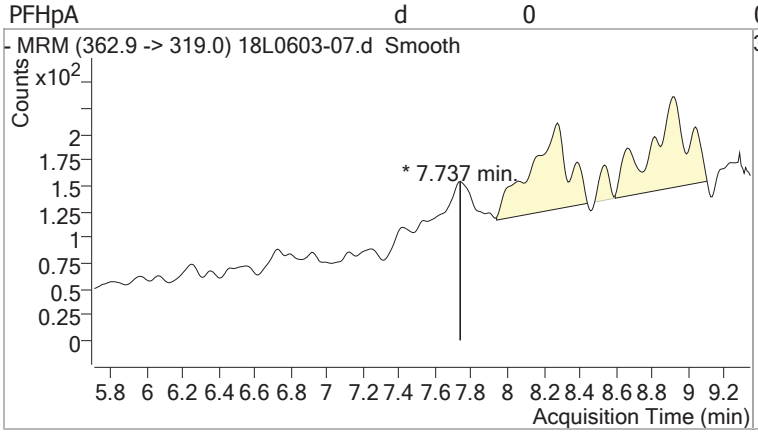


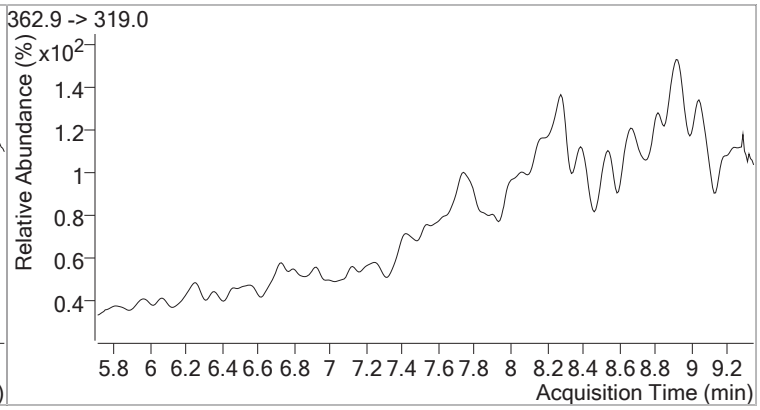
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	d	0		0				



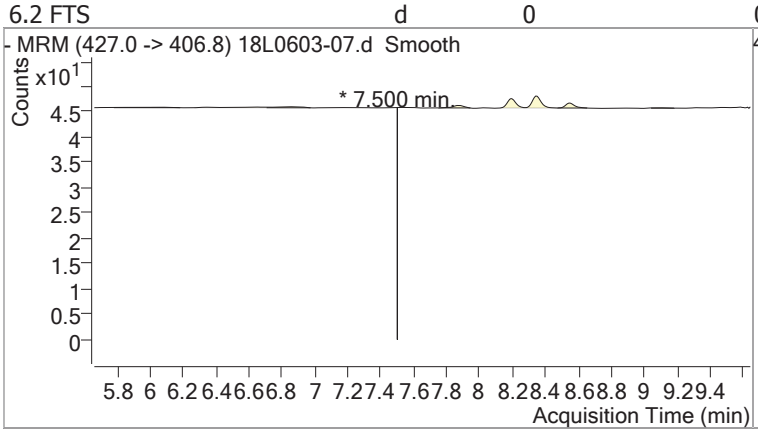


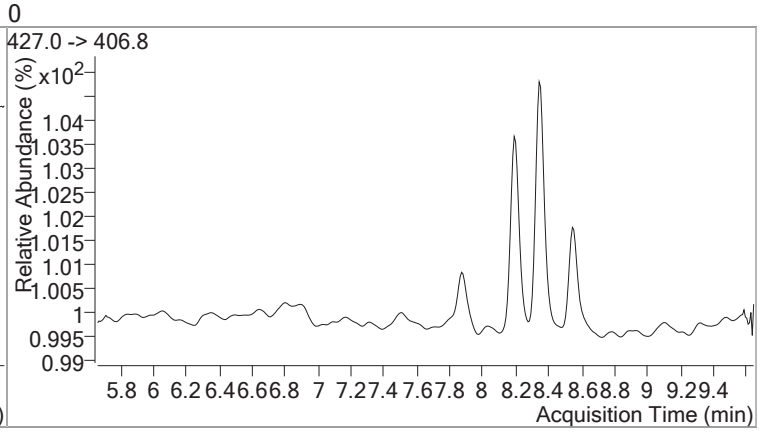
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	d	0		0				



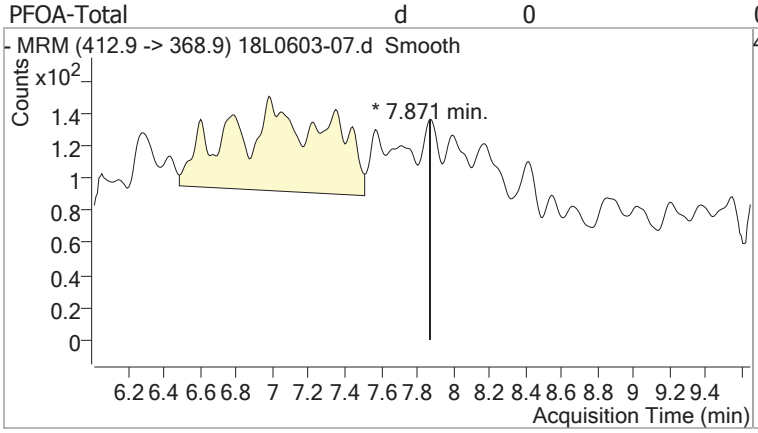


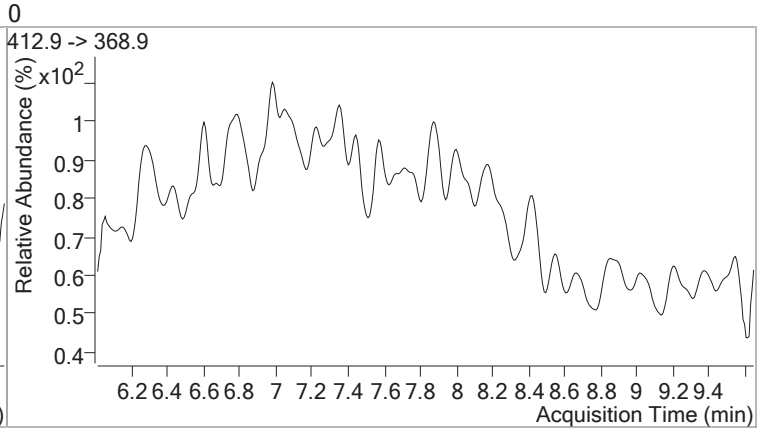
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	d	0		0				



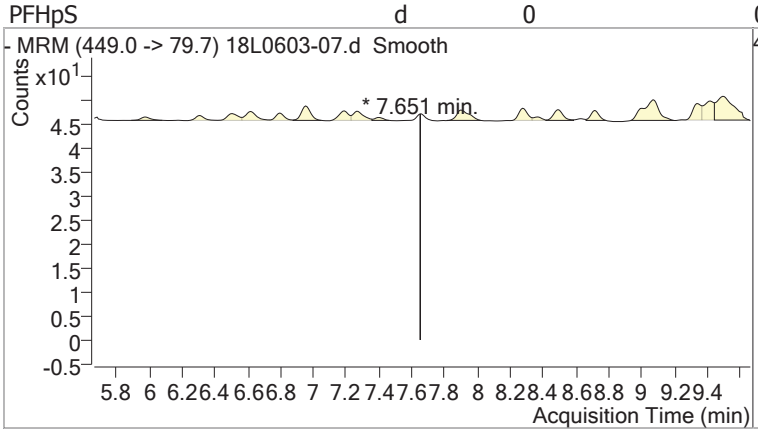


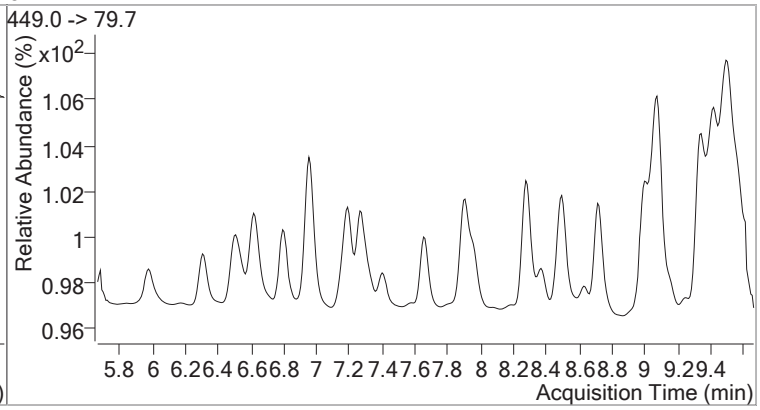
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	d	0		0				



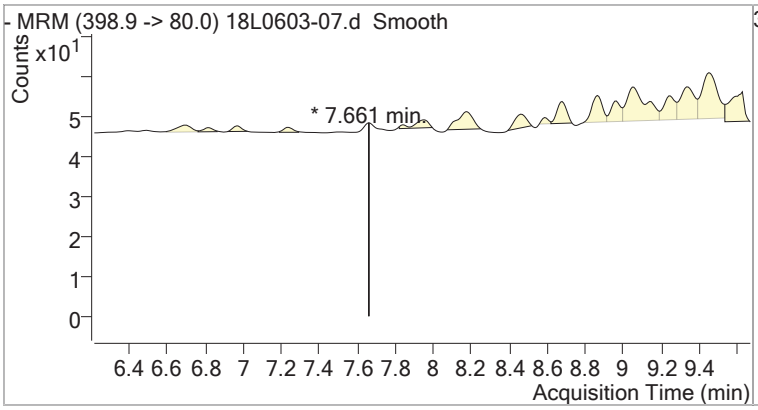


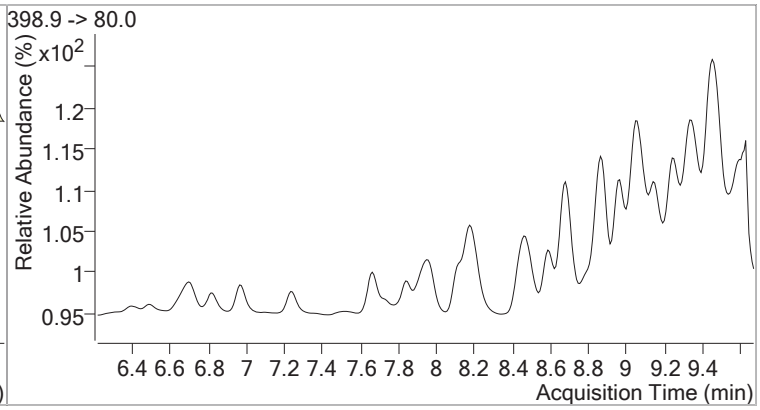
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	d	0		0				



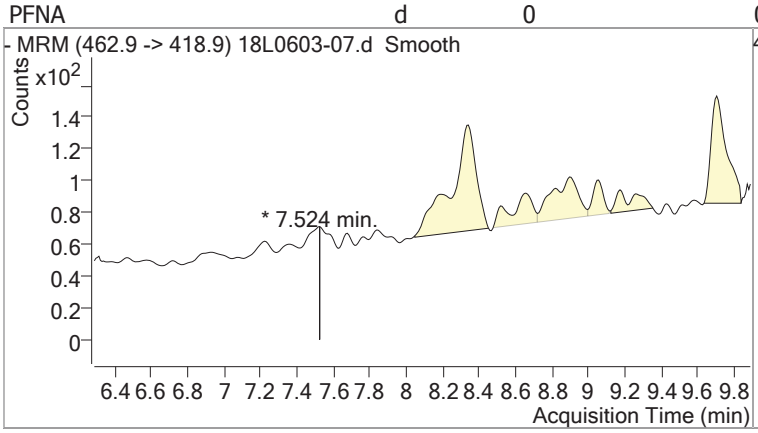


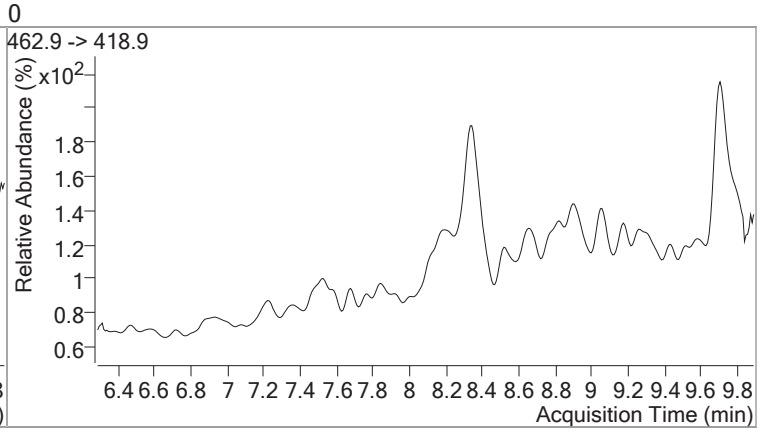
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	d	0		0				



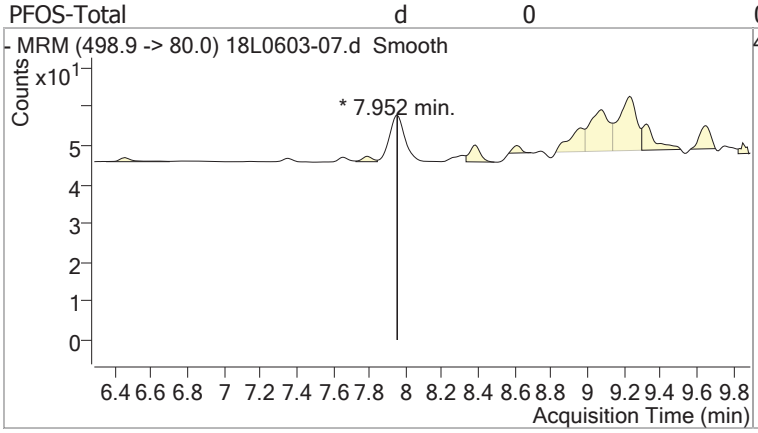


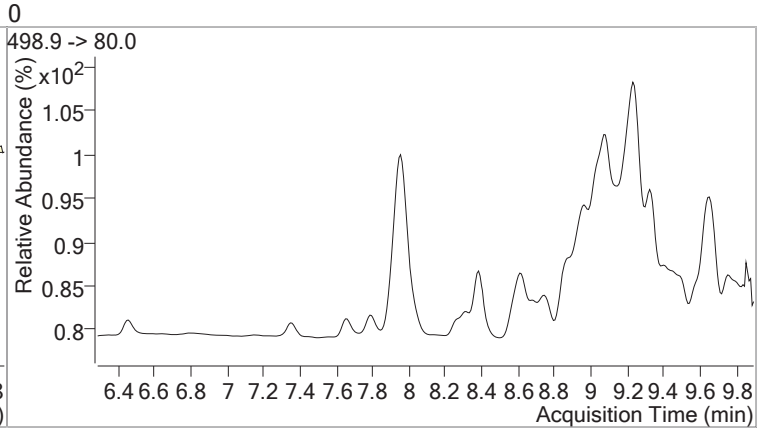
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	d	0		0				



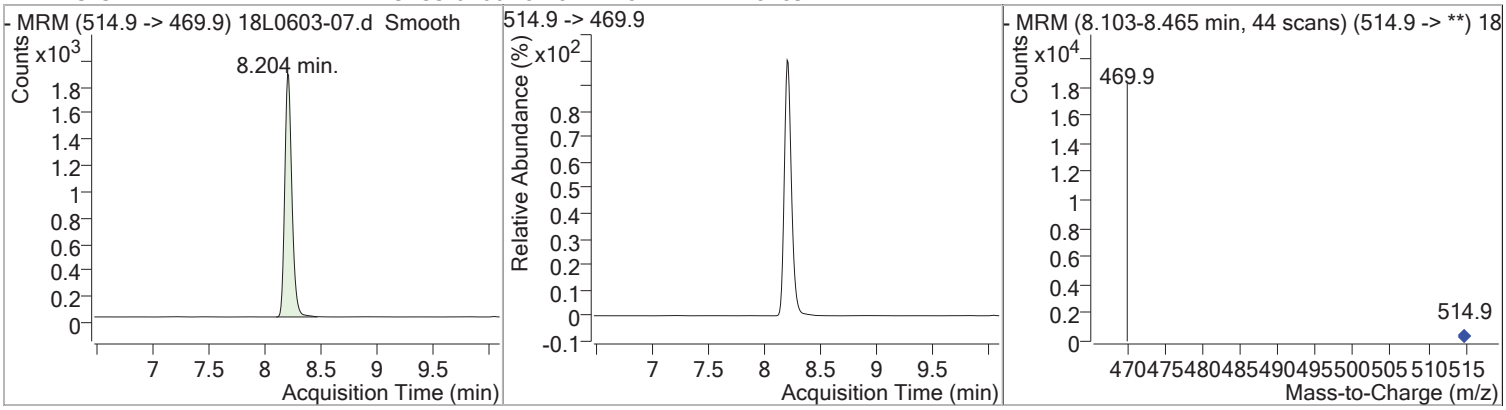


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	d	0		0				

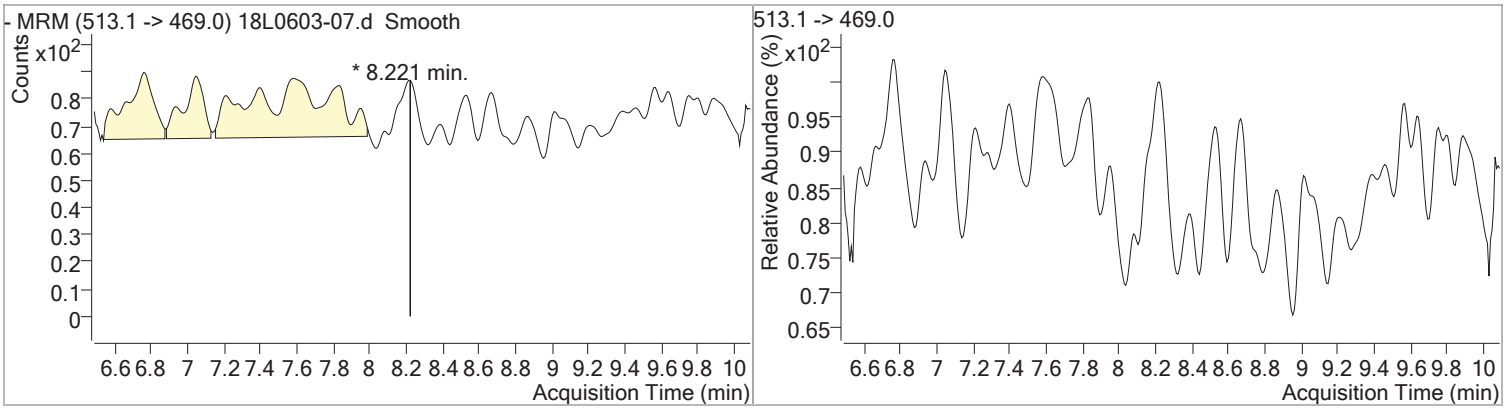




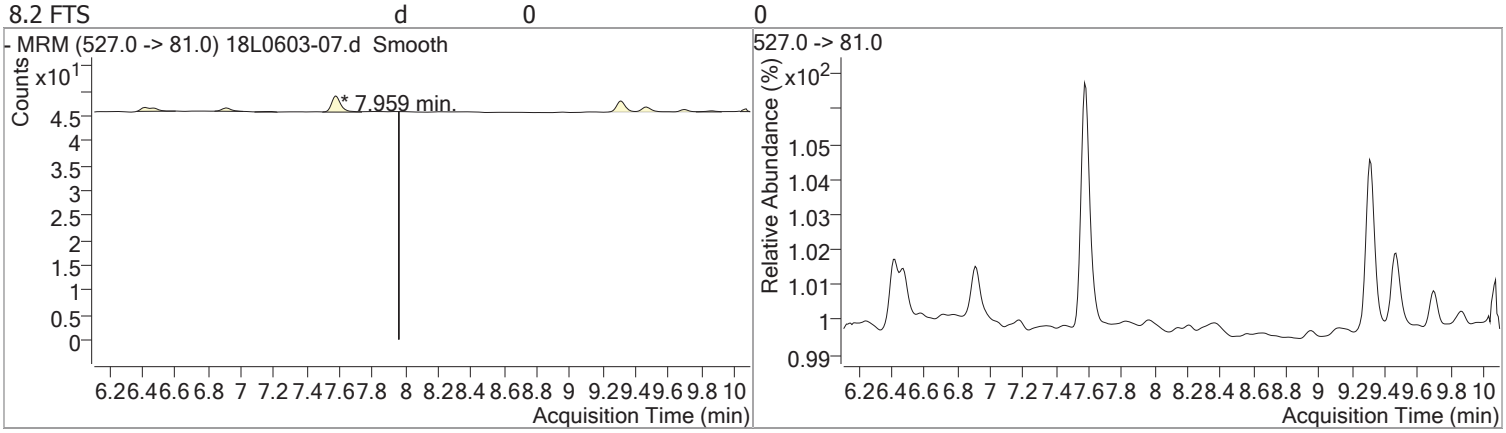
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	9453.6466	8.20	0.11	8189				



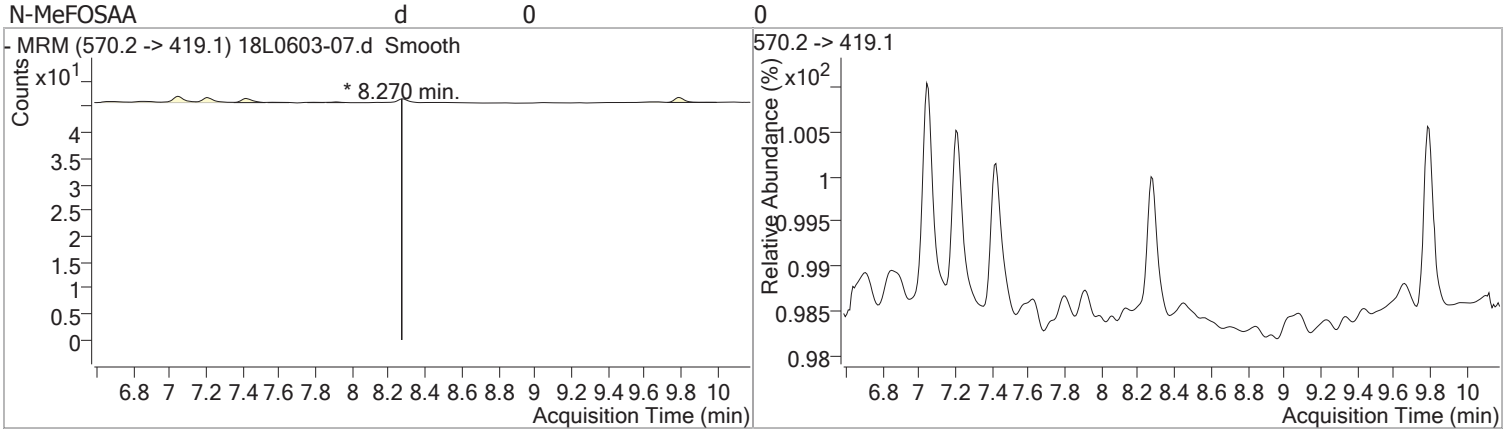
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	d	0		0				



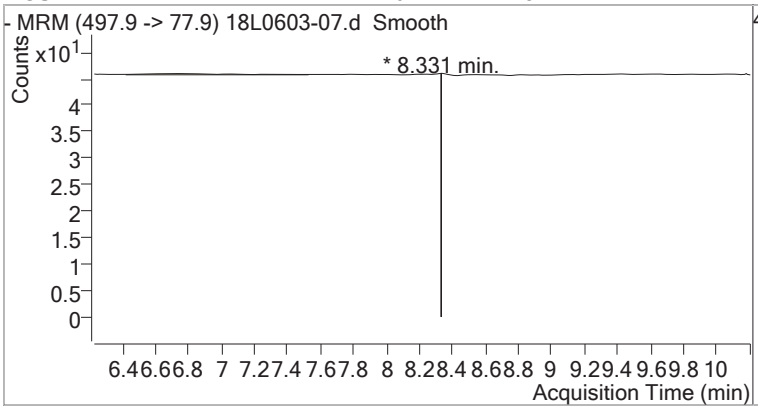
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	d	0		0				

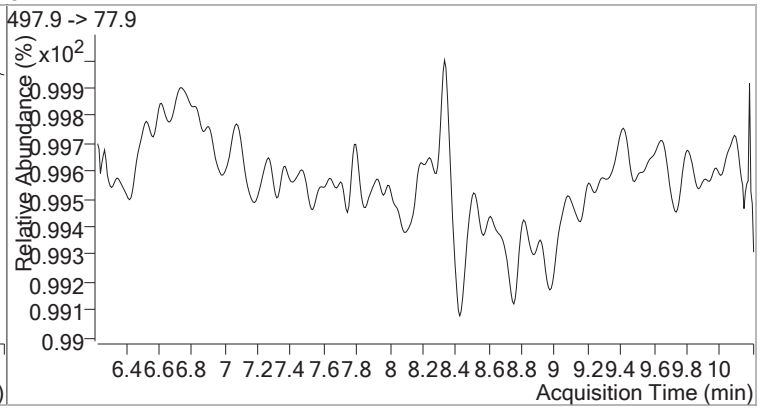


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	d	0		0				

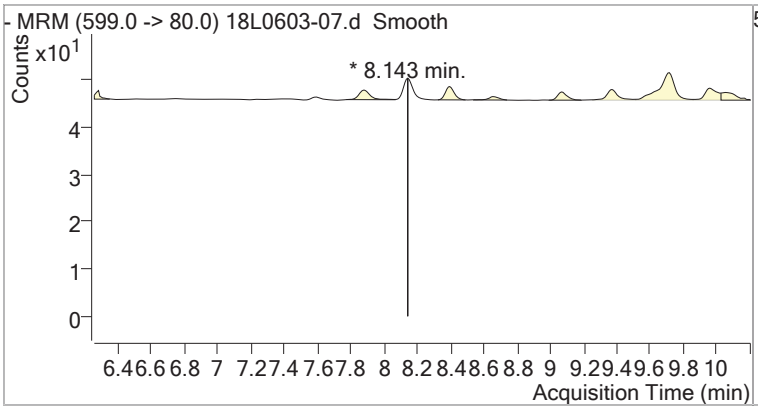


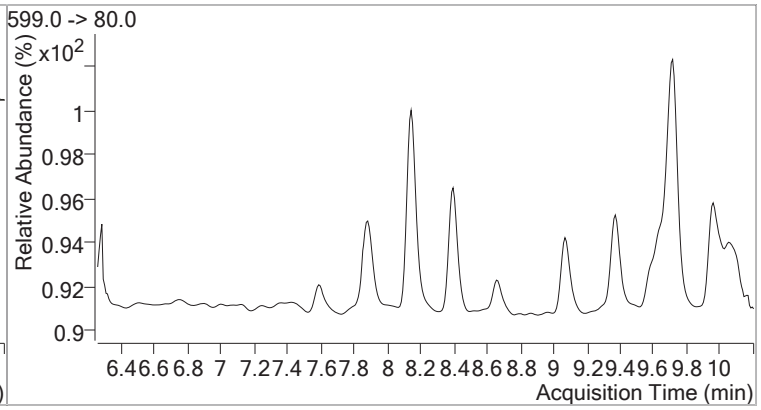
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	d	0		0				



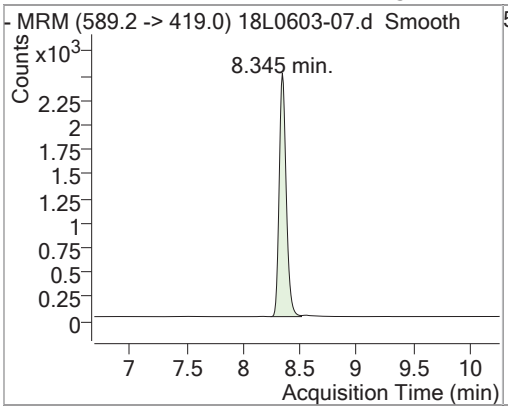


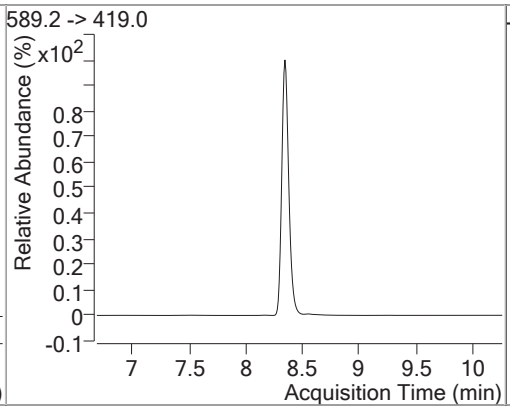
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	d	0		0				

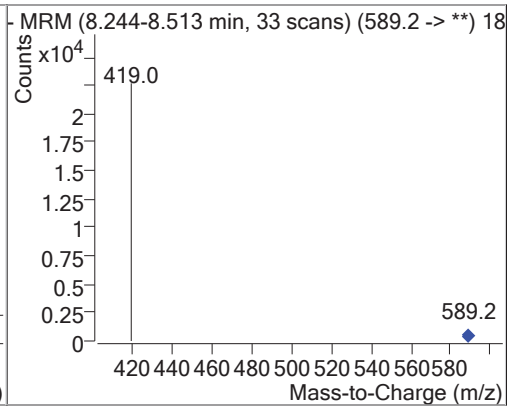




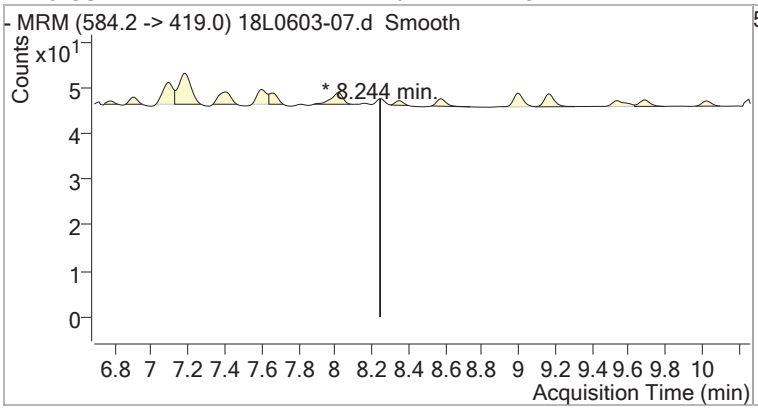
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	40019.9663	8.35	0.08	10676				

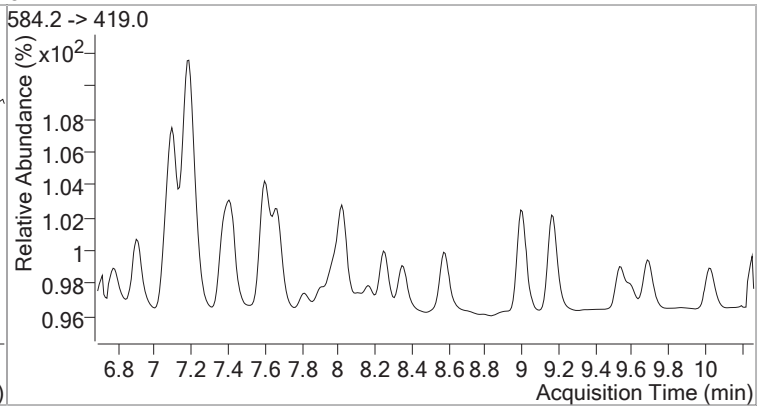




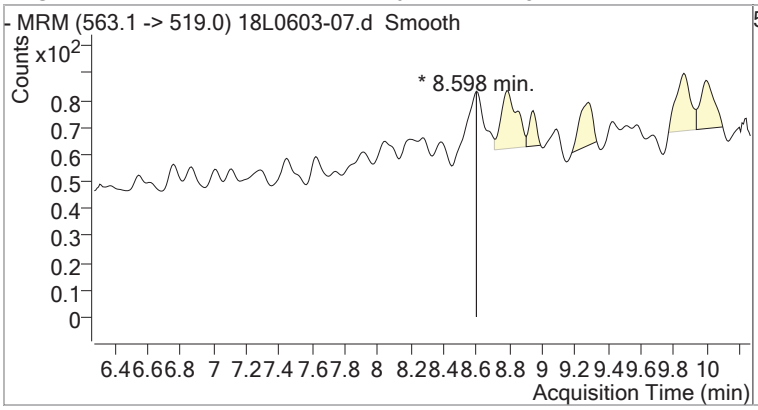


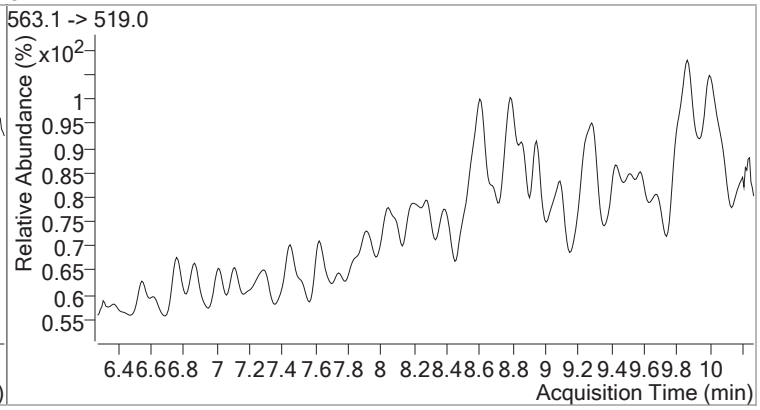
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	d	0		0				



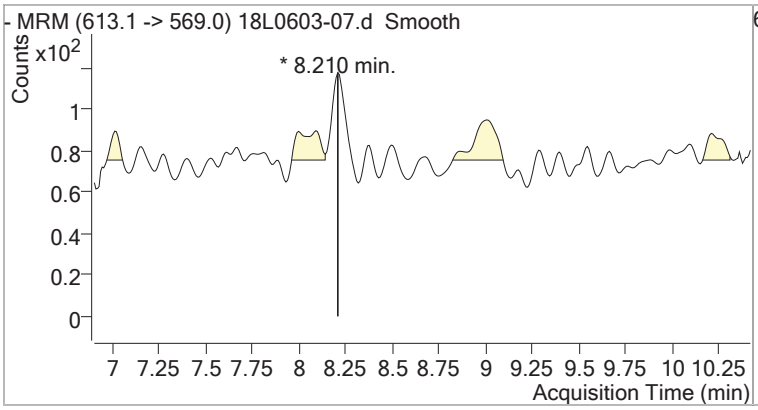


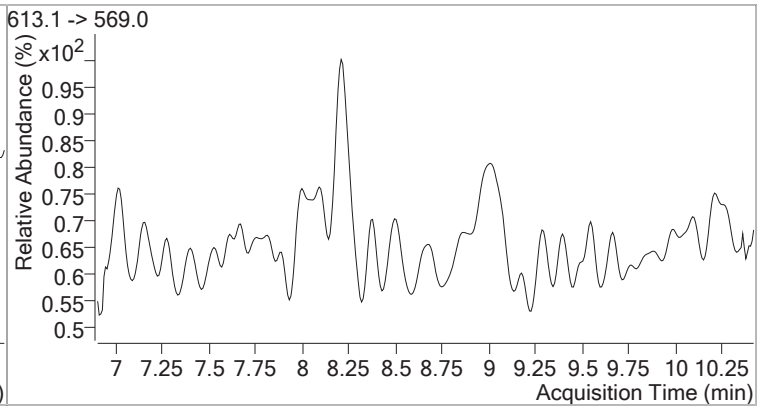
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	d	0		0				



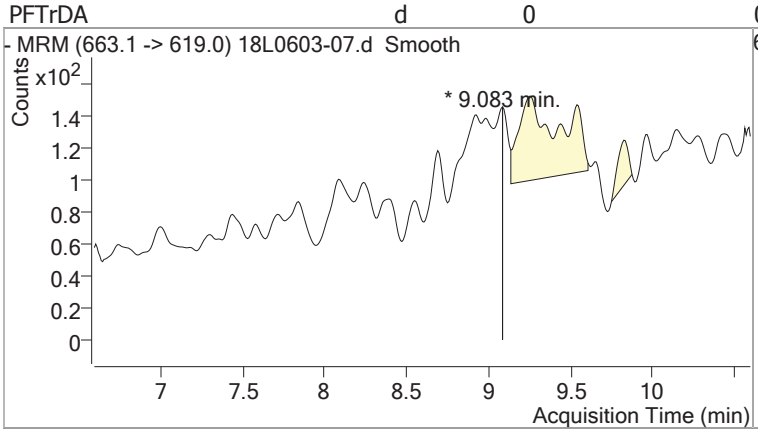


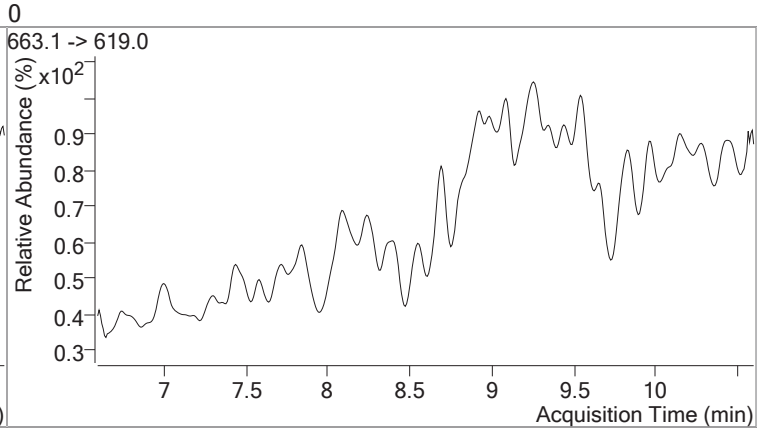
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	d	0		0				



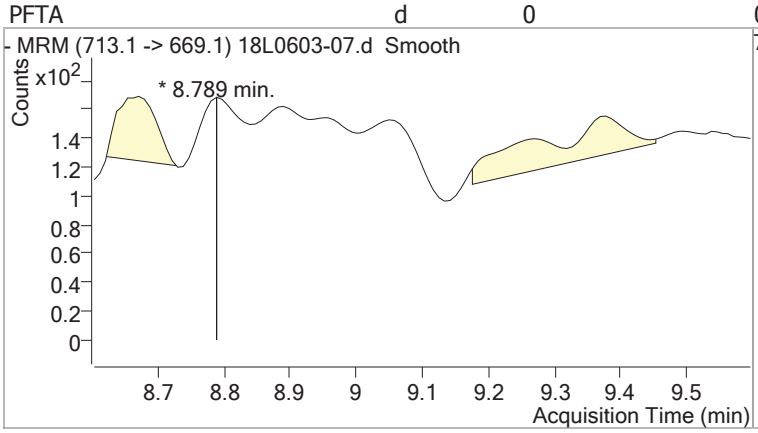


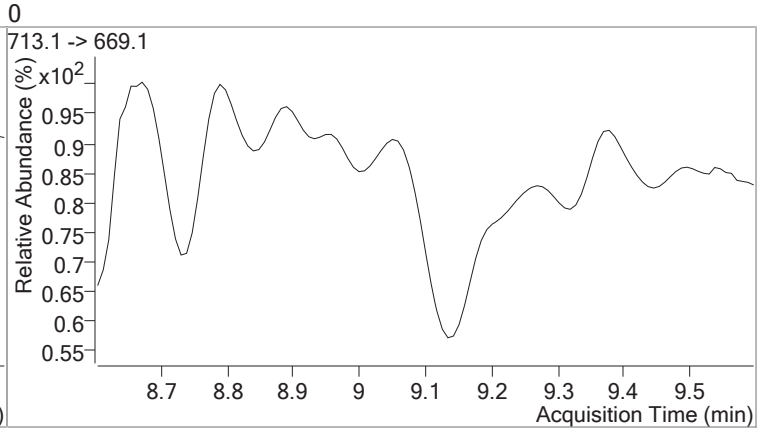
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	d	0		0				





Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	d	0		0				





1 - FORM I
ANALYSIS DATA SHEET

DUP

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-08	File ID:	lims export files full-013
Sampled:	12/12/18 00:00	Prepared:	12/24/18 08:00	Analyzed:	12/27/18 13:03
Solids:		Preparation:	EPA 537	Dilution:	1
Initial/Final:	250 mL / 1 mL				
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
Instrument:	HPLC1				

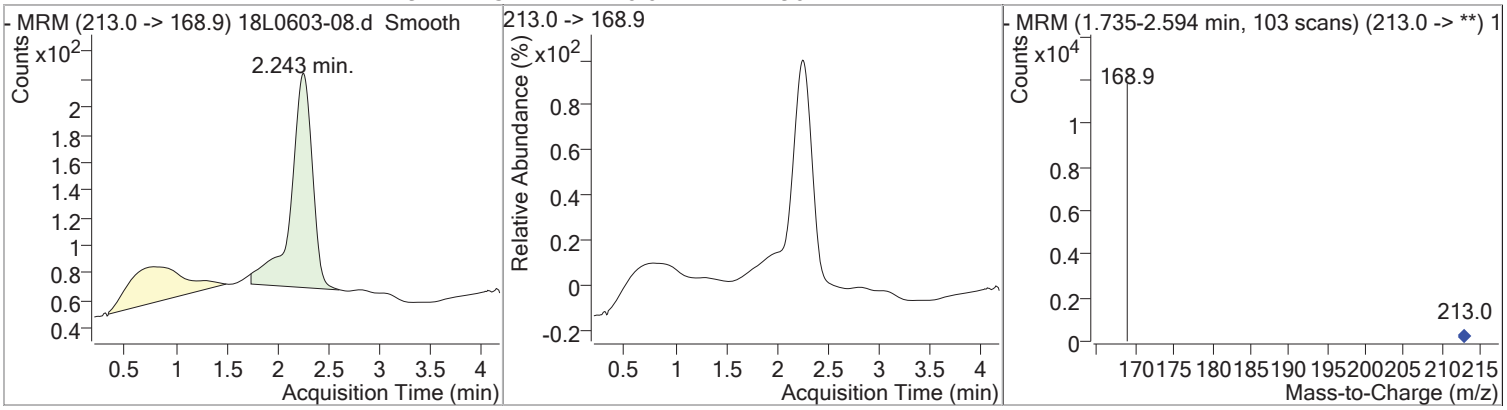
CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)	13	2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)	45	2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)	18	2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)	12	2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)		2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)	47	2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)		2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)		2.0	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	10	2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)	94	2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	21	2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)	4.1	2.0	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		2.0	2.0	
	NMeFOSAA		2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		2.0	2.0	
	NEtFOSAA		2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		2.0	2.0	

Data File	18L0603-08.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/27/2018 1:03:38 PM
Sample Name	18L0603-08	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File	122018.m	Comment	
Tune File		Tune Date	
Batch Name	1.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

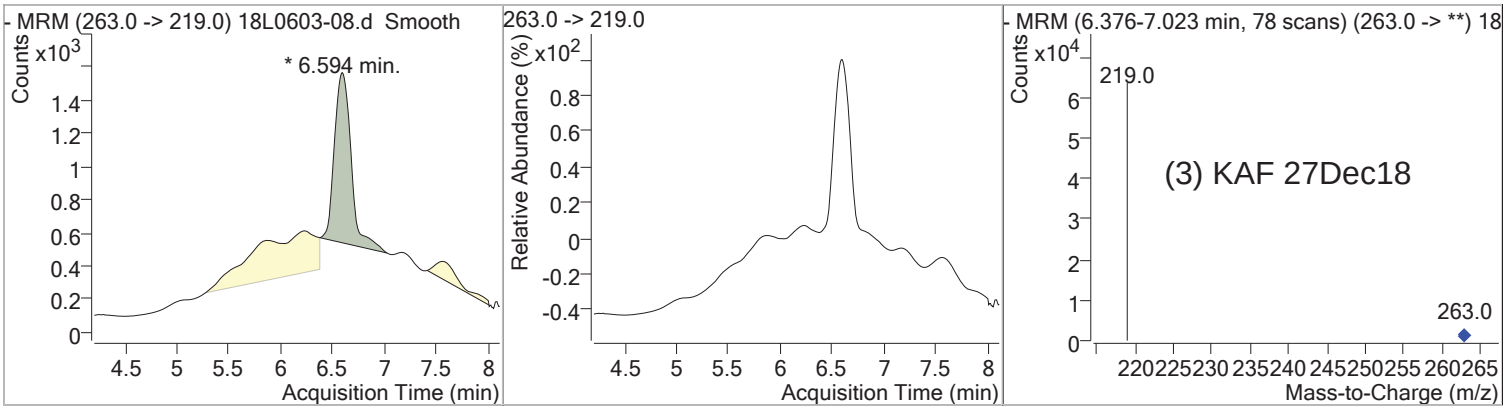
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	7.879	416.9 -> 371.9	13875	10000.0000	pg/ml		0.228
M PFOS C13	8.053	502.9 -> 80.0	9816	28700.0000	pg/ml		0.153
M d3-N-MeFOSAA	8.278	573.2 -> 419.0	11495	40000.0000	pg/ml		0.094
System Monitoring Compounds							
S PFHxA C13	7.325	314.9 -> 269.9	15909	9326.7982	pg/ml		0.388
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 93.27%			
S PFDA C13	8.204	514.9 -> 469.9	7006	7792.4645	pg/ml		0.111
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 77.92%			
S d5-N-MeFOSAA	8.345	589.2 -> 419.0	7617	30290.1506	pg/ml		0.077
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 75.73%			
Target Compounds							QValue
T PFBA	2.243	213.0 -> 168.9	2290	2942.4213	pg/ml		100
T PFPeA	6.594	263.0 -> 219.0	11515	11769.3912	pg/ml	m	100
T PFBS	6.913	298.9 -> 80.0	1025	3228.1683	pg/ml	m	100
T PFHxA	7.325	312.9 -> 268.9	17614	11237.6355	pg/ml		100
T PFHpA	7.653	362.9 -> 319.0	7705	4582.7082	pg/ml		100
T 6.2 FTS	7.853	427.0 -> 406.8	0	0.0000	pg/ml	md	1
T PFOA-Total	7.871	412.9 -> 368.9	37505	23589.1540	pg/ml		100
T PFHpS	7.676	449.0 -> 79.7	0	0.0000	pg/ml	md	1
T PFHxS-Total	7.669	398.9 -> 80.0	751	2605.3311	pg/ml		100
T PFNA	8.054	462.9 -> 418.9	828	1024.7316	pg/ml		100
T PFOS-Total	8.045	498.9 -> 80.0	2309	5349.7017	pg/ml		100
T PFDA	8.002	513.1 -> 469.0	0	0.0000	pg/ml	md	1
T 8.2 FTS	8.086	527.0 -> 81.0	0	0.0000	pg/ml	md	1
T N-MeFOSAA	8.186	570.2 -> 419.1	0	0.0000	pg/ml	md	1
T FOSA	8.298	497.9 -> 77.9	0	0.0000	pg/ml	md	1
T PFDS	8.319	599.0 -> 80.0	0	0.0000	pg/ml	md	1
T N-EtFOSAA	8.228	584.2 -> 419.0	0	0.0000	pg/ml	md	1
T PFUnA	8.186	563.1 -> 519.0	0	0.0000	pg/ml	md	1
T PFDoA	8.504	613.1 -> 569.0	0	0.0000	pg/ml	md	1
T PFTrDA	8.386	663.1 -> 619.0	0	0.0000	pg/ml	md	1
T PFTA	8.848	713.1 -> 669.1	515	323.1838	pg/ml		100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

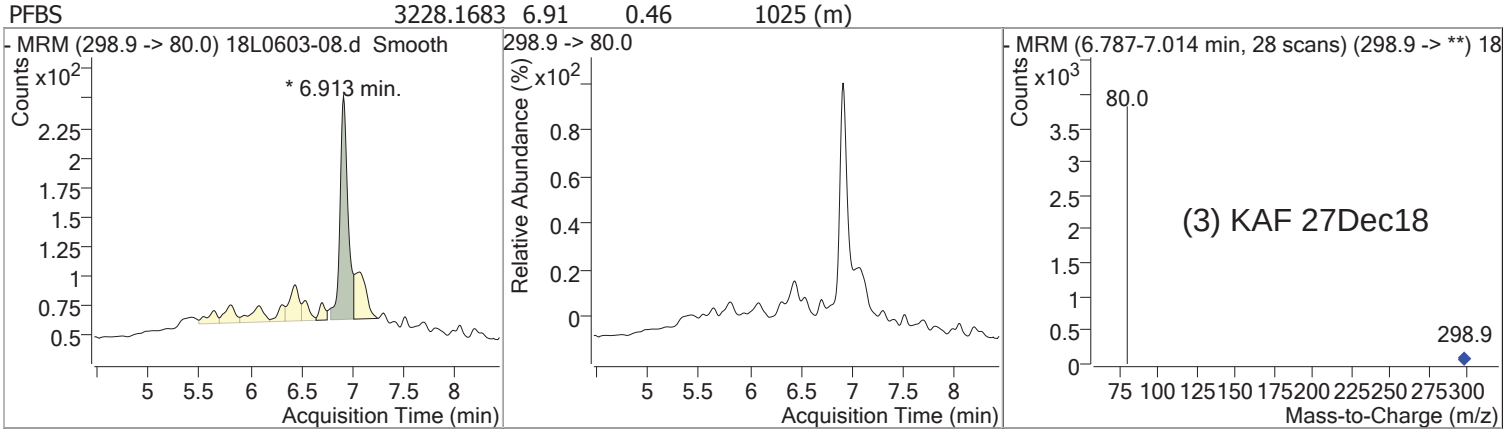
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	2942.4213	2.24	0.07	2290				



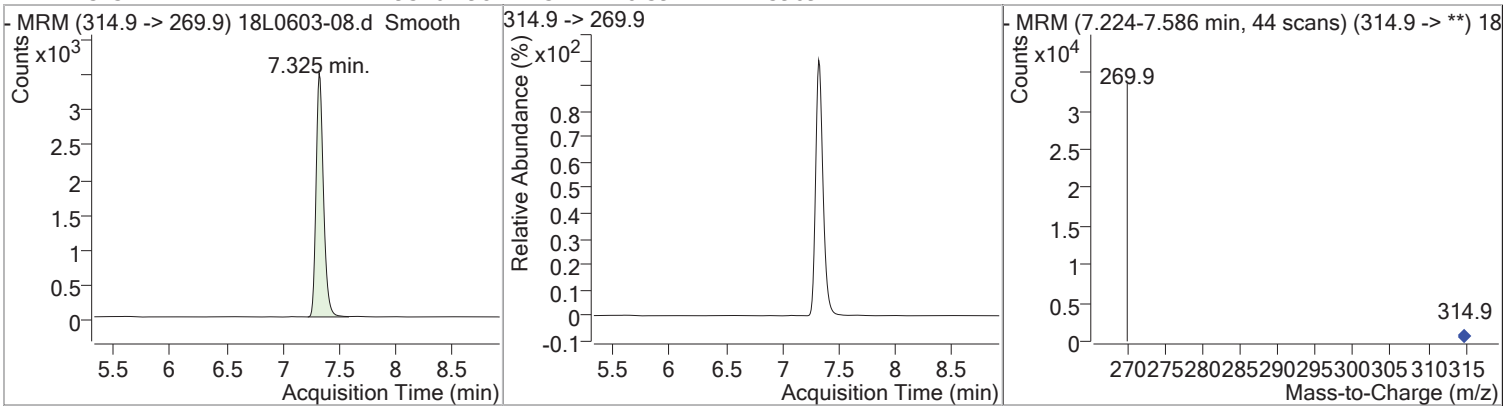
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PFPeA	11769.3912	6.59	0.49	11515 (m)				



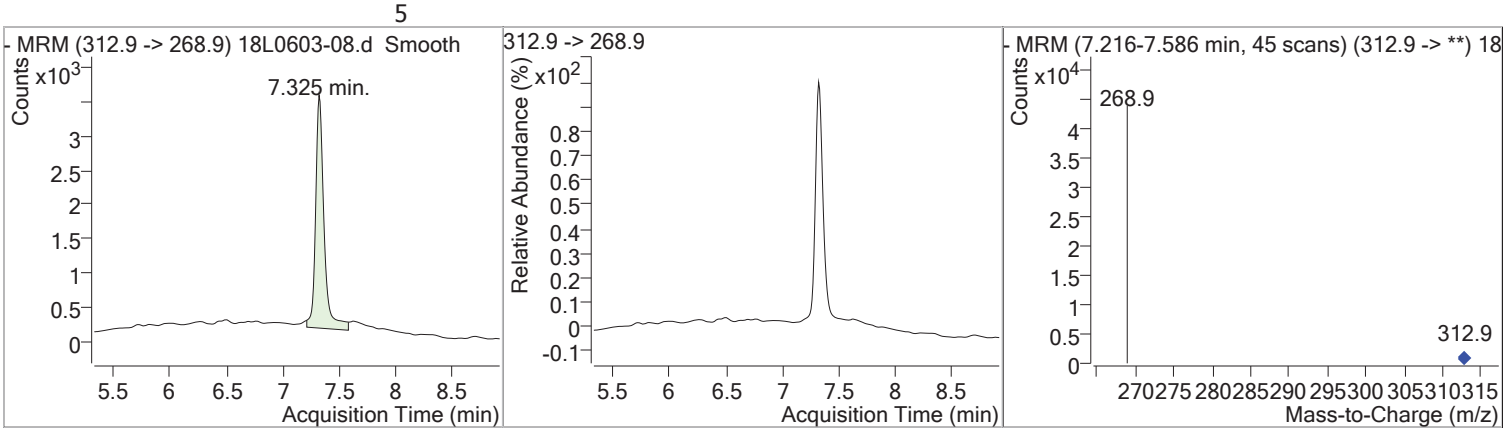
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	3228.1683	6.91	0.46	1025 (m)				



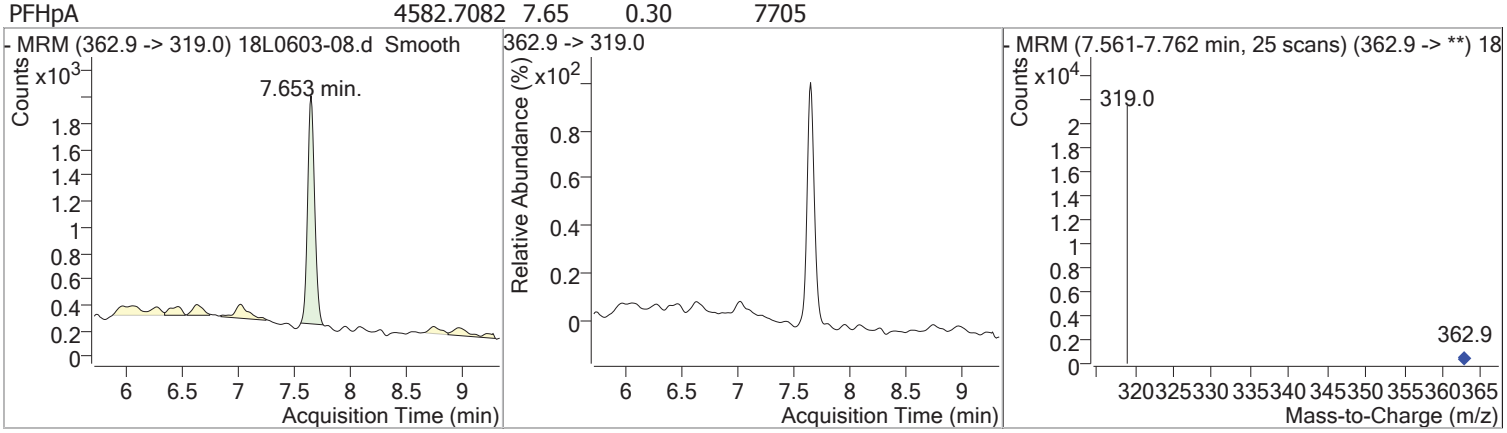
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	9326.7982	7.32	0.39	15909				



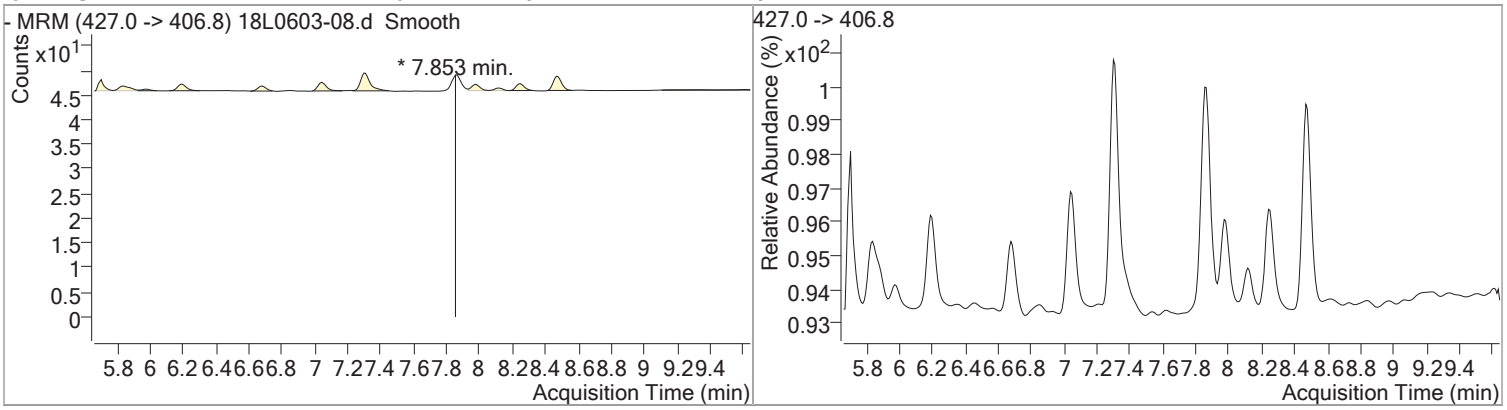
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PFHxA	11237.6355	7.33	0.39	17614				



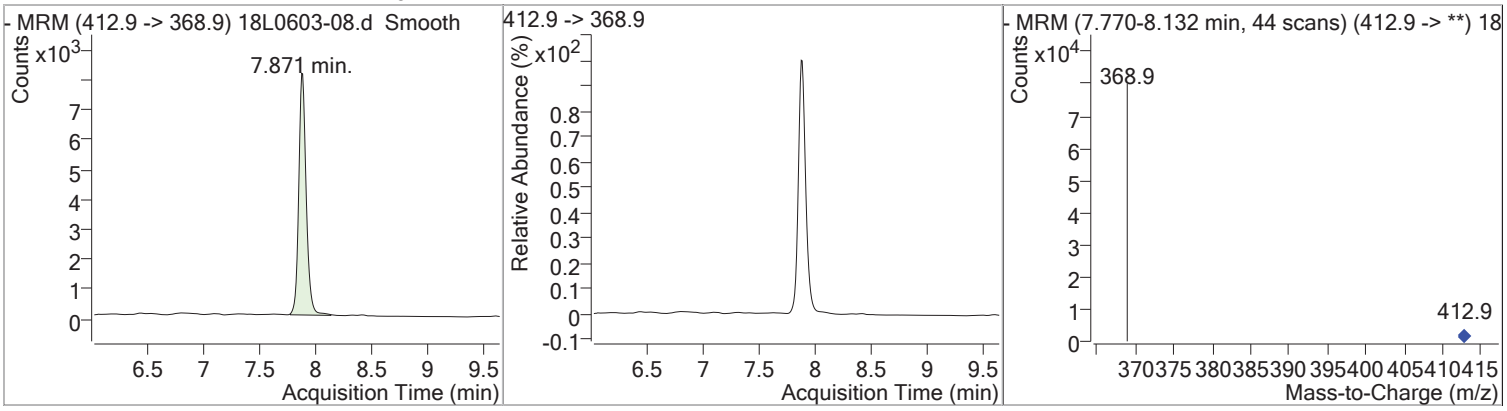
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	4582.7082	7.65	0.30	7705				



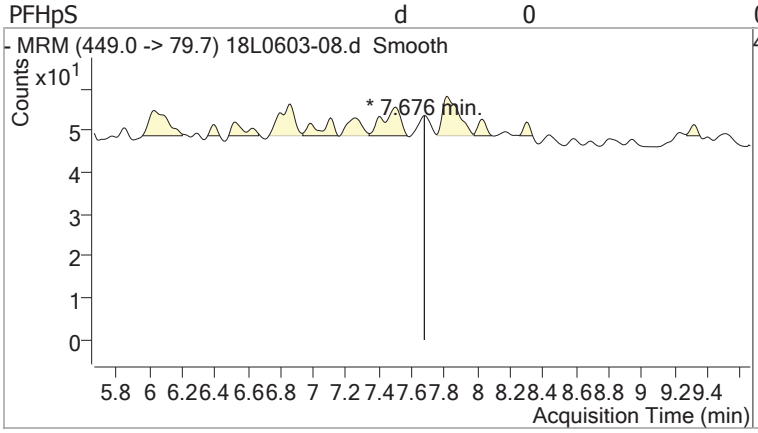
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	d	0		0				

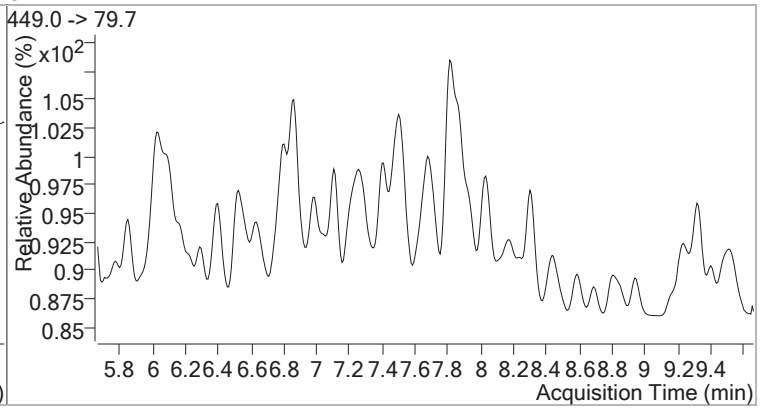


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	23589.1540	7.87	0.22	37505				

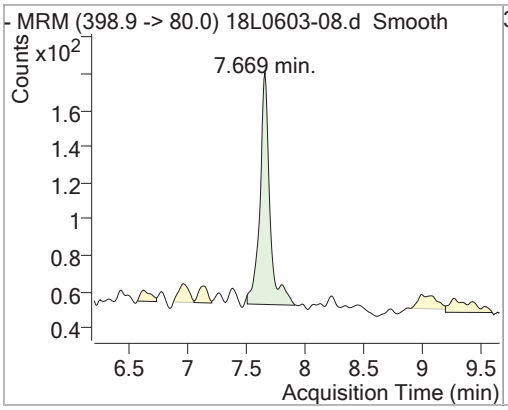


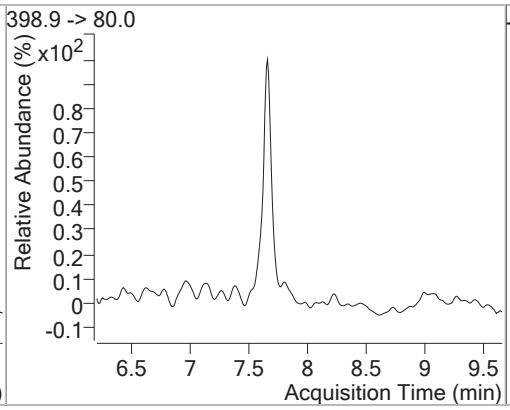
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	d	0		0				

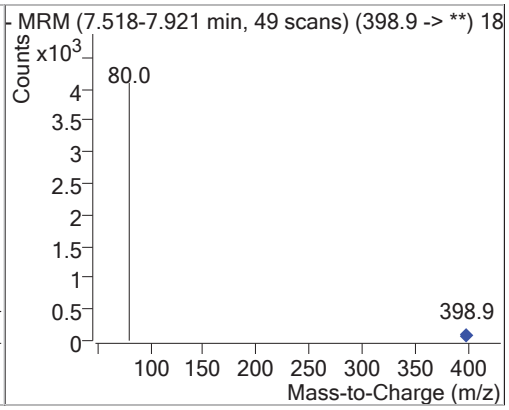




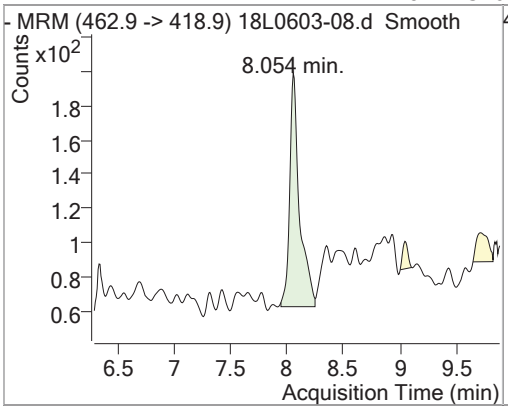
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	2605.3311	7.67	-0.01	751				

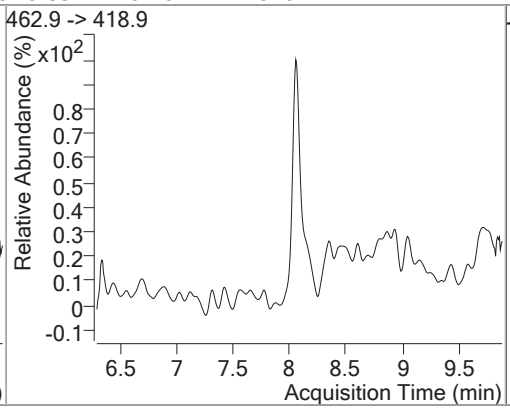


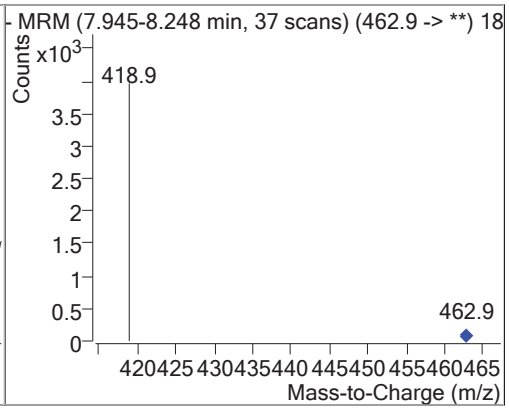




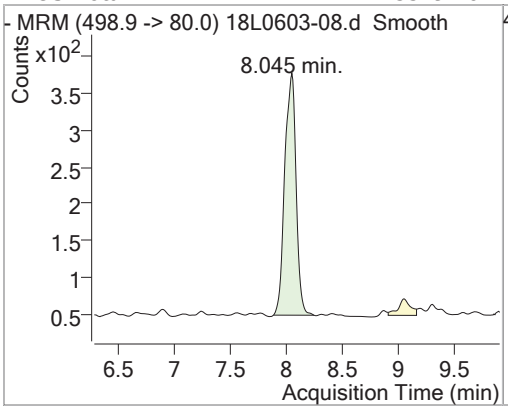
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	1024.7316	8.05	0.16	828				

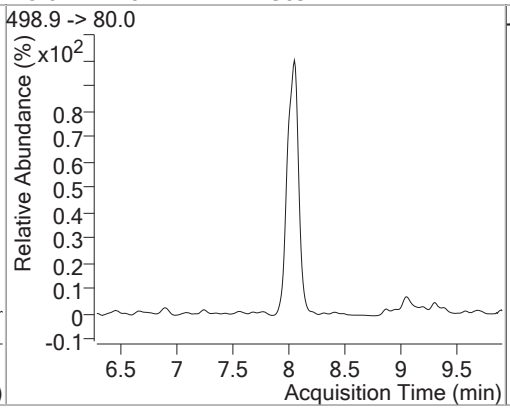


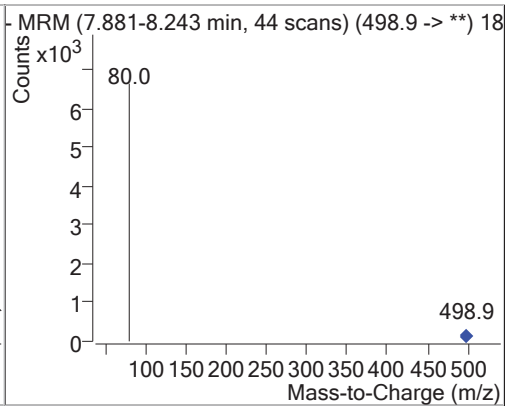




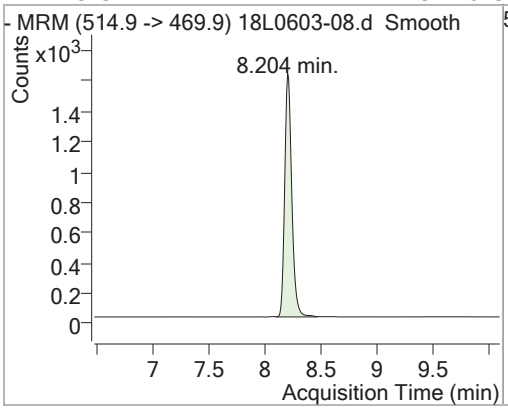
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	5349.7017	8.04	0.14	2309				

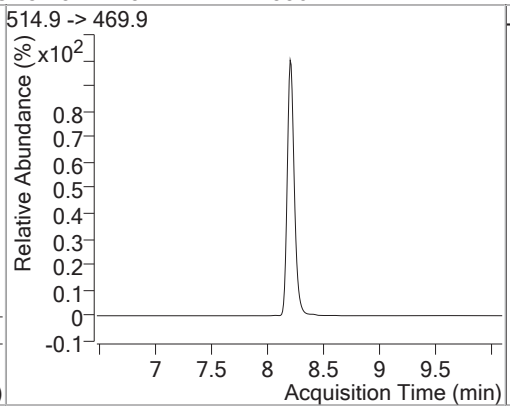


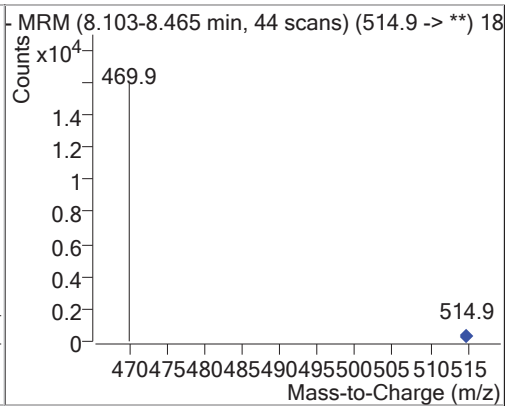




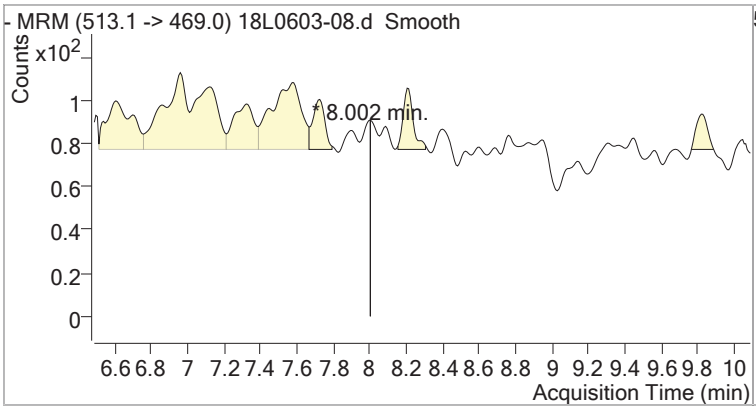
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	7792.4645	8.20	0.11	7006				

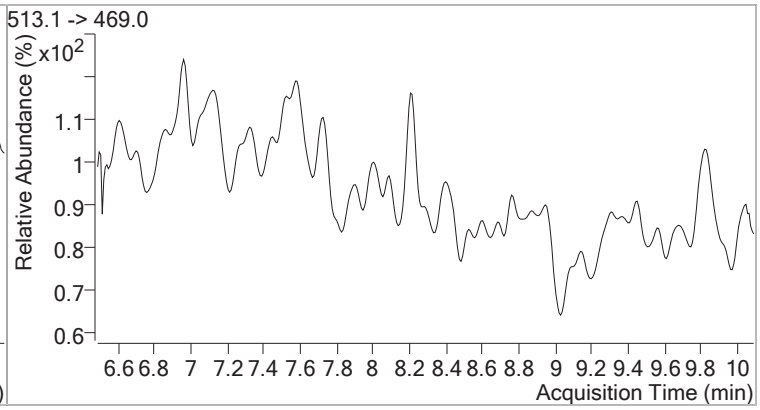




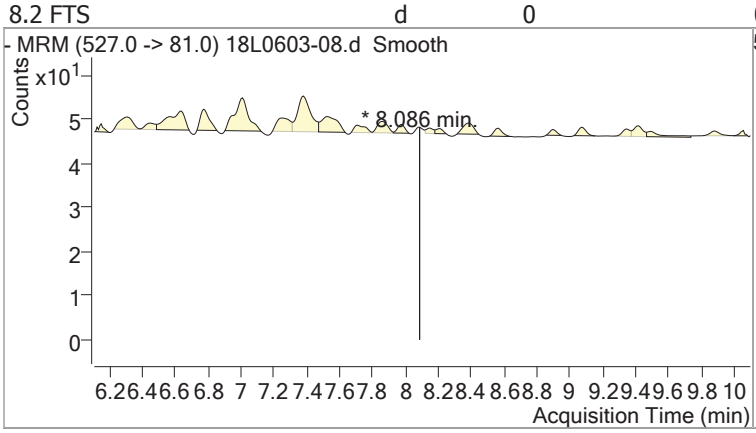


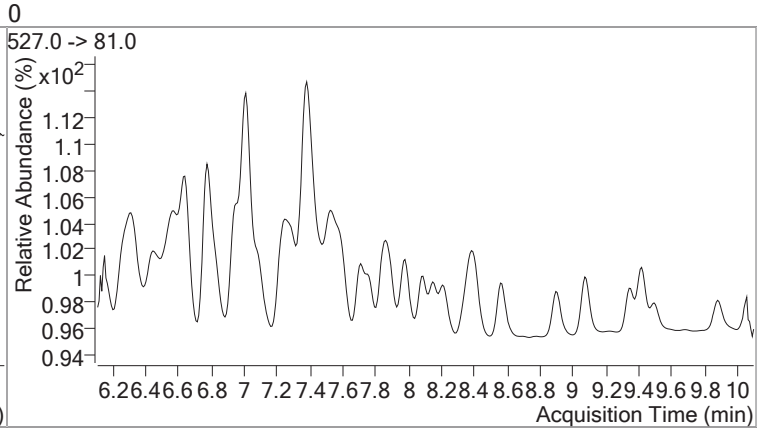
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	d	0		0				



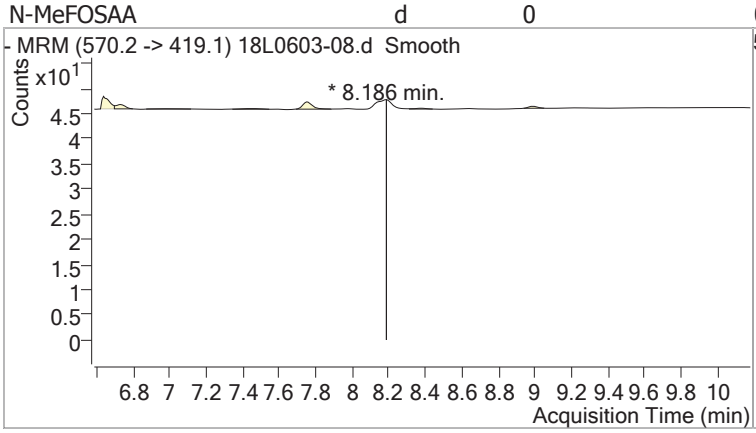


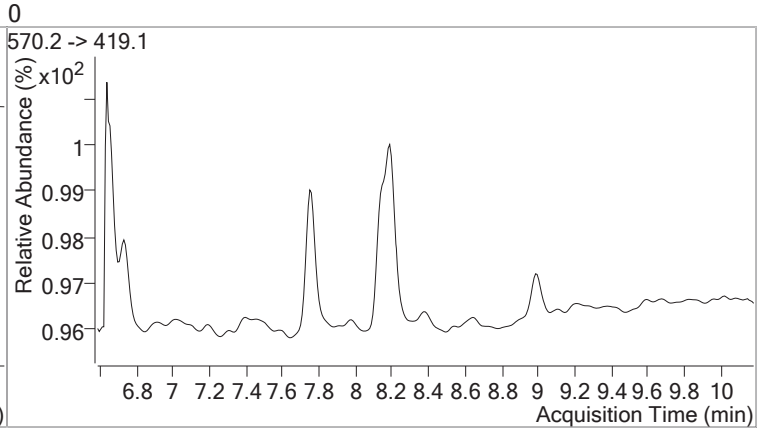
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	d	0		0				



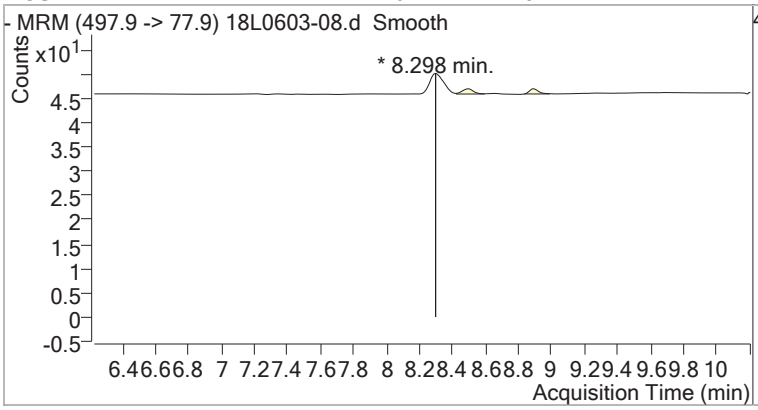


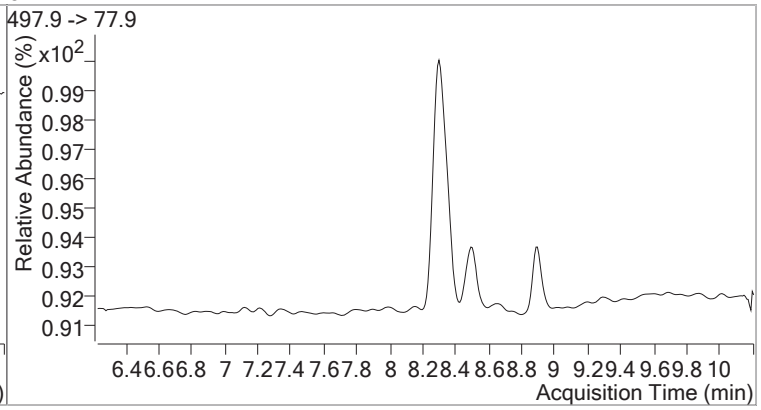
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	d	0		0				



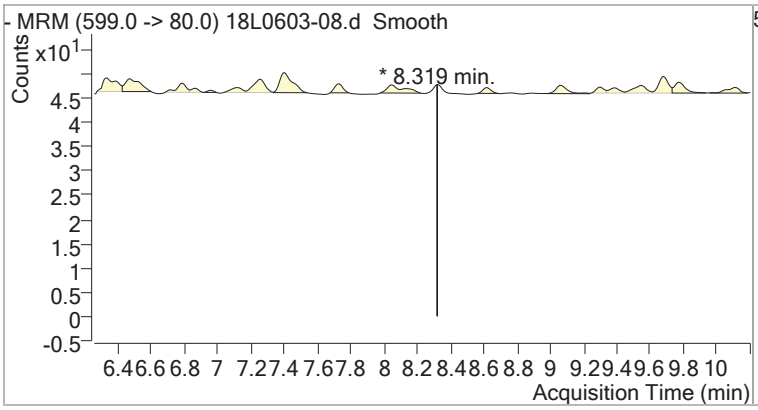


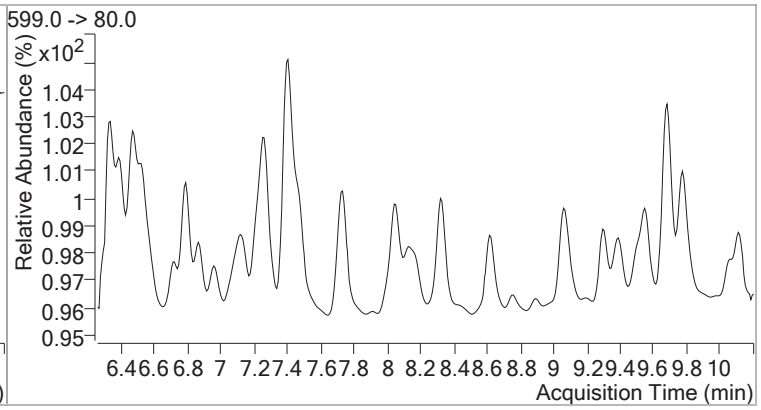
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	d	0		0				



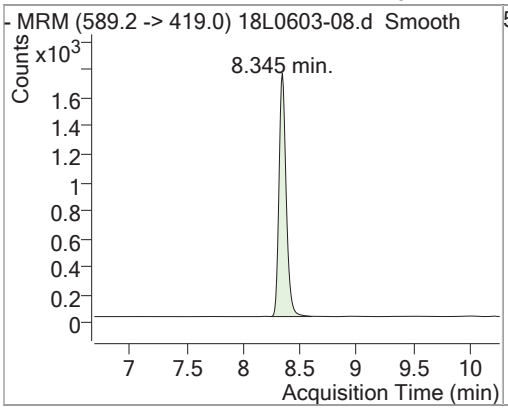


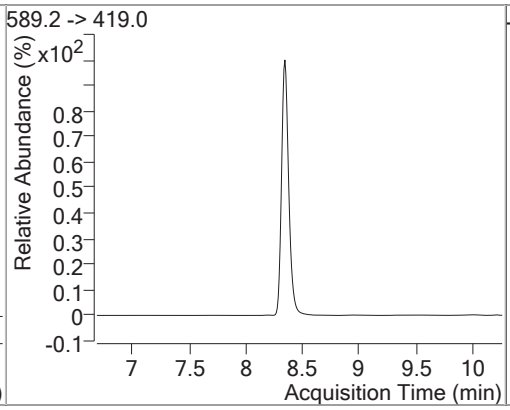
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	d	0		0				

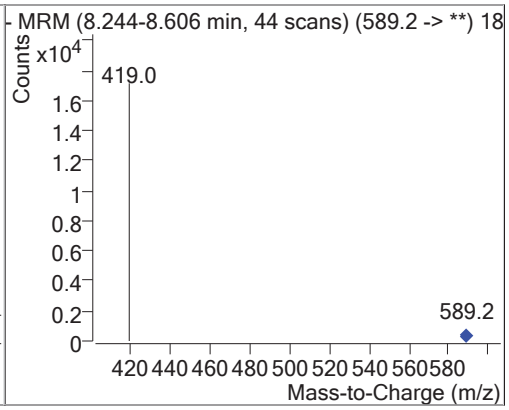




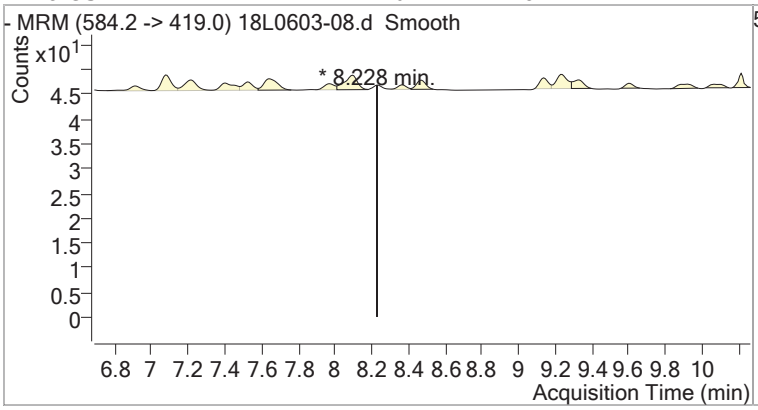
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	30290.1506	8.35	0.08	7617				

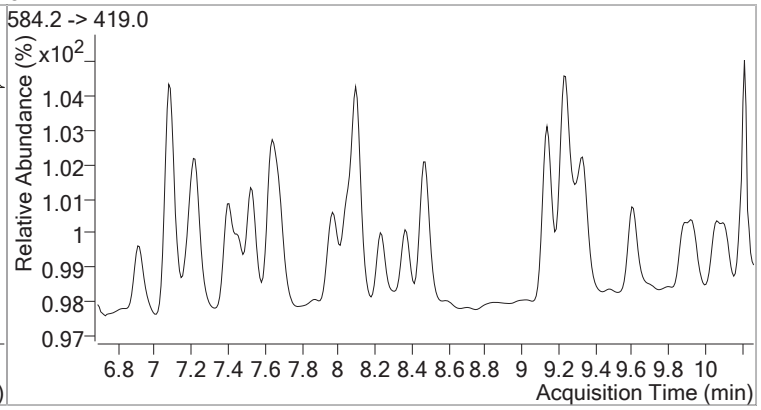




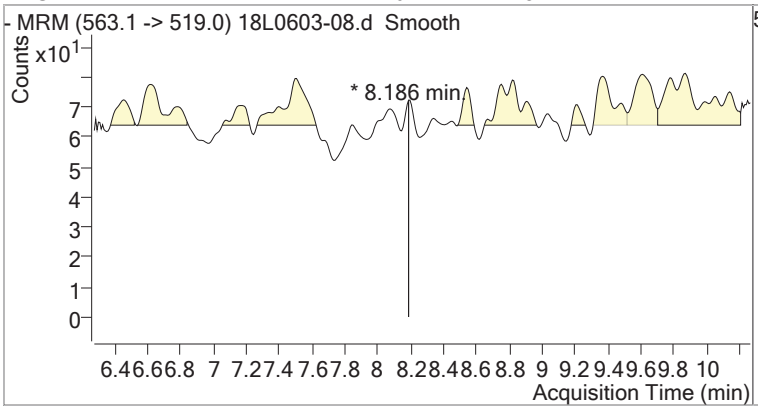


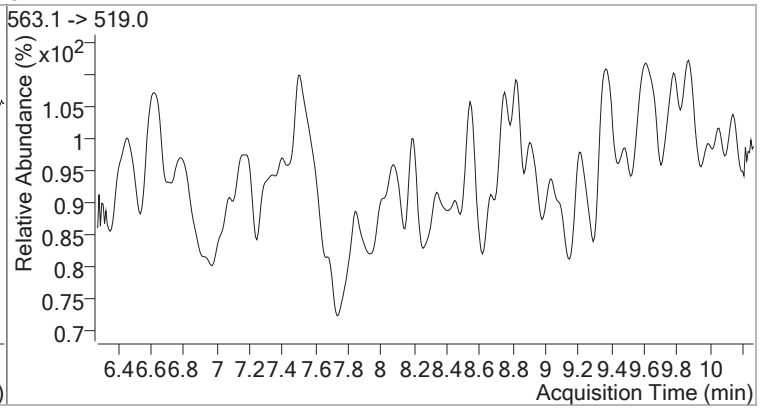
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	d	0		0				



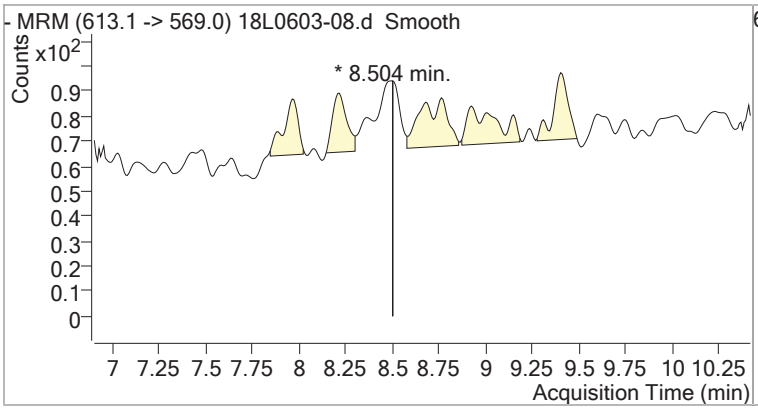


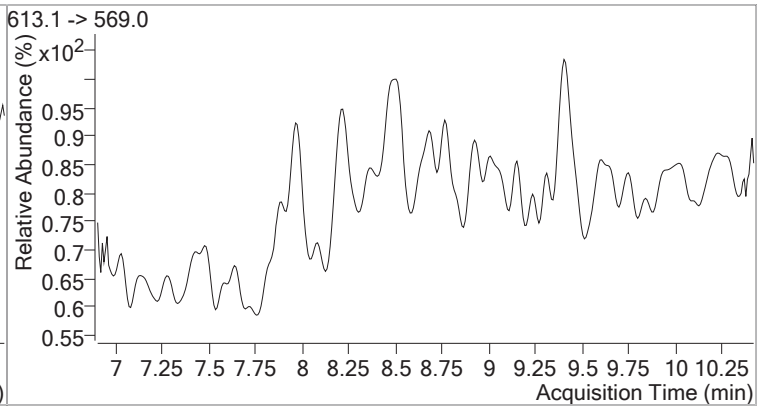
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	d	0		0				



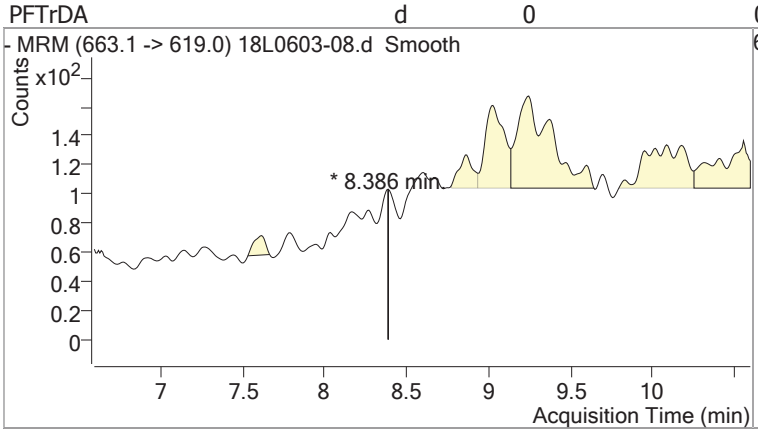


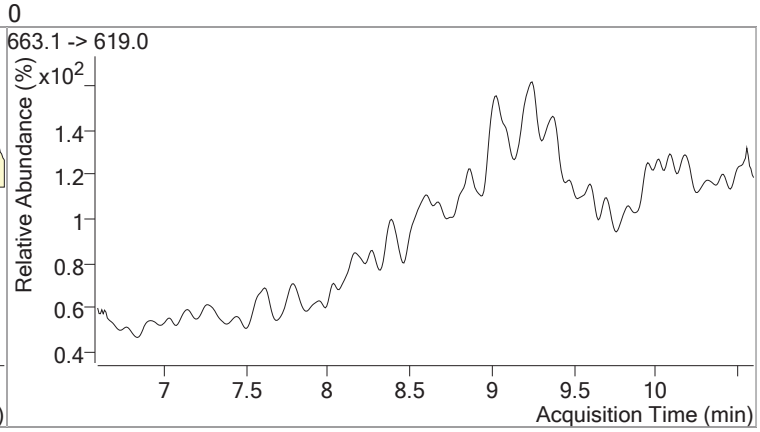
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	d	0		0				



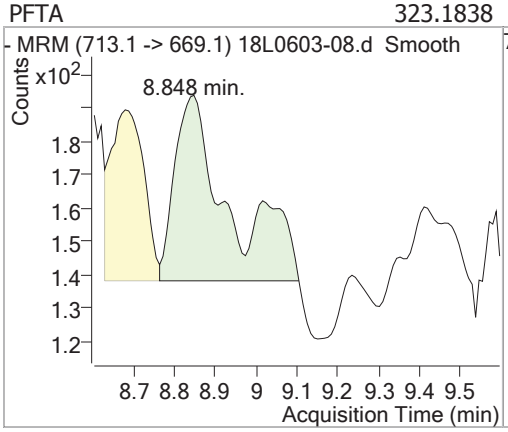


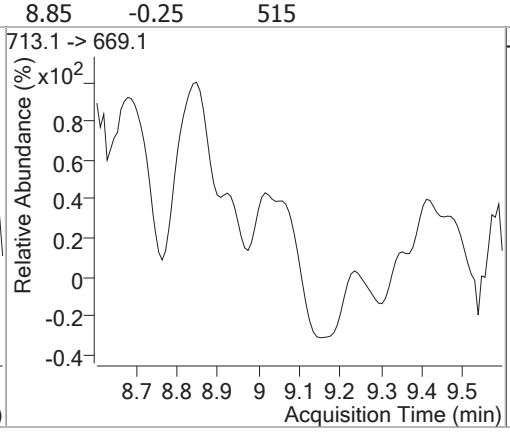
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	d	0		0				

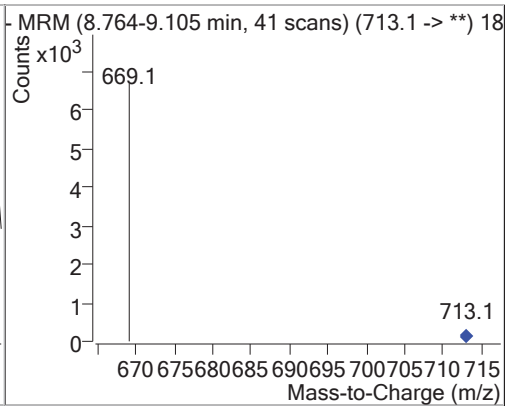




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	323.1838	8.85	-0.25	515				







QC DATA

2 - FORM II

SYSTEM MONITORING COMPOUND SUMMARY

SOP 434-PFAAS

Laboratory:	Con-Test Analytical Laboratory	SDG:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Matrix:	Water	Instrument:	HPLC1

	13C-PFDA (70% - 130%)	13C-PFHxA (70% - 130%)	d5-NEtFOSA (70% - 130%)
18L0603-01	88.5	97.8	87.0
18L0603-02	85.8	90.5	80.7
18L0603-03	87.1	104	85.3
18L0603-04	94.9	78.4	89.7
18L0603-05	98.3	111	85.9
18L0603-06	93.9	112	87.8
18L0603-07	94.5	103	100
18L0603-08	77.9	93.3	75.7
B219828-BLK1	93.1	106	89.9
B219828-BS1	95.2	107	98.1
B219828-MS1	81.3	93.7	85.8
B219828-MSD1	88.6	93.4	80.1

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

MW-5 121218

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Matrix:	Water	Analysis:	SOP 434-PFAAS
Batch:	B219828	Preparation:	EPA 537
% Solids:		Laboratory ID:	B219828-MS1
Initial/Final:	250 mL / 1 mL	Sample Lab ID:	18L0603-02
Column:			

ANALYTE	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC.		QC LIMITS REC.
Perfluorobutanesulfonic acid (PFBS)	8.85	3.14	19.7	187	*	70 - 130
Perfluorohexanoic acid (PFHxA)	10.0	ND	14.9	149	*	70 - 130
Perfluoroheptanoic acid (PFHpA)	10.0	ND	13.4	134	*	70 - 130
Perfluorobutanoic acid (PFBA)	10.0	ND	4.97	49.7		30 - 110
Perfluorodecanesulfonic acid (PFDS)	9.65	ND	12.1	125		70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	9.50	ND	15.5	163	*	70 - 130
Perfluorooctanesulfonamide (FOSA)	10.0	ND	4.40	44.0		30 - 110
Perfluoropentanoic acid (PFPeA)	10.0	ND	12.5	125		70 - 130
6:2 Fluorotelomersulfonate (6:2 FTS)	9.50	6.57	46.0	415	*	70 - 130
8:2 Fluorotelomersulfonate (8:2 FTS)	9.60	ND	21.7	226	*	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	9.10	2.66	19.4	184	*	70 - 130
Perfluorooctanoic acid (PFOA)	10.0	9.60	21.7	121		70 - 130
Perfluorooctanesulfonic acid (PFOS)	9.25	10.5	19.0	92.4		70 - 130
Perfluorononanoic acid (PFNA)	10.0	1.74	14.1	124		70 - 130
Perfluorodecanoic acid (PFDA)	10.0	ND	10.2	102		70 - 130
NMeFOSAA	10.0	ND	8.83	88.3		70 - 130
Perfluoroundecanoic acid (PFUnA)	10.0	ND	10.4	104		70 - 130
NEtFOSAA	10.0	ND	12.1	121		70 - 130
Perfluorododecanoic acid (PFDoA)	10.0	ND	8.18	81.8		70 - 130
Perfluorotridecanoic acid (PFTrDA)	10.0	ND	6.01	60.1	*	70 - 130
Perfluorotetradecanoic acid (PFTA)	10.0	ND	4.00	40.0	*	70 - 130

3 - FORM III

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

MW-5 121218

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Matrix:	Water	Analysis:	SOP 434-PFAAS
Batch:	B219828	Preparation:	EPA 537
% Solids:		Laboratory ID:	B219828-MS1
Initial/Final:	250 mL / 1 mL	Sample Lab ID:	18L0603-02
Column:			

ANALYTE	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC. #		% RPD		QC LIMITS RPD	QC LIMITS REC.
Perfluorobutanesulfonic acid (PFBS)	8.85	17.9	167	*	9.29		30	70 - 130
Perfluorohexanoic acid (PFHxA)	10.0	14.8	148	*	0.207		30	70 - 130
Perfluoroheptanoic acid (PFHpA)	10.0	13.6	136	*	1.42		30	70 - 130
Perfluorobutanoic acid (PFBA)	10.0	5.00	50.0		0.603		30	30 - 110
Perfluorodecanesulfonic acid (PFDS)	9.65	9.57	99.2		23.4		30	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	9.50	16.0	168	*	3.10		30	70 - 130
Perfluorooctanesulfonamide (FOSA)	10.0	6.06	60.6		31.8	*	30	30 - 110
Perfluoropentanoic acid (PFPeA)	10.0	12.8	128		1.71		30	70 - 130
6:2 Fluorotelomersulfonate (6:2 FTS)	9.50	37.7	328	*	19.8		30	70 - 130
8:2 Fluorotelomersulfonate (8:2 FTS)	9.60	22.4	233	*	3.04		30	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	9.10	12.9	113		40.3	*	30	70 - 130
Perfluorooctanoic acid (PFOA)	10.0	22.3	127		2.74		30	70 - 130
Perfluorooctanesulfonic acid (PFOS)	9.25	20.2	105		5.73		30	70 - 130
Perfluorononanoic acid (PFNA)	10.0	14.8	148	*	4.51		30	70 - 130
Perfluorodecanoic acid (PFDA)	10.0	12.1	121		17.1		30	70 - 130
NMeFOSAA	10.0	12.8	128		36.7	*	30	70 - 130
Perfluoroundecanoic acid (PFUnA)	10.0	10.2	102		1.65		30	70 - 130
NEtFOSAA	10.0	10.1	101		18.4		30	70 - 130
Perfluorododecanoic acid (PFDoA)	10.0	10.0	100		20.3		30	70 - 130
Perfluorotridecanoic acid (PFTrDA)	10.0	8.51	85.1		34.4	*	30	70 - 130
Perfluorotetradecanoic acid (PFTA)	10.0	7.52	75.2		61.0	*	30	70 - 130

INITIAL CALIBRATION STANDARDS

SOP 434-PFAAS

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Sequence:	S030508	Instrument:	HPLC1
Calibration:	1800396		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
1812320	1.0 ppb PFAS	S030508-CAL3	lims export files full-001	12/20/18 21:40
1812321	2.5 ppb PFAS	S030508-CAL4	lims export files full-002	12/20/18 21:53
1812322	5.0 ppb PFAS	S030508-CAL5	lims export files full-003	12/20/18 22:06
1812323	10.0 ppb PFAS	S030508-CAL6	lims export files full-004	12/20/18 22:18
1812324	25.0 ppb PFAS	S030508-CAL7	lims export files full-005	12/20/18 22:31
1812325	50.0 ppb PFAS	S030508-CAL8	lims export files full-006	12/20/18 22:44
1812318	0.25 ppb PFAS	S030508-CAL1	lims export files full-008	12/21/18 12:51
1812319	0.5 ppb PFAS	S030508-CAL2	lims export files full-009	12/21/18 13:03

Calibration Report

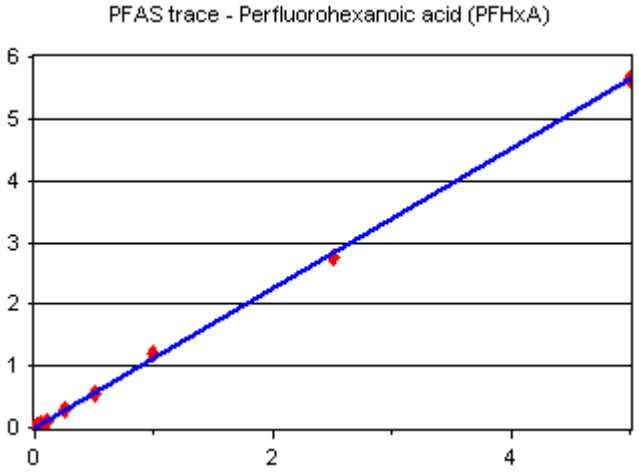
Printed: 01/03/2019 6:37 pm

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

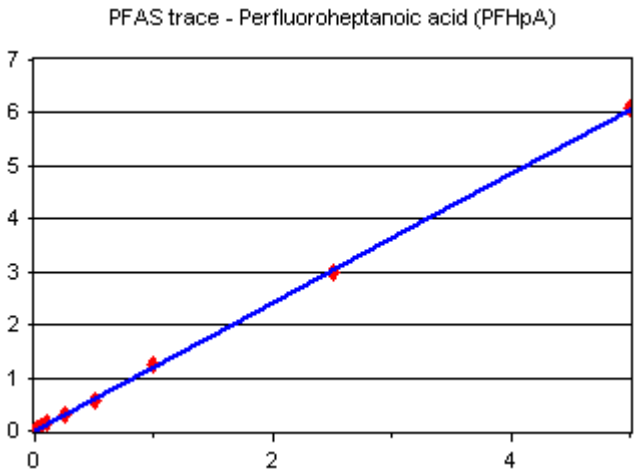
PFAS trace

Perfluorohexanoic acid (PFHxA)



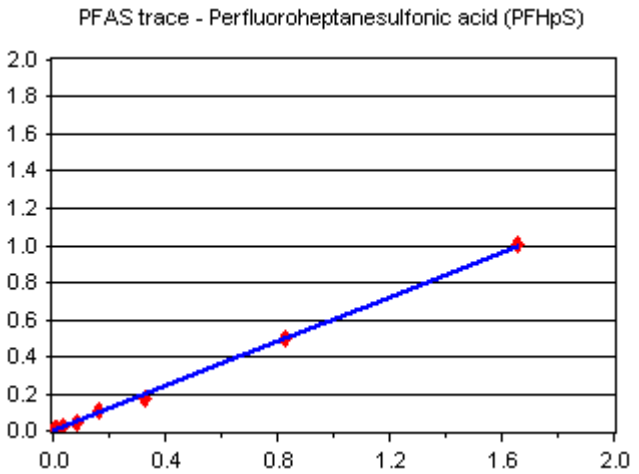
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9996572
[Y] = 1.129668 * [X]

Perfluoroheptanoic acid (PFHpA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9996863
[Y] = 1.211729 * [X]

Perfluoroheptanesulfonic acid (PFHpS)



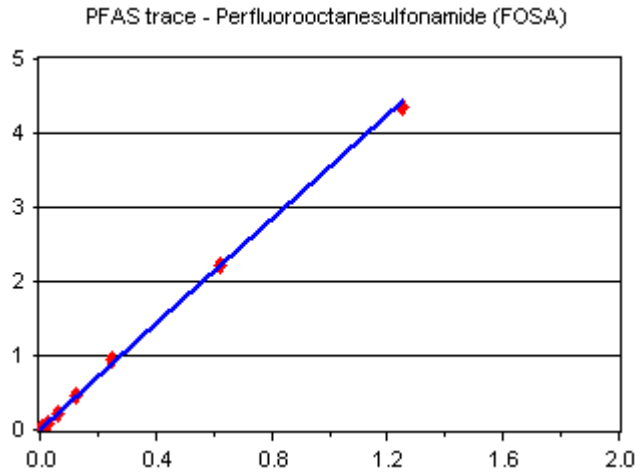
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r2: 0.9991959
[Y] = 0.5983487 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

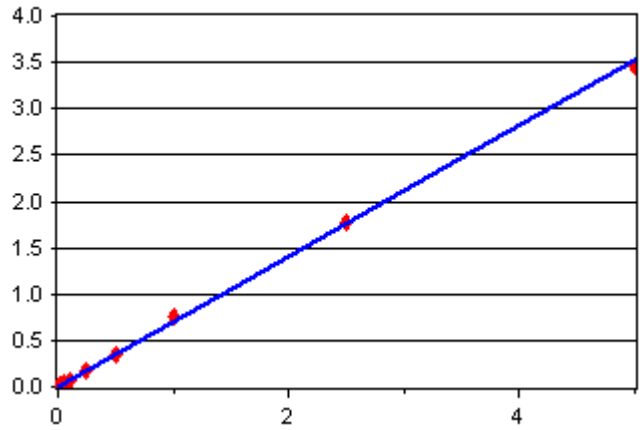
PFAS trace (Continued)

Perfluorooctanesulfonamide (FOSA)



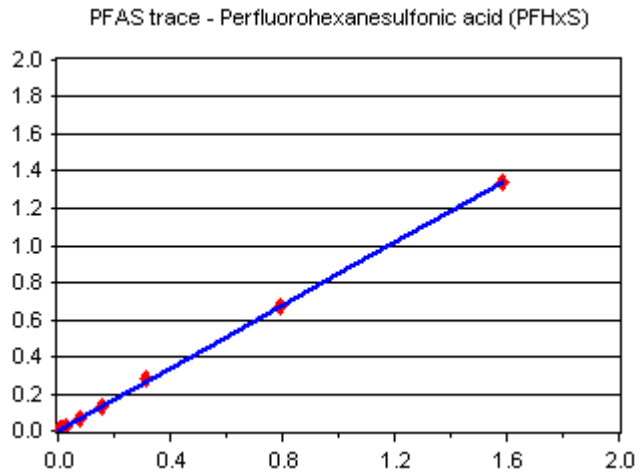
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9992533
[Y] = 3.543933 * [X]

Perfluoropentanoic acid (PFPeA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9991009
[Y] = 0.705114 * [X]

Perfluorohexanesulfonic acid (PFHxS)



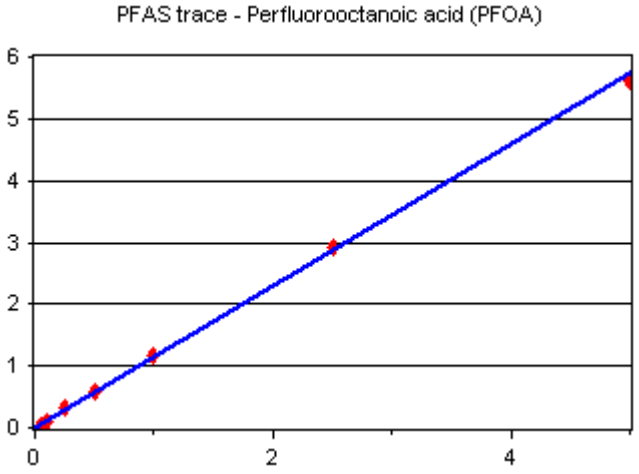
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[Y] = 0.8445512 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

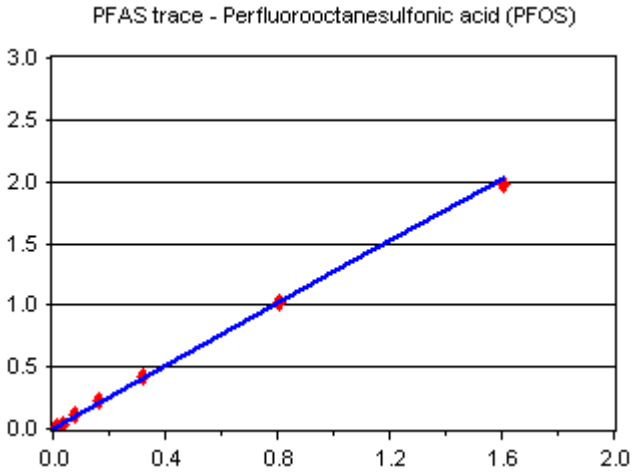
PFAS trace (Continued)

Perfluorooctanoic acid (PFOA)



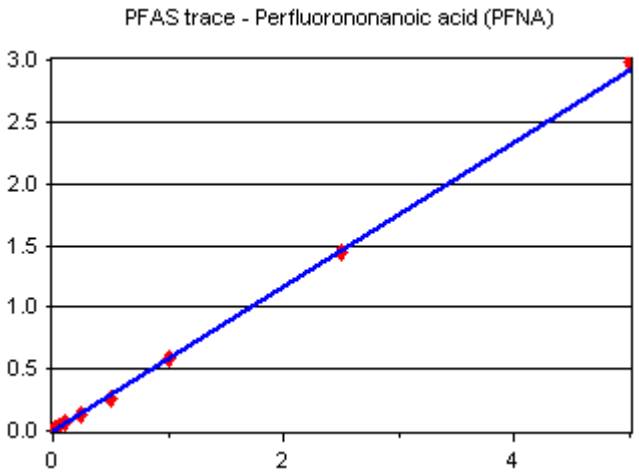
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9992508
[Y] = 1.145869 * [X]

Perfluorooctanesulfonic acid (PFOS)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9988787
[Y] = 1.263756 * [X]

Perfluorononanoic acid (PFNA)



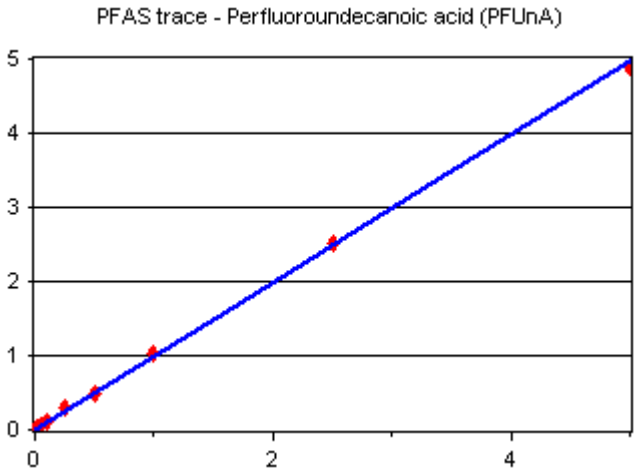
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9989531
[Y] = 0.5823567 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

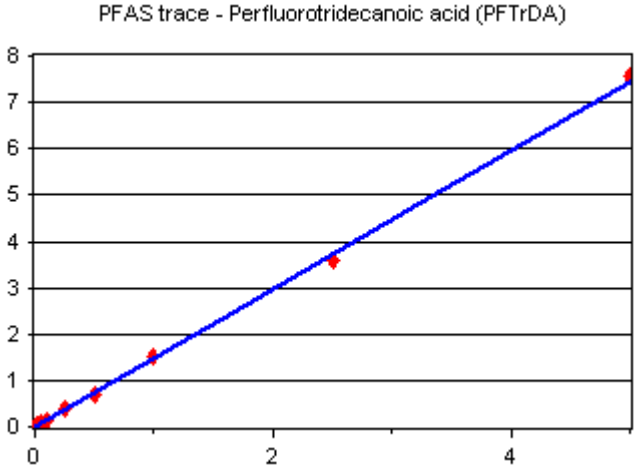
PFAS trace (Continued)

Perfluoroundecanoic acid (PFUnA)



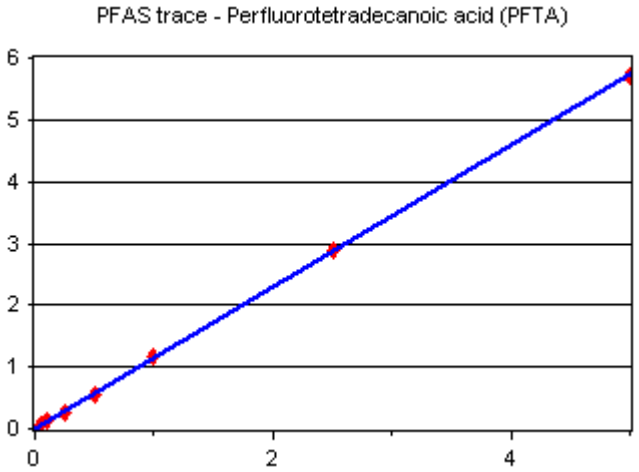
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9993882
[Y] = 0.9949992 * [X]

Perfluorotridecanoic acid (PFTrDA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9993912
[Y] = 1.488072 * [X]

Perfluorotetradecanoic acid (PFTA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9999181
[Y] = 1.148448 * [X]

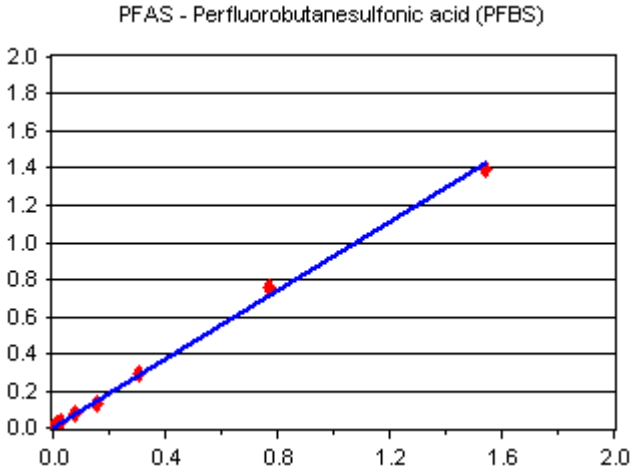
PFAS

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

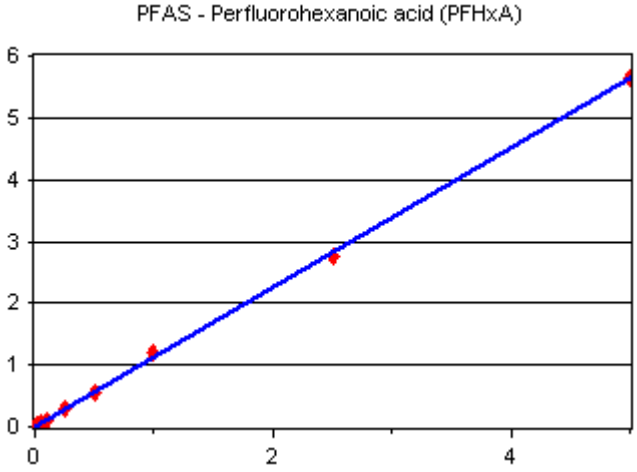
PFAS (Continued)

Perfluorobutanesulfonic acid (PFBS)



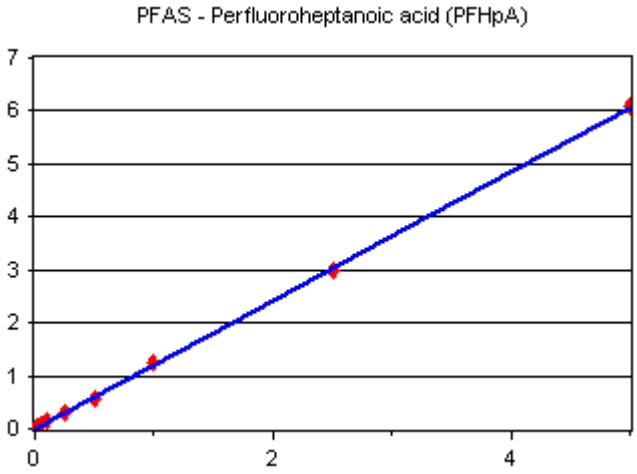
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9980559
[Y] = 0.9295738 * [X]

Perfluorohexanoic acid (PFHxA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9996572
[Y] = 1.129668 * [X]

Perfluoroheptanoic acid (PFHpA)



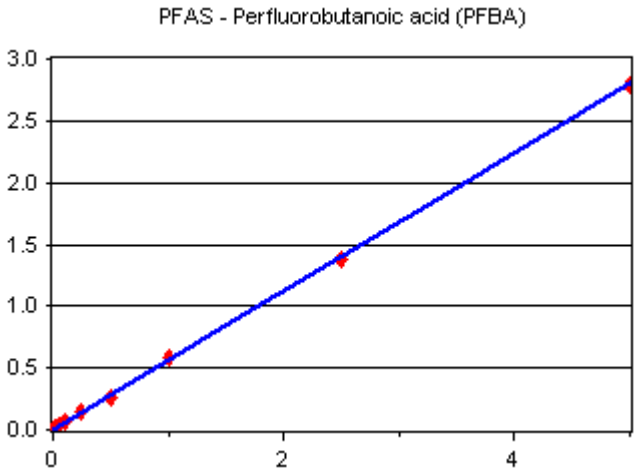
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9996863
[Y] = 1.211729 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

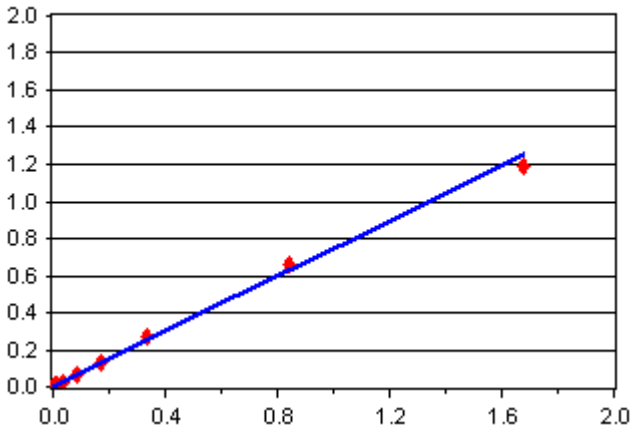
PFAS (Continued)

Perfluorobutanoic acid (PFBA)



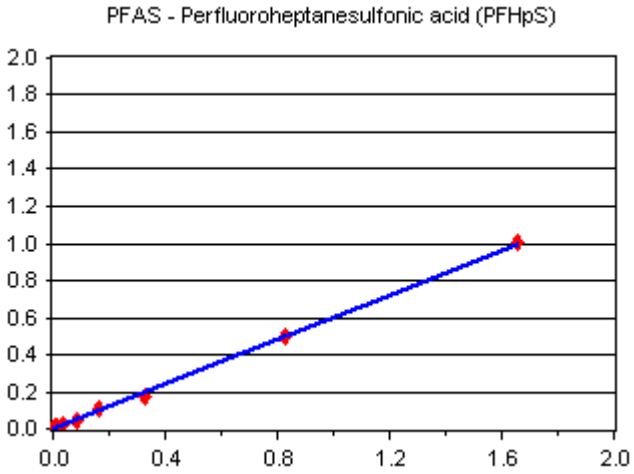
Linear Regression Weighted 1/X Force thru Zero
r2: 0.999777
[Y] = 0.5610078 * [X]

Perfluorodecanesulfonic acid (PFDS)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9956197
[Y] = 0.7480279 * [X]

Perfluoroheptanesulfonic acid (PFHpS)



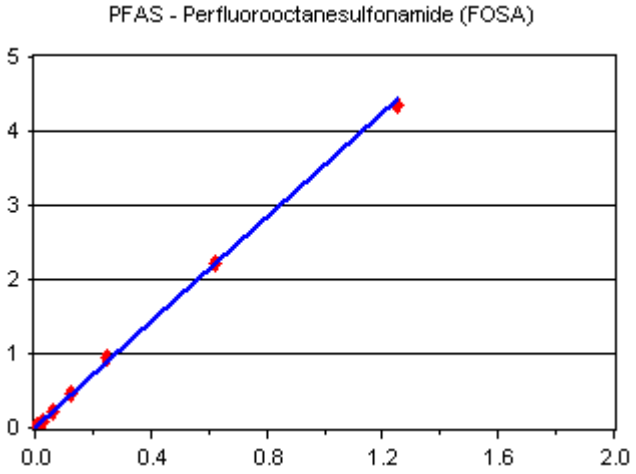
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9991959
[Y] = 0.5983487 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

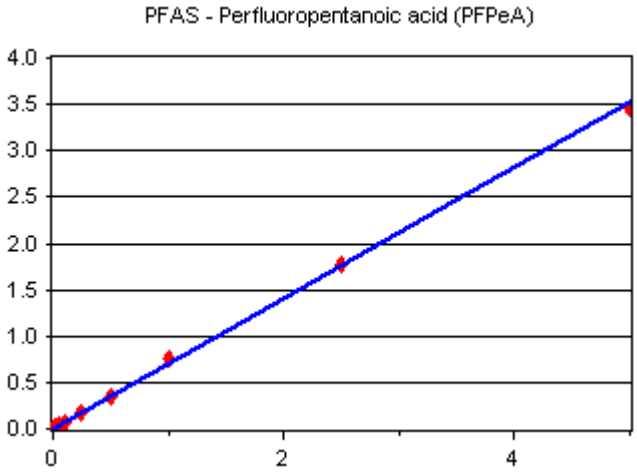
PFAS (Continued)

Perfluorooctanesulfonamide (FOSA)



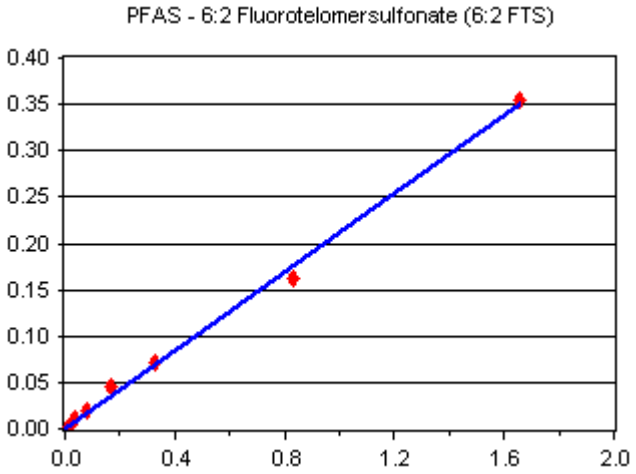
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9992533
[Y] = 3.543933 * [X]

Perfluoropentanoic acid (PFPeA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9991009
[Y] = 0.705114 * [X]

6:2 Fluorotelomersulfonate (6:2 FTS)



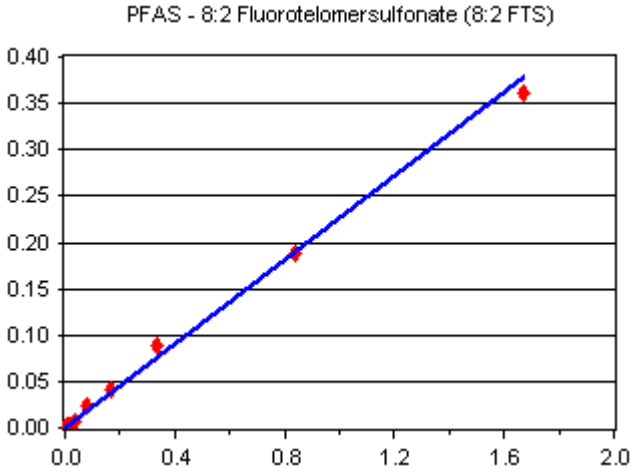
Linear Regression Force thru Zero
r2: 0.9970512
[Y] = 0.2110397 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

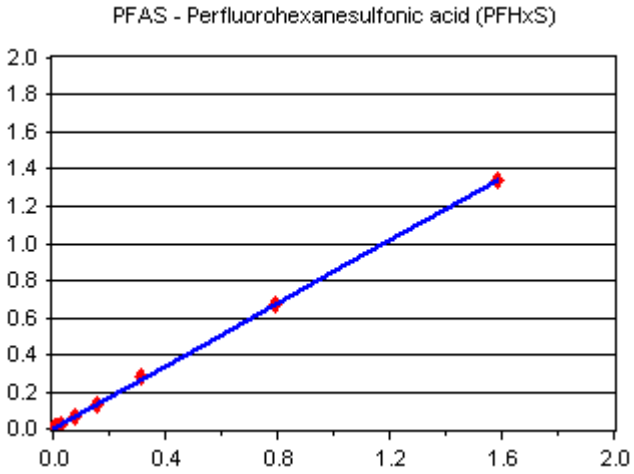
PFAS (Continued)

8:2 Fluorotelomersulfonate (8:2 FTS)



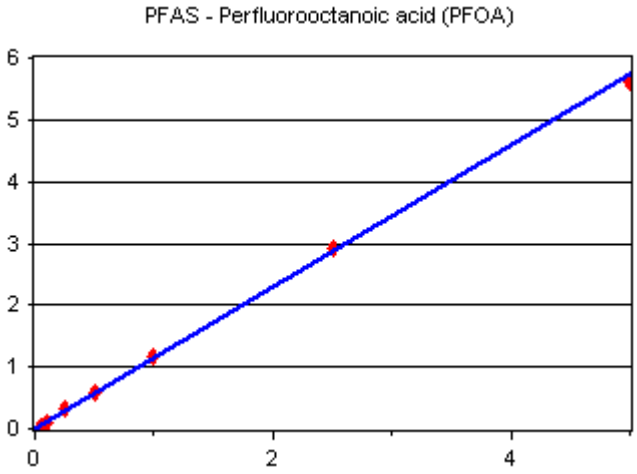
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9956703
[Y] = 0.2259949 * [X]

Perfluorohexanesulfonic acid (PFHxS)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9999218
[Y] = 0.8445512 * [X]

Perfluorooctanoic acid (PFOA)



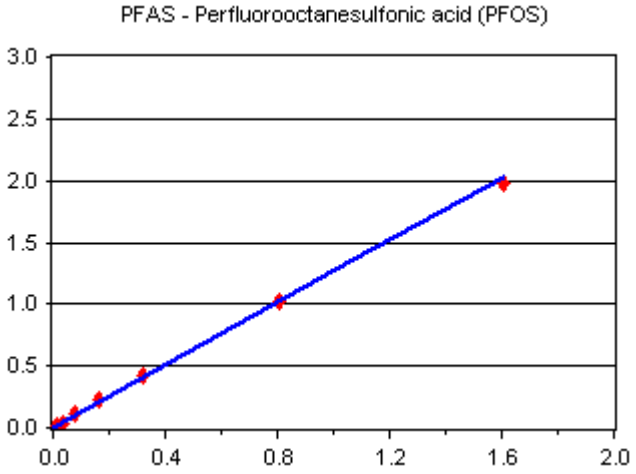
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9992508
[Y] = 1.145869 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

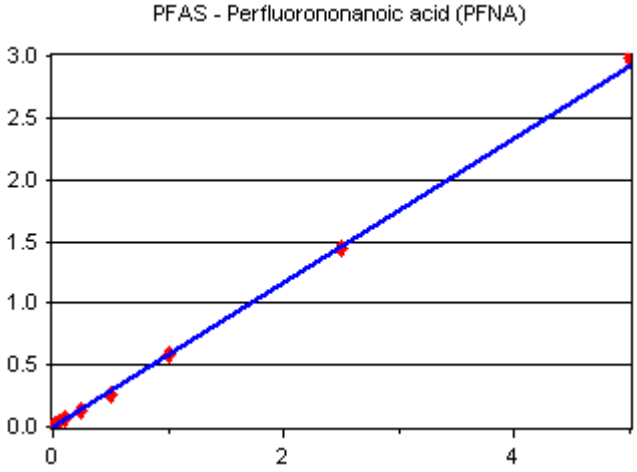
PFAS (Continued)

Perfluorooctanesulfonic acid (PFOS)



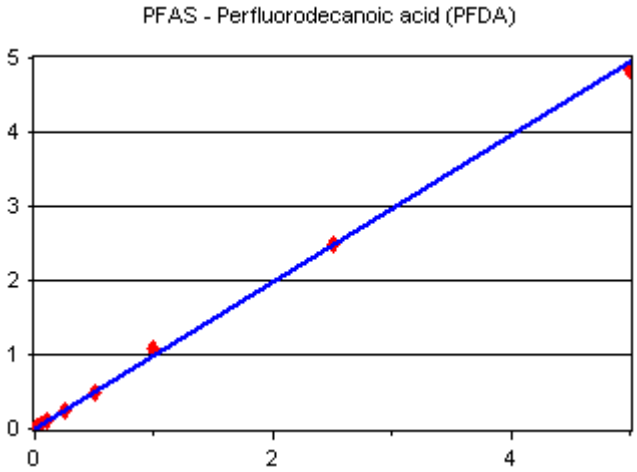
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9988787
[Y] = 1.263756 * [X]

Perfluorononanoic acid (PFNA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9989531
[Y] = 0.5823567 * [X]

Perfluorodecanoic acid (PFDA)



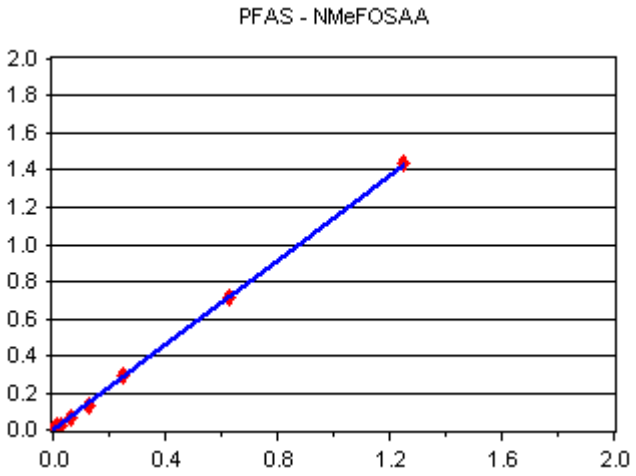
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9990778
[Y] = 0.9898799 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

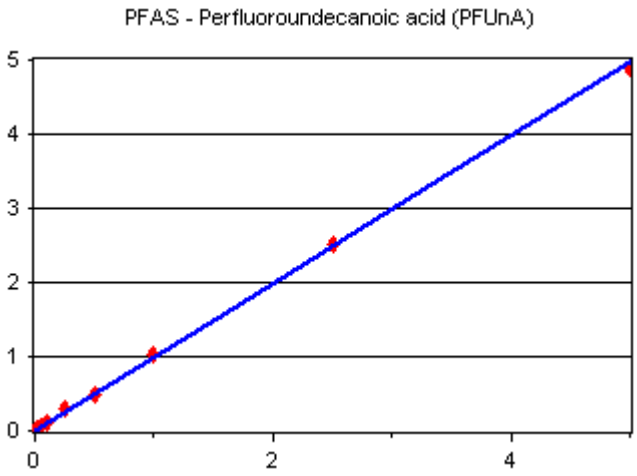
PFAS (Continued)

NMeFOSAA



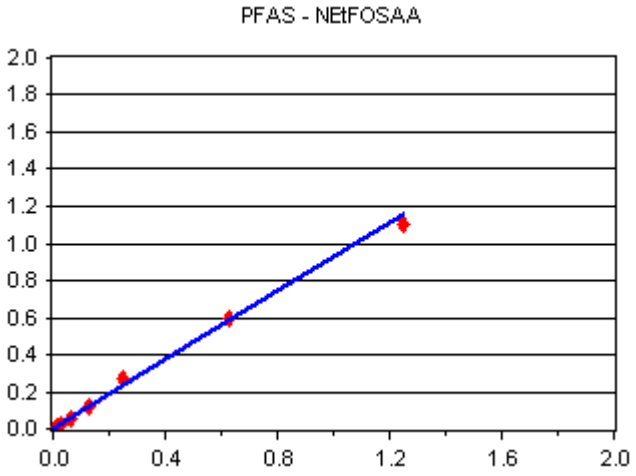
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9998281
[Y] = 1.141497 * [X]

Perfluoroundecanoic acid (PFUnA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9993882
[Y] = 0.9949992 * [X]

NEtFOSAA



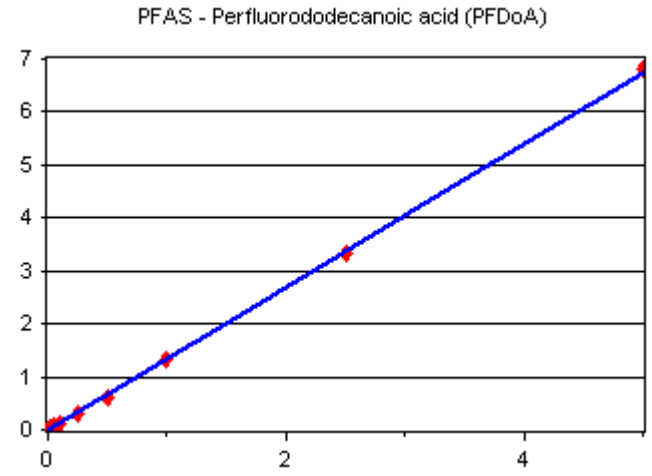
Linear Regression Weighted 1/X Force thru Zero
r2: 0.995165
[Y] = 0.9290448 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

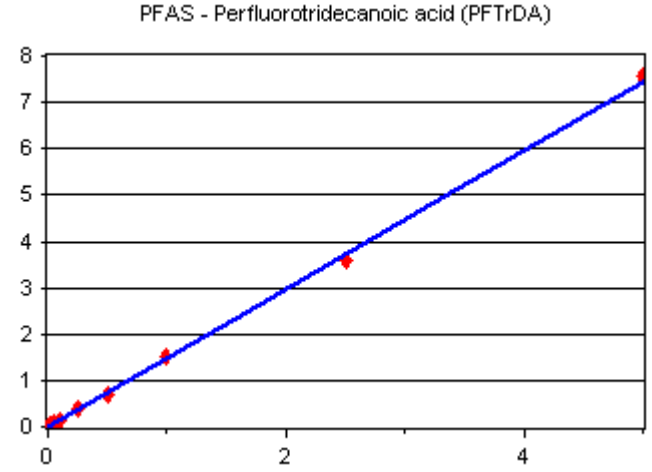
PFAS (Continued)

Perfluorododecanoic acid (PFDoA)



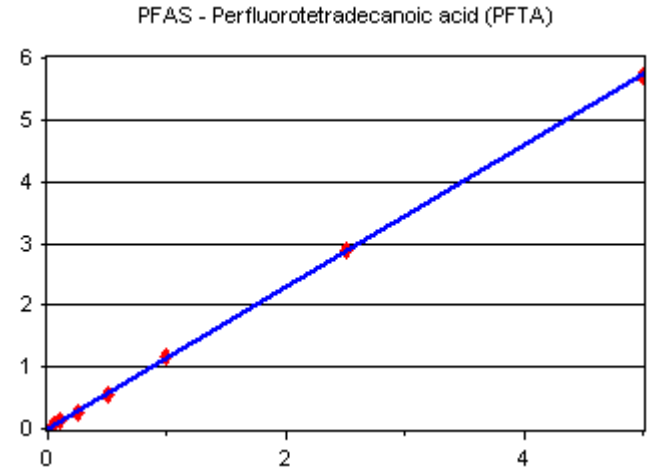
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9996495
[Y] = 1.346109 * [X]

Perfluorotridecanoic acid (PFTrDA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9993912
[Y] = 1.488072 * [X]

Perfluorotetradecanoic acid (PFTA)



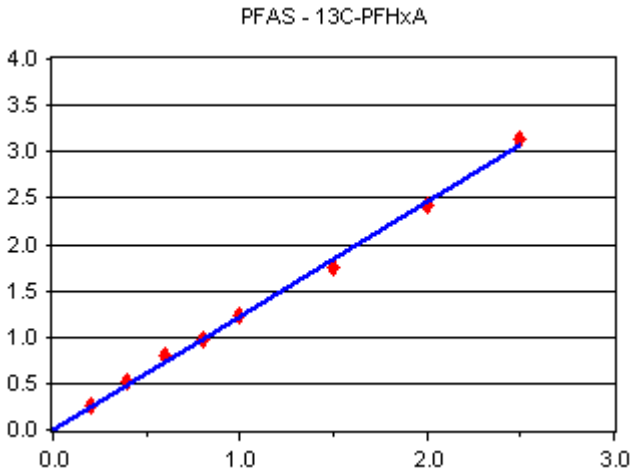
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9999181
[Y] = 1.148448 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

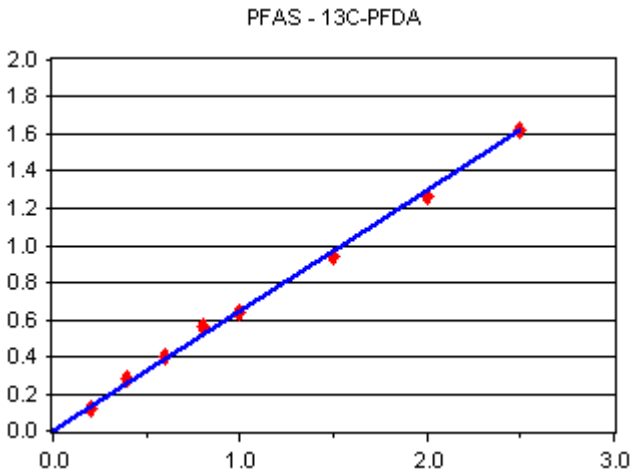
PFAS (Continued)

13C-PFHxA



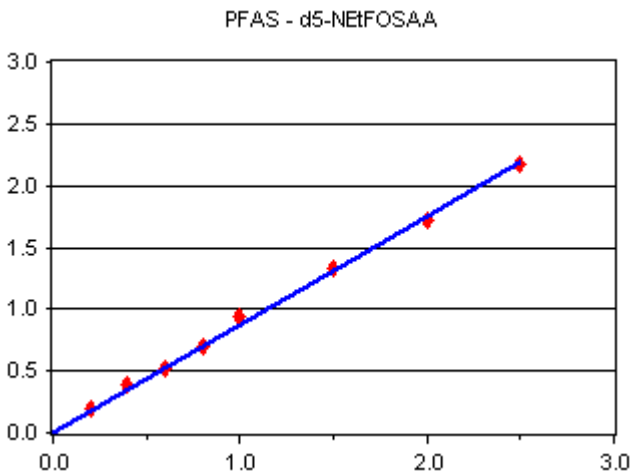
Linear Regression Force thru Zero
r2: 0.9973746
[Y] = 1.229308 * [X]

13C-PFDA



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9973378
[Y] = 0.6479651 * [X]

d5-NEtFOSAA



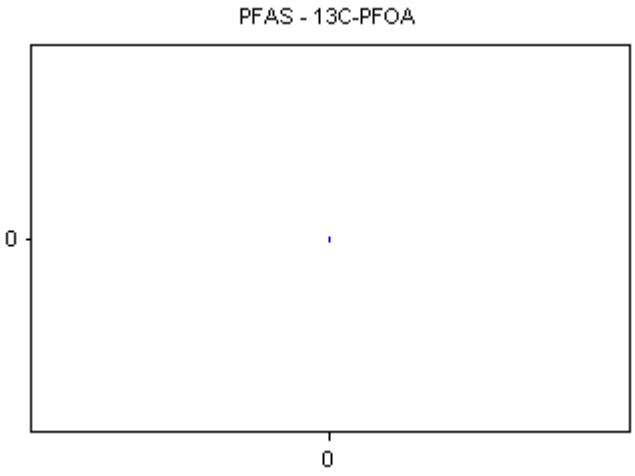
Linear Regression Force thru Zero
r2: 0.9972147
[Y] = 0.8750186 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

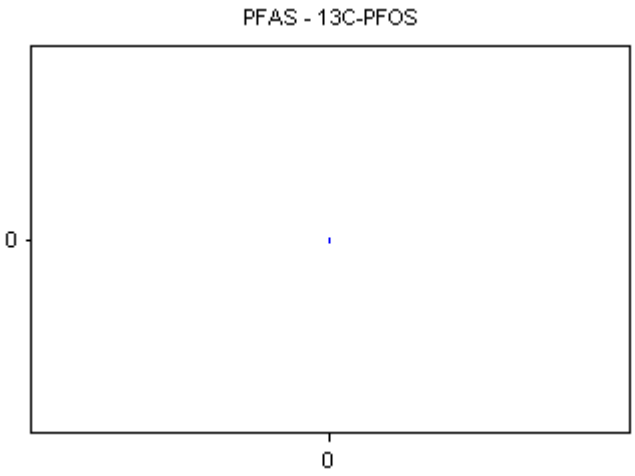
PFAS (Continued)

13C-PFOA



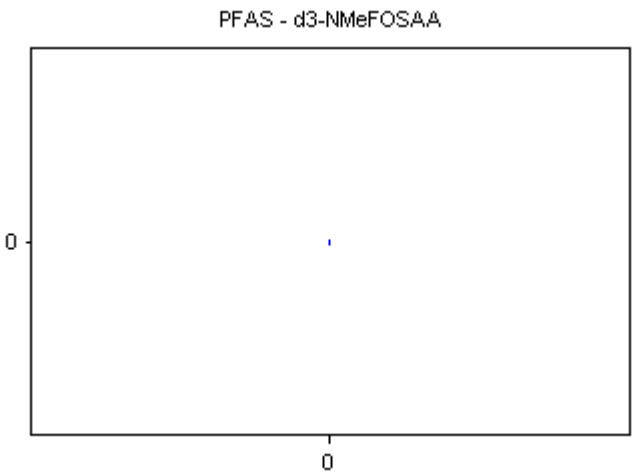
Linear Regression Weighted 1/X Force thru Zero
r2:
[Y] = * [X]

13C-PFOS



Linear Regression Weighted 1/X Force thru Zero
r2:
[Y] = * [X]

d3-NMeFOSAA



Linear Regression Weighted 1/X Force thru Zero
r2:
[Y] = * [X]

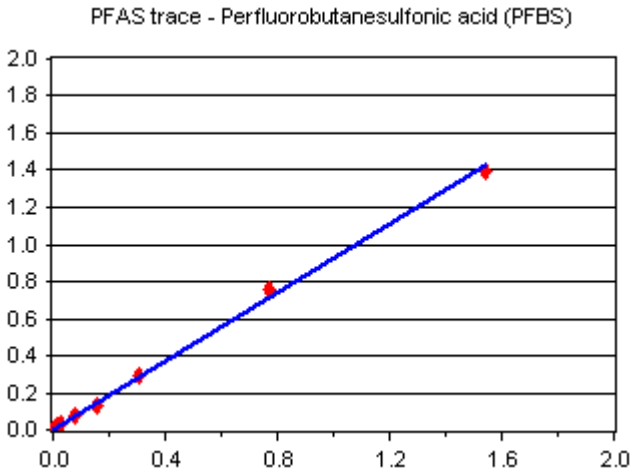
PFAS trace

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

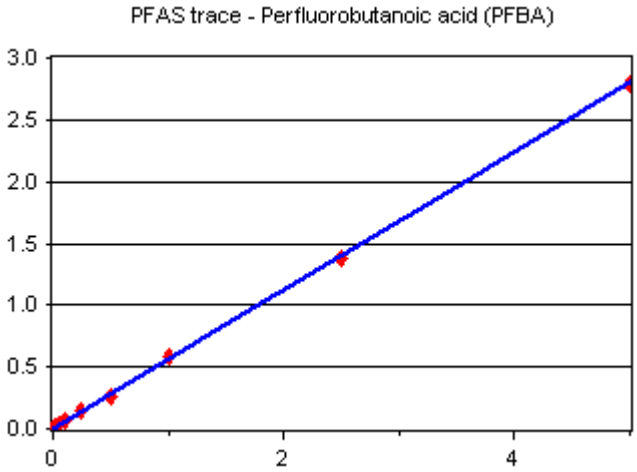
PFAS trace (Continued)

Perfluorobutanesulfonic acid (PFBS)



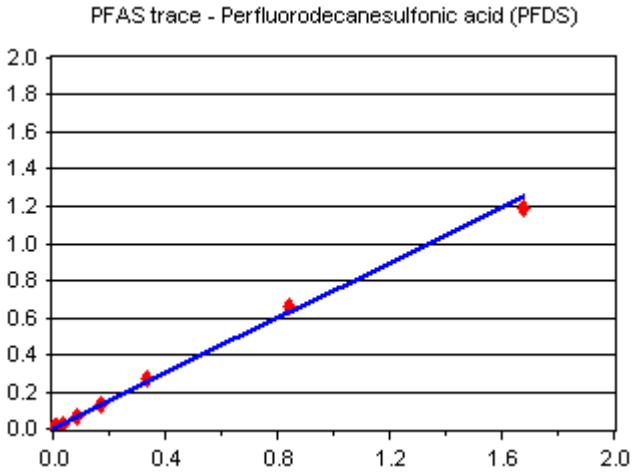
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9980559
[Y] = 0.9295738 * [X]

Perfluorobutanoic acid (PFBA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.999777
[Y] = 0.5610078 * [X]

Perfluorodecanesulfonic acid (PFDS)



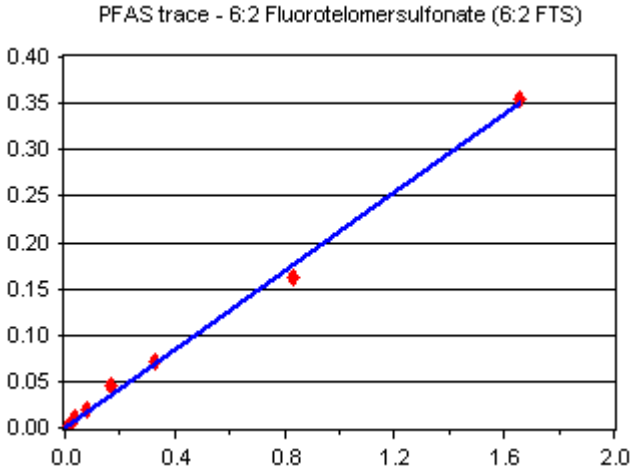
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9956197
[Y] = 0.7480279 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

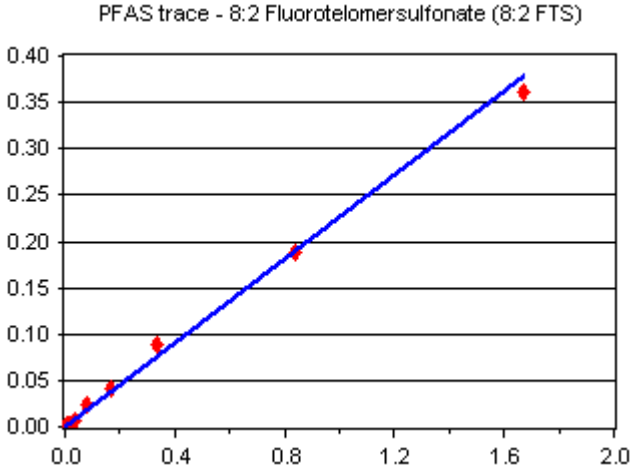
PFAS trace (Continued)

6:2 Fluorotelomersulfonate (6:2 FTS)



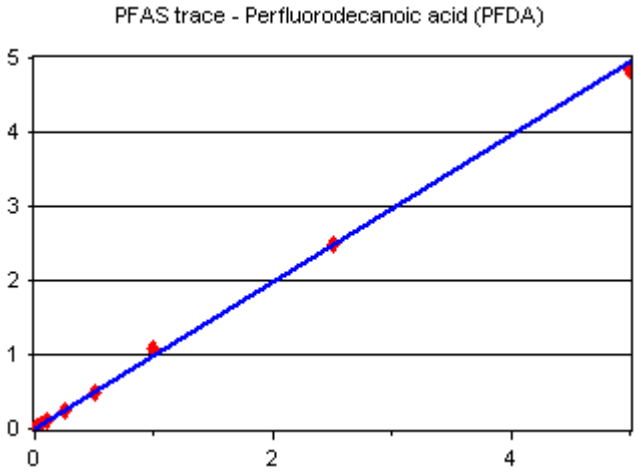
Linear Regression Force thru Zero
r2: 0.9970512
[Y] = 0.2110397 * [X]

8:2 Fluorotelomersulfonate (8:2 FTS)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9956703
[Y] = 0.2259949 * [X]

Perfluorodecanoic acid (PFDA)



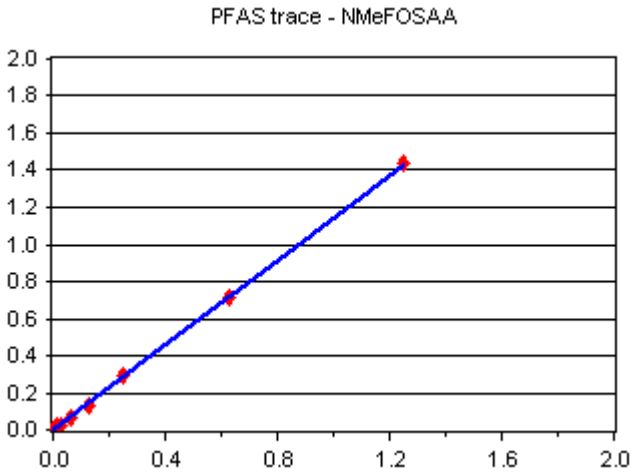
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9990778
[Y] = 0.9898799 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

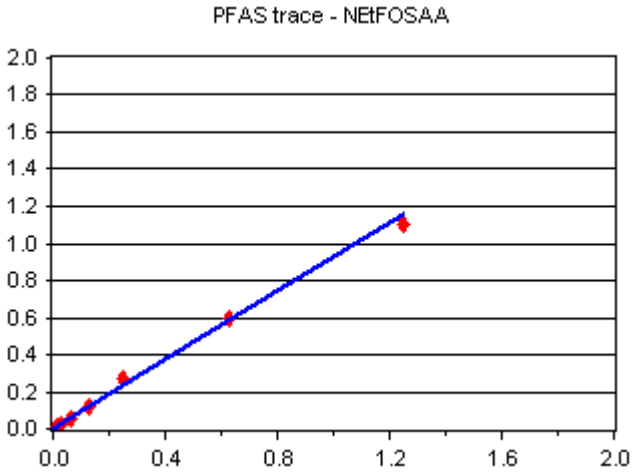
PFAS trace (Continued)

NMeFOSAA



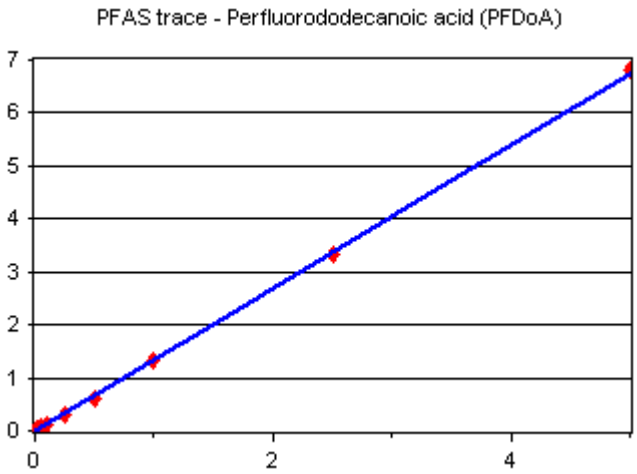
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9998281
[Y] = 1.141497 * [X]

NEtFOSAA



Linear Regression Weighted 1/X Force thru Zero
r2: 0.995165
[Y] = 0.9290448 * [X]

Perfluorododecanoic acid (PFDoA)



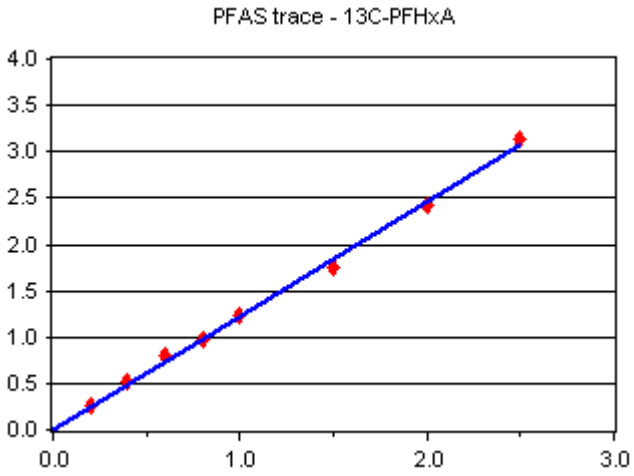
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9996495
[Y] = 1.346109 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

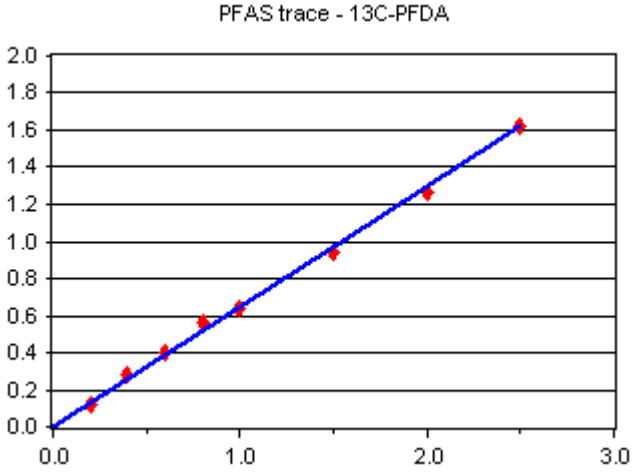
PFAS trace (Continued)

13C-PFHxA



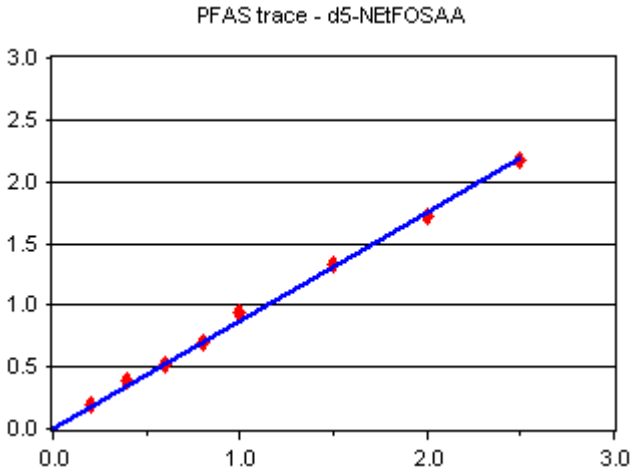
Linear Regression Force thru Zero
r2: 0.9973746
[Y] = 1.229308 * [X]

13C-PFDA



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9973378
[Y] = 0.6479651 * [X]

d5-NEtFOSAA



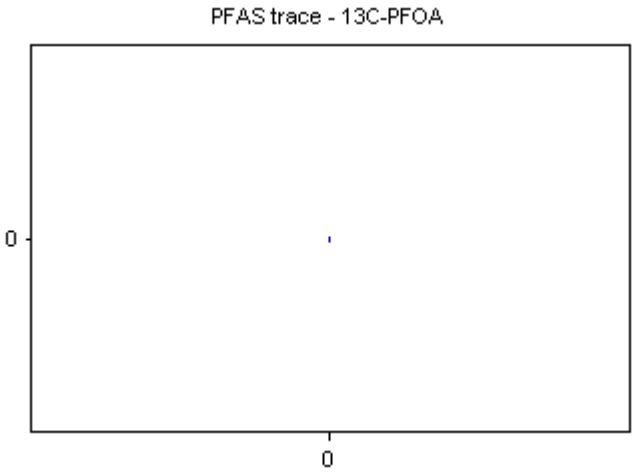
Linear Regression Force thru Zero
r2: 0.9972147
[Y] = 0.8750186 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

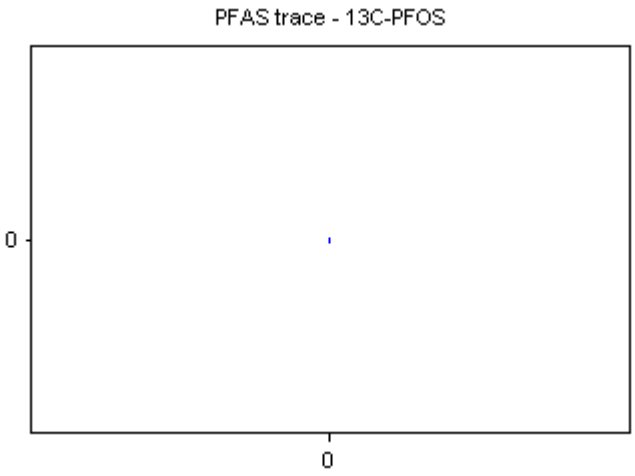
PFAS trace (Continued)

13C-PFOA



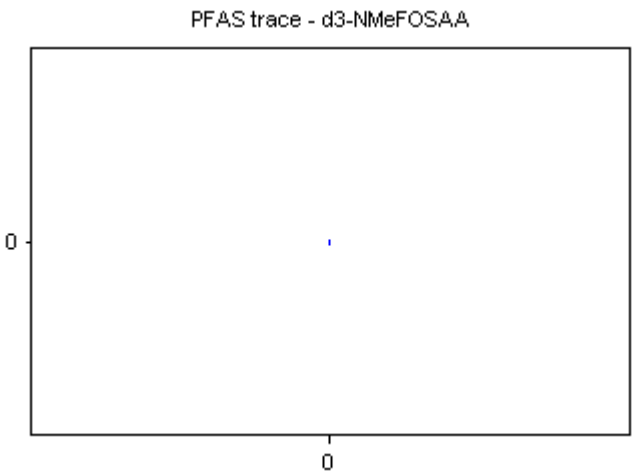
Linear Regression Weighted 1/X Force thru Zero
r2:
[Y] = * [X]

13C-PFOS



Linear Regression Weighted 1/X Force thru Zero
r2:
[Y] = * [X]

d3-NMeFOSAA



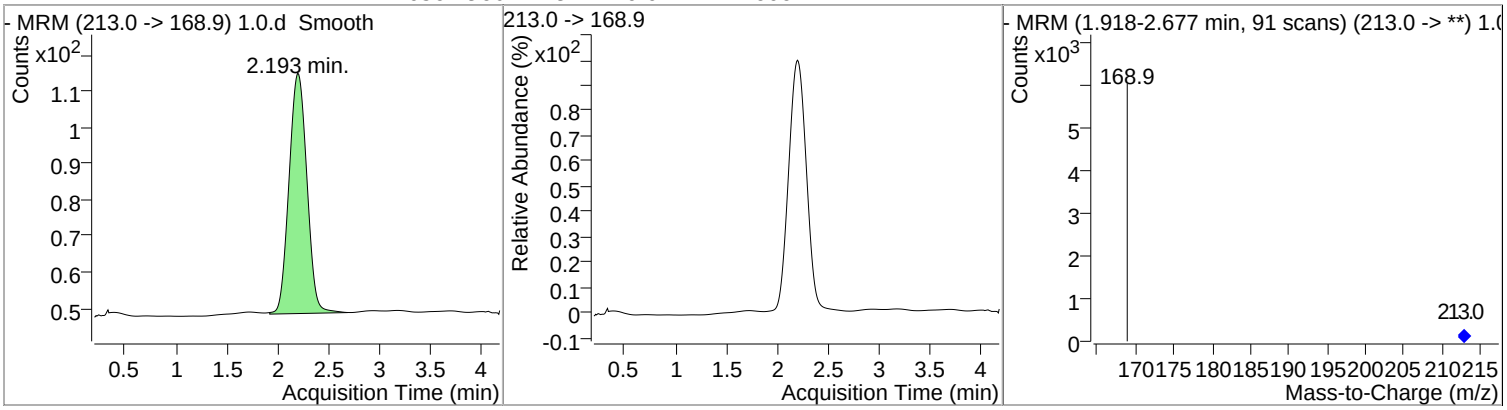
Linear Regression Weighted 1/X Force thru Zero
r2:
[Y] = * [X]

Data File	1.0.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/20/2018 9:40:41 PM
Sample Name	1.0	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

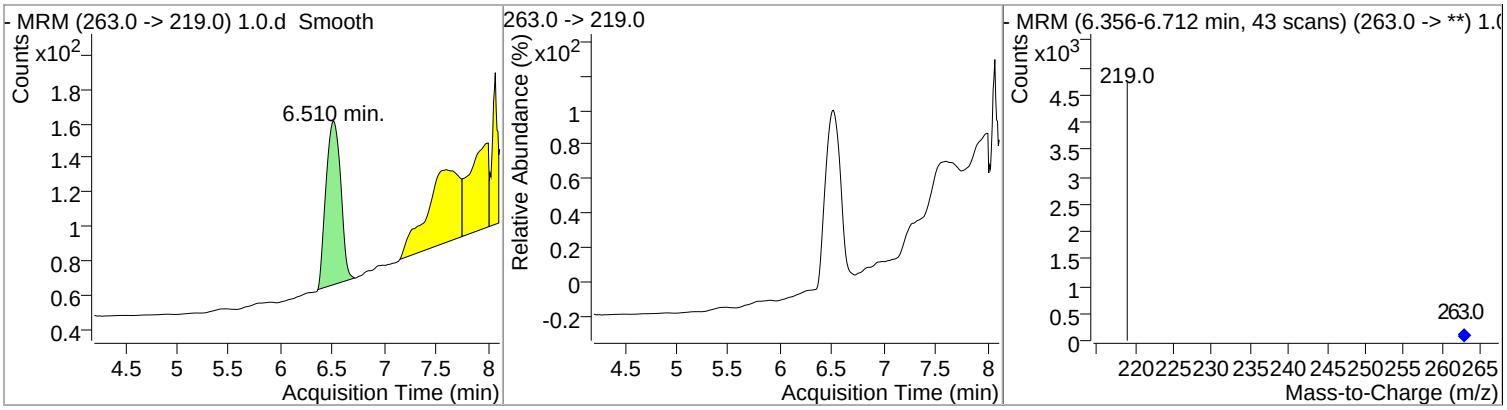
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	8.005	416.9 -> 371.9	13610	10000.0000	pg/ml		0.354
M PFOS C13	8.221	502.9 -> 80.0	11824	28700.0000	pg/ml		0.321
M d3-N-MeFOSAA	8.489	573.2 -> 419.0	12548	40000.0000	pg/ml		0.304
System Monitoring Compounds							
S PFHxA C13	7.350	314.9 -> 269.9	10863	6492.6077	pg/ml		0.413
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 64.93%		*	
S PFDA C13	8.397	514.9 -> 469.9	5517	6255.9506	pg/ml		0.304
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 62.56%		*	
S d5-N-MeFOSAA	8.572	589.2 -> 419.0	6558	23890.3206	pg/ml		0.304
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 59.73%		*	
Target Compounds							QValue
T PFBA	2.193	213.0 -> 168.9	808	1058.1986	pg/ml		100
T PFPeA	6.510	263.0 -> 219.0	950	989.9811	pg/ml		100
T PFBS	6.880	298.9 -> 80.0	370	968.1992	pg/ml		100
T PFHxA	7.350	312.9 -> 268.9	1494	972.0070	pg/ml		100
T PFHpA	7.737	362.9 -> 319.0	1848	1120.2656	pg/ml	m	100
T 6.2 FTS	7.996	427.0 -> 406.8	121	1393.1031	pg/ml		100
T PFOA-Total	8.005	412.9 -> 368.9	1485	951.8708	pg/ml		100
T PFHpS	8.021	449.0 -> 79.7	201	814.4028	pg/ml	m	100
T PFHxS-Total	7.762	398.9 -> 80.0	301	867.5661	pg/ml		100
T PFNA	8.223	462.9 -> 418.9	808	1019.7157	pg/ml		100
T PFOS-Total	8.222	498.9 -> 80.0	464	891.5905	pg/ml		100
T PFDA	8.398	513.1 -> 469.0	1343	996.5233	pg/ml		100
T 8.2 FTS	8.414	527.0 -> 81.0	73	782.8770	pg/ml		100
T N-MeFOSAA	8.489	570.2 -> 419.1	302	842.5518	pg/ml		100
T FOSA	8.542	497.9 -> 77.9	1169	1051.5593	pg/ml		100
T PFDS	8.563	599.0 -> 80.0	319	1034.5090	pg/ml		100
T N-EtFOSAA	8.572	584.2 -> 419.0	291	997.9065	pg/ml	m	100
T PFUnA	8.565	563.1 -> 519.0	1396	1030.6668	pg/ml		100
T PFDoA	8.739	613.1 -> 569.0	1666	909.5071	pg/ml	m	100
T PFTrDA	8.932	663.1 -> 619.0	2002	988.3457	pg/ml	m	100
T PFTA	9.150	713.1 -> 669.1	1738	1111.9653	pg/ml	m	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

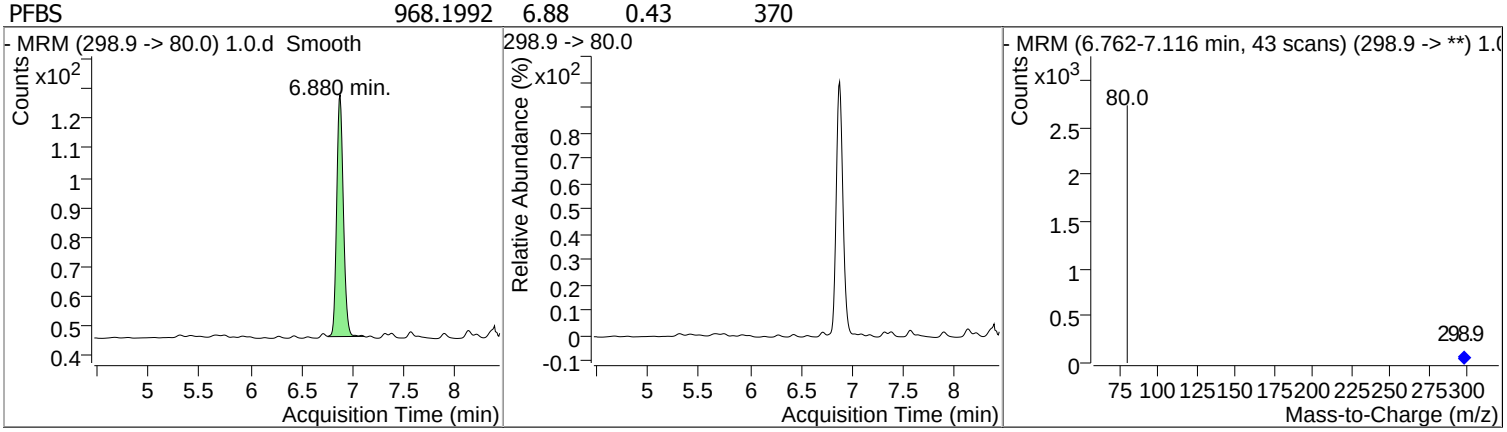
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	1058.1986	2.19	0.02	808				



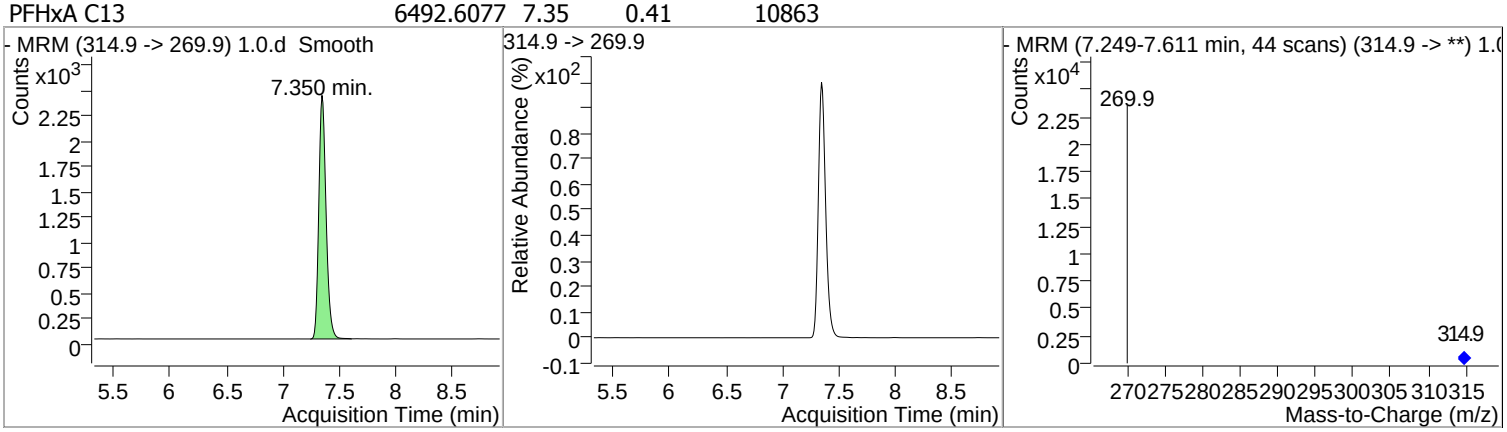
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	989.9811	6.51	0.40	950				



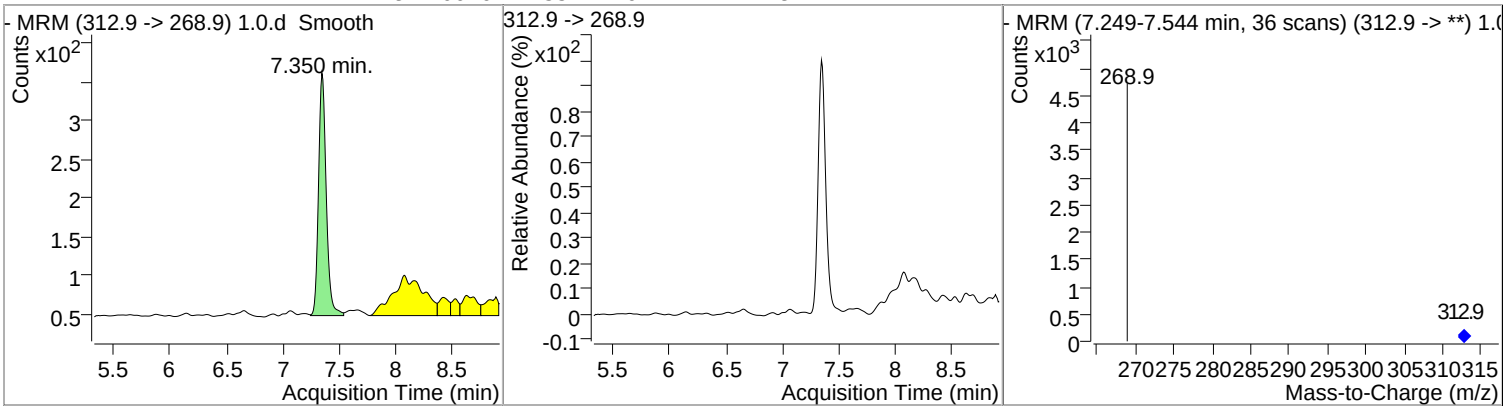
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	968.1992	6.88	0.43	370				



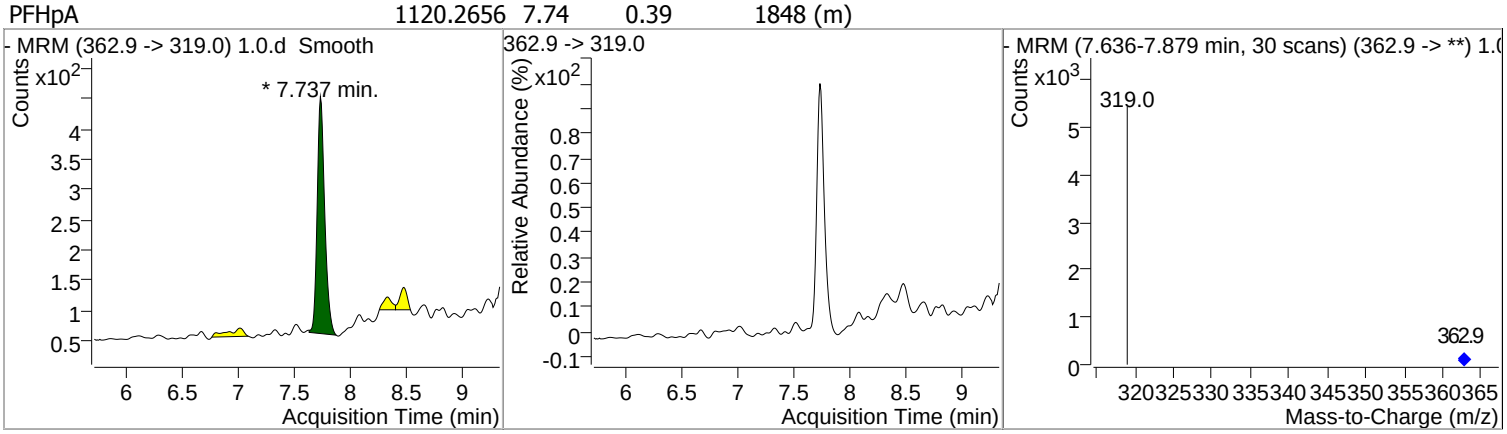
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	6492.6077	7.35	0.41	10863				



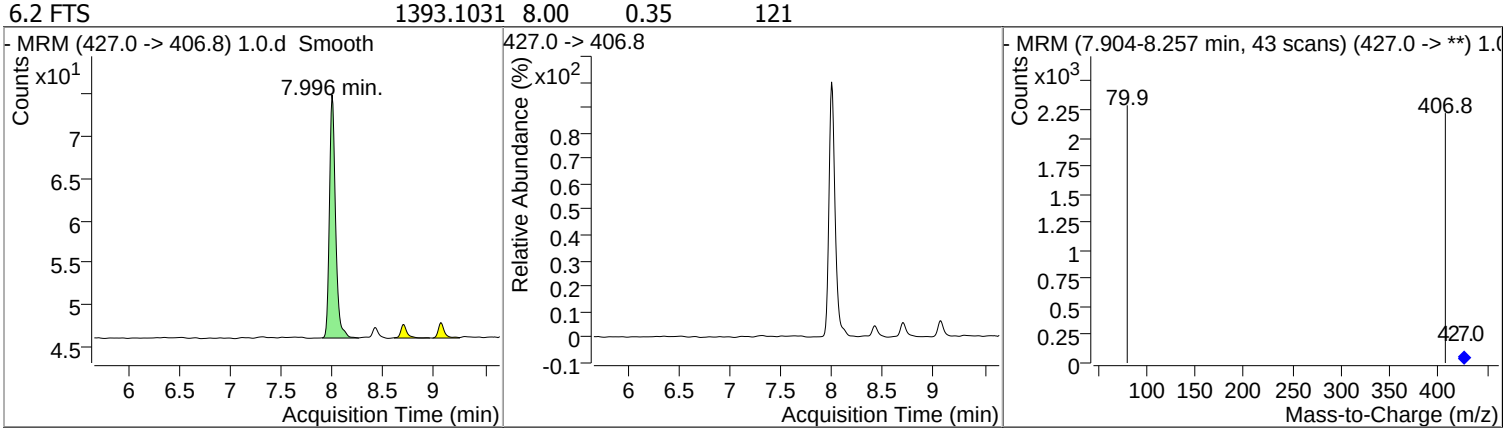
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	972.0070	7.35	0.41	1494				



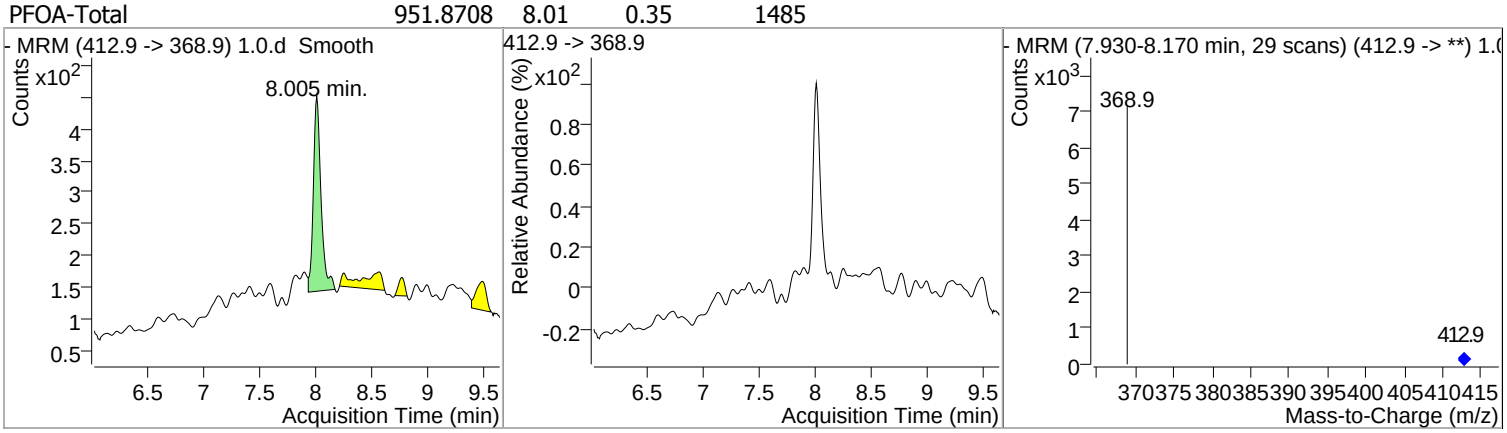
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	1120.2656	7.74	0.39	1848 (m)				



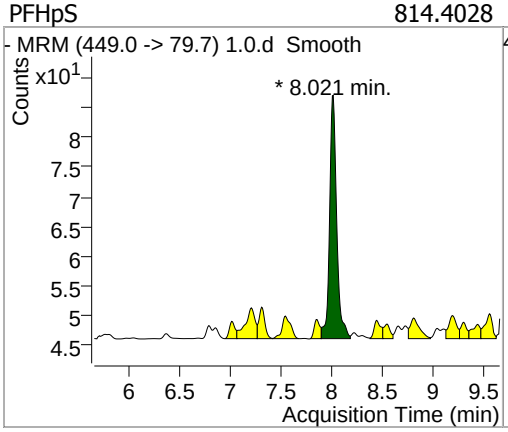
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	1393.1031	8.00	0.35	121				

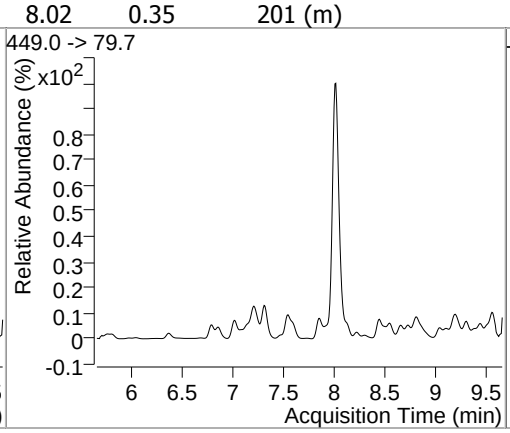


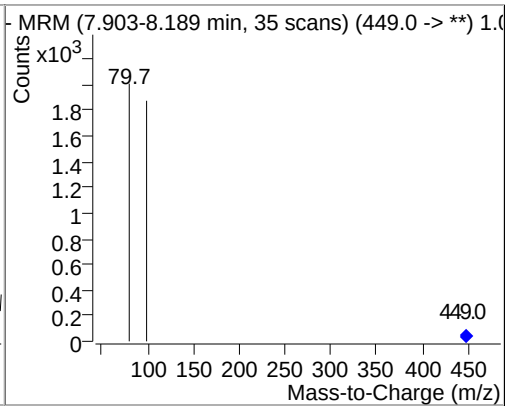
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	951.8708	8.01	0.35	1485				



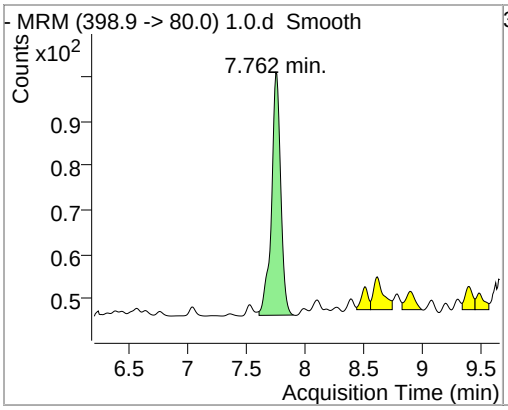
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	814.4028	8.02	0.35	201 (m)				

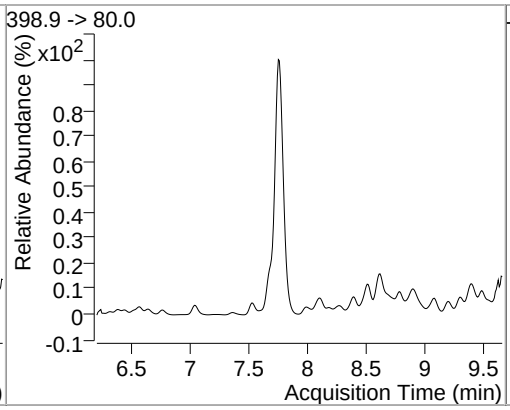


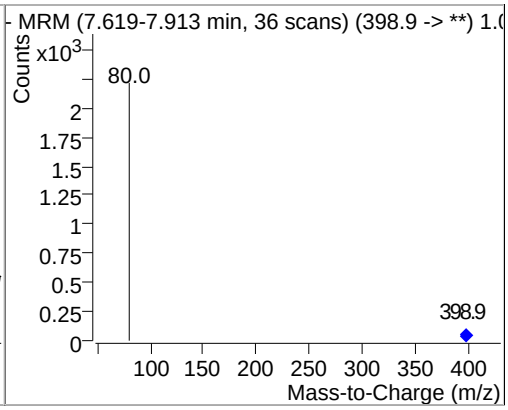




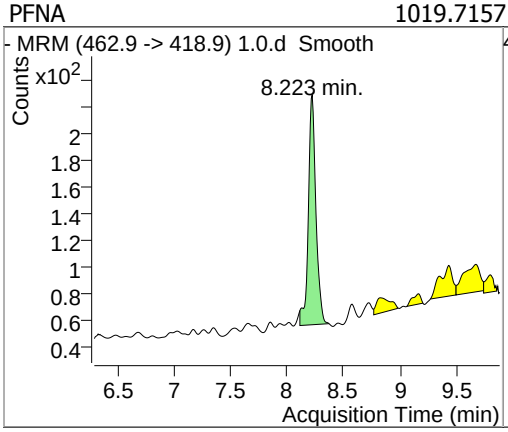
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	867.5661	7.76	0.08	301				

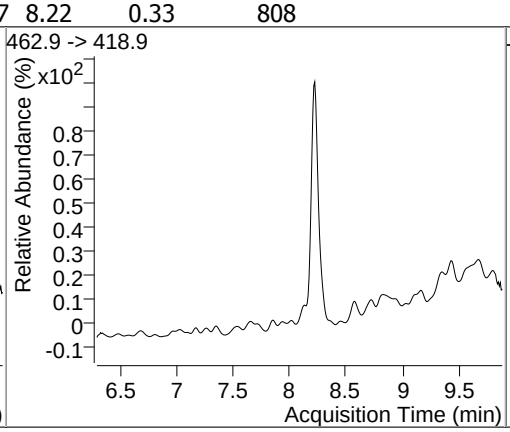


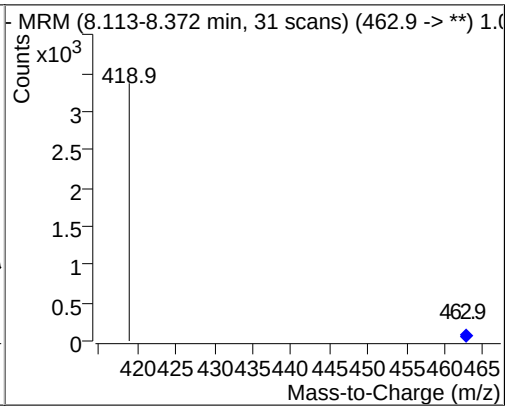




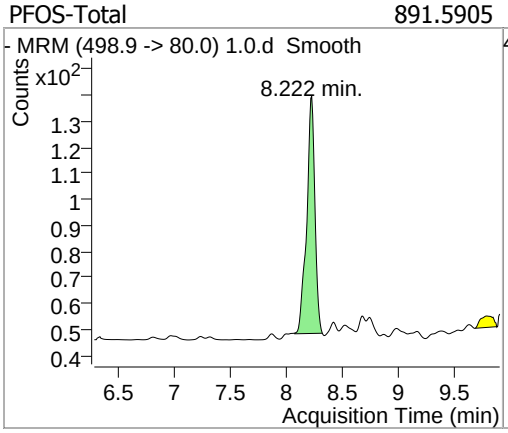
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	1019.7157	8.22	0.33	808				

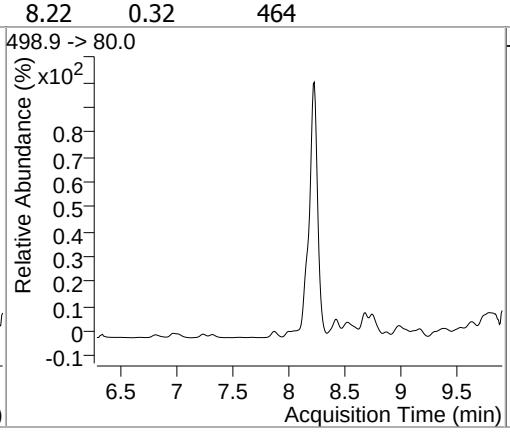


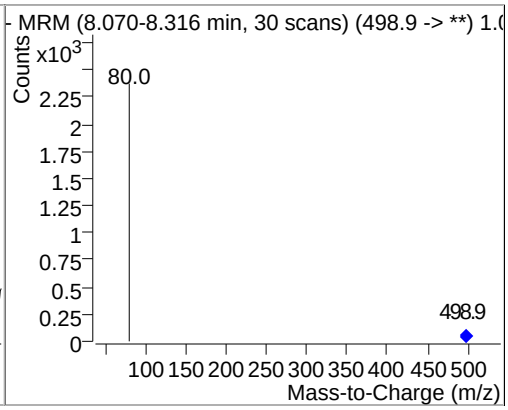




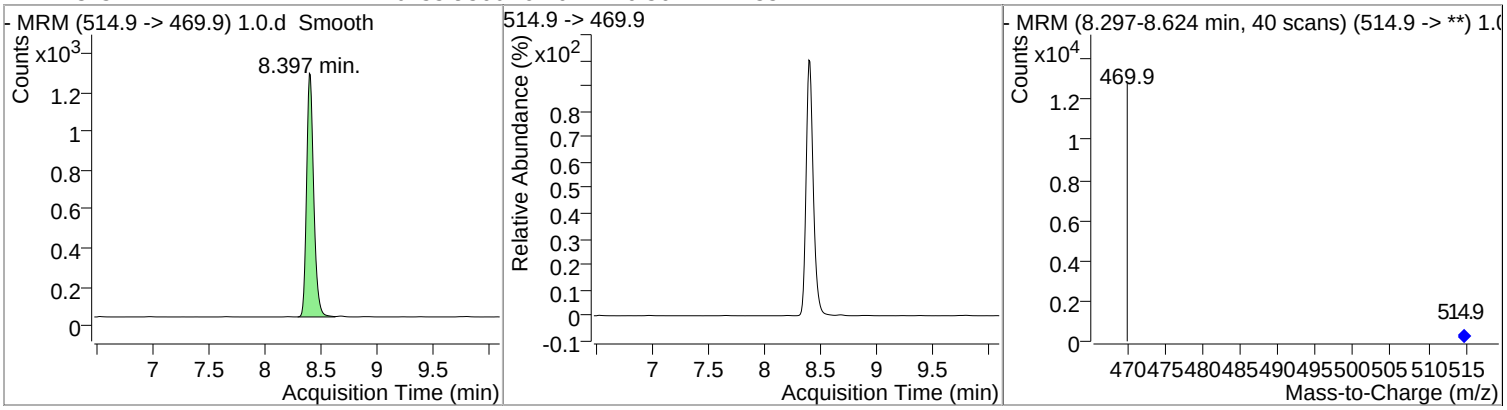
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	891.5905	8.22	0.32	464				



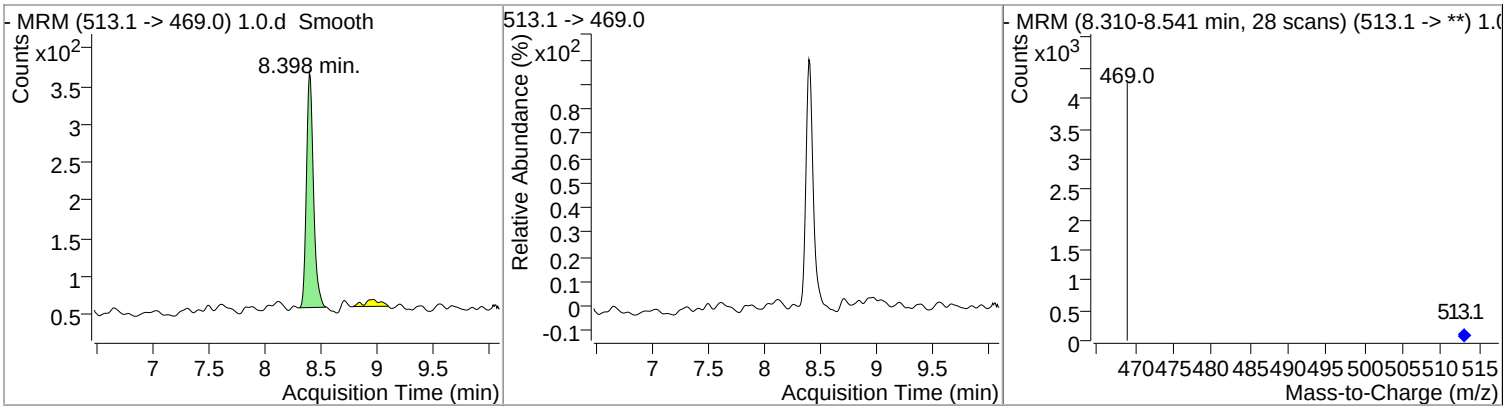




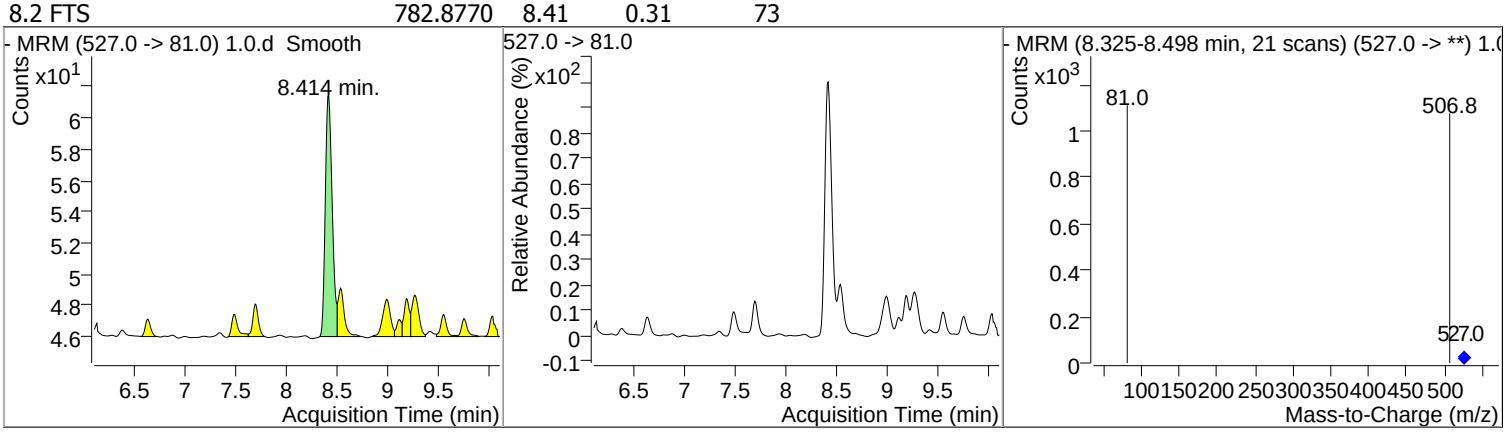
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	6255.9506	8.40	0.30	5517				



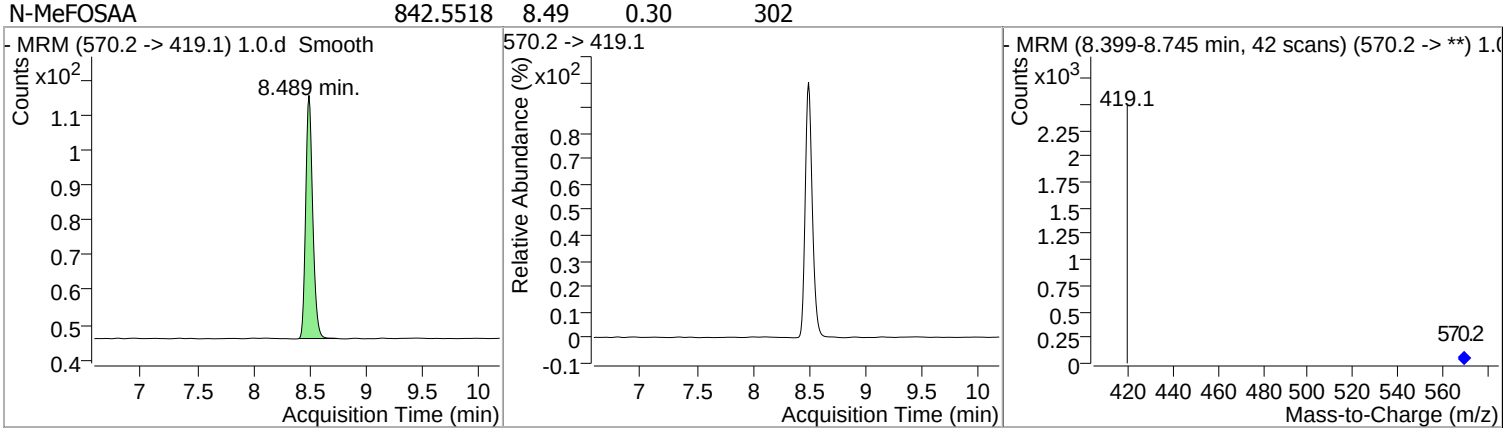
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	996.5233	8.40	0.30	1343				



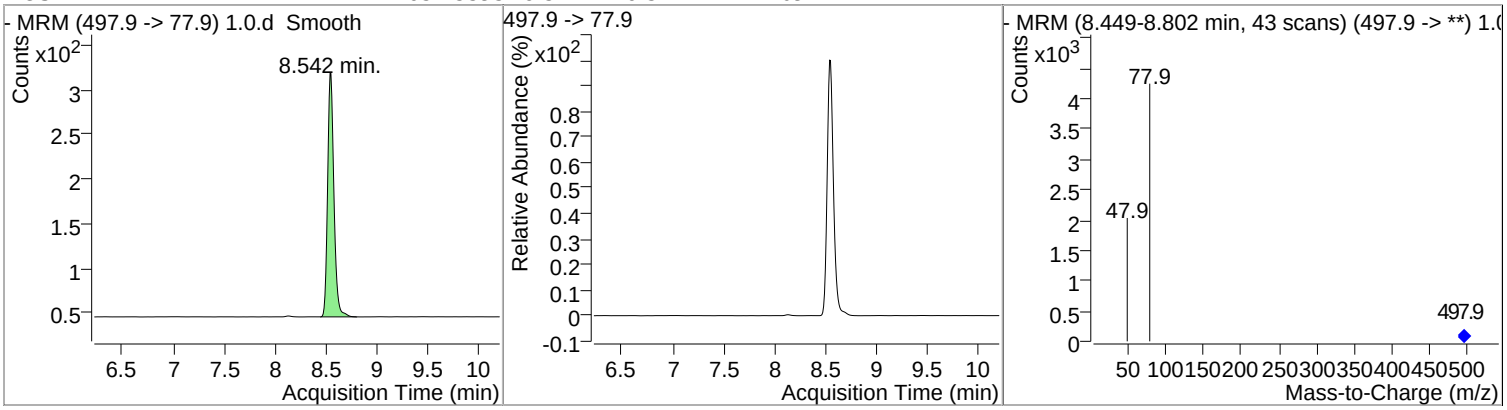
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	782.8770	8.41	0.31	73				



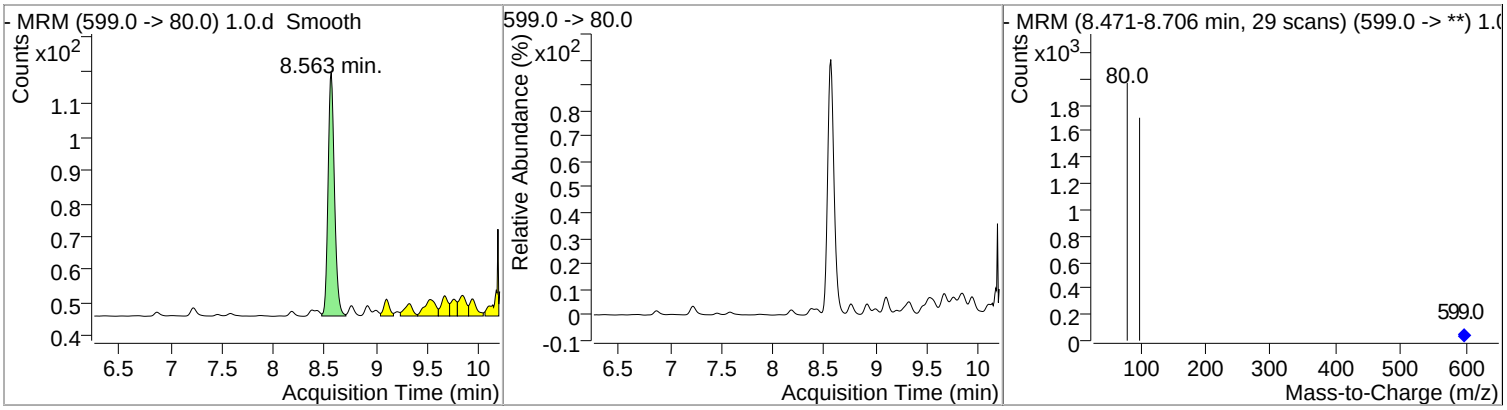
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	842.5518	8.49	0.30	302				



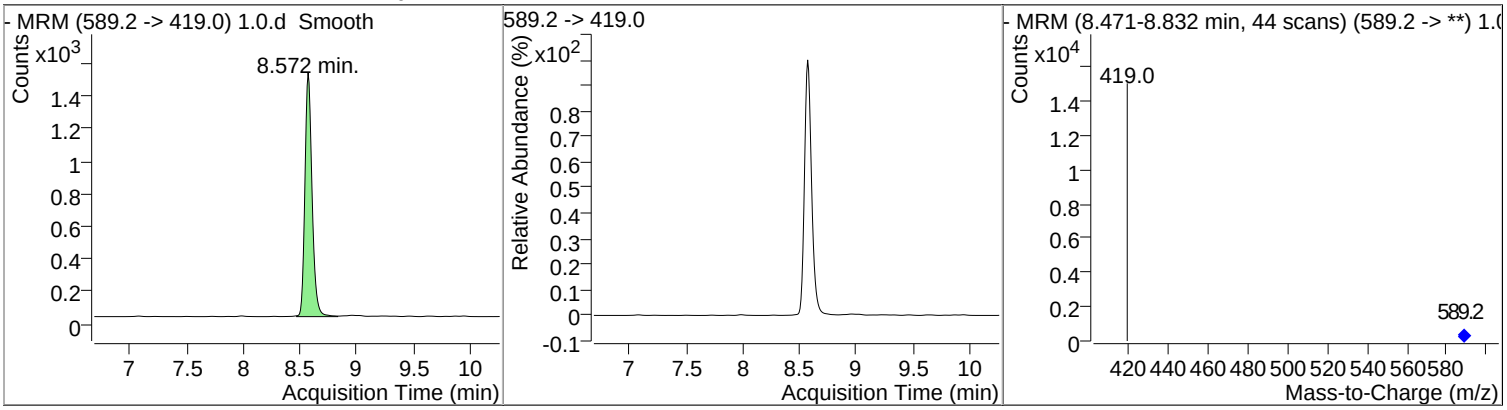
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	1051.5593	8.54	0.32	1169				



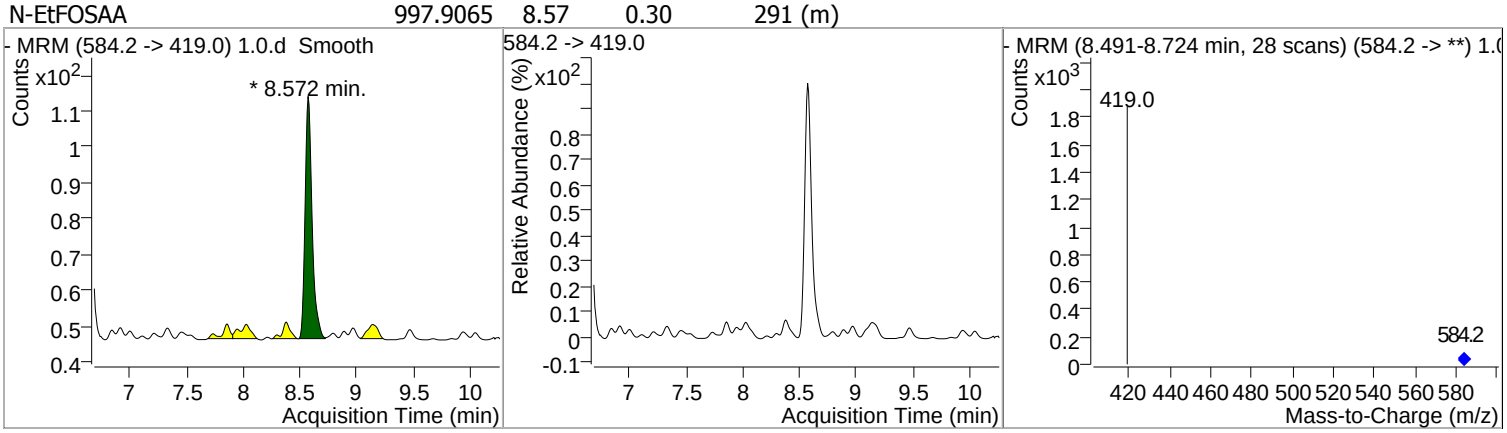
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	1034.5090	8.56	0.30	319				



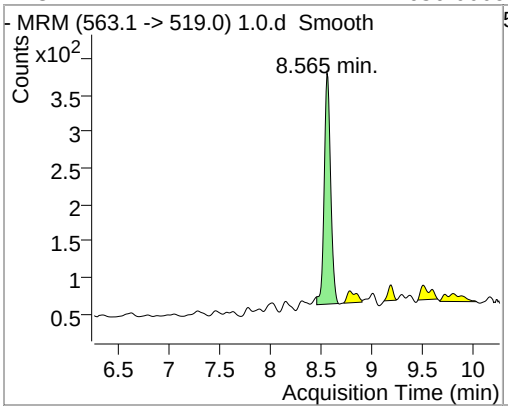
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	23890.3206	8.57	0.30	6558				

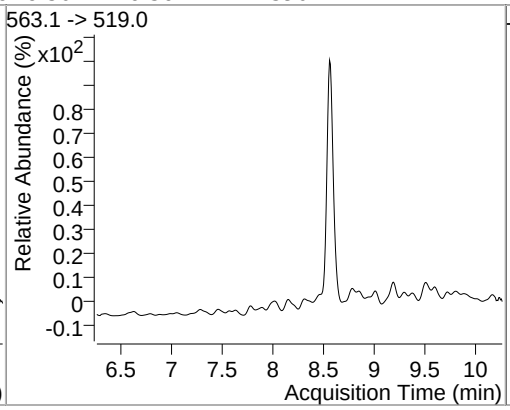


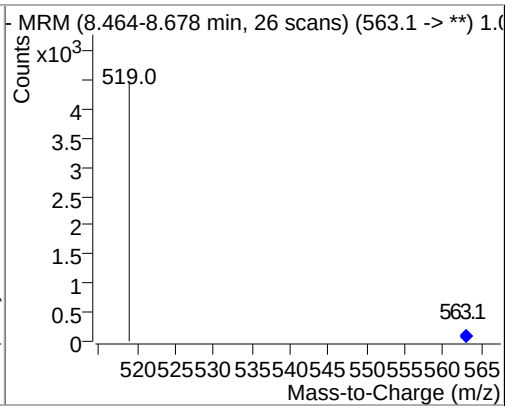
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	997.9065	8.57	0.30	291 (m)				



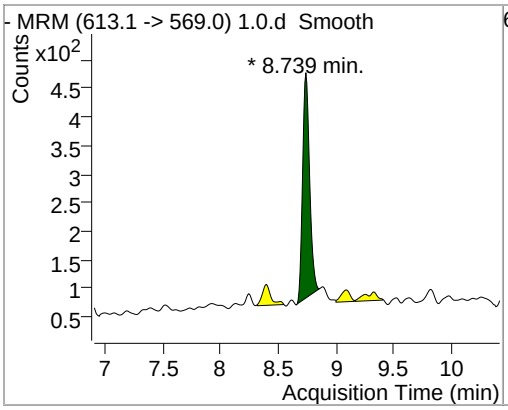
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	1030.6668	8.56	0.30	1396				

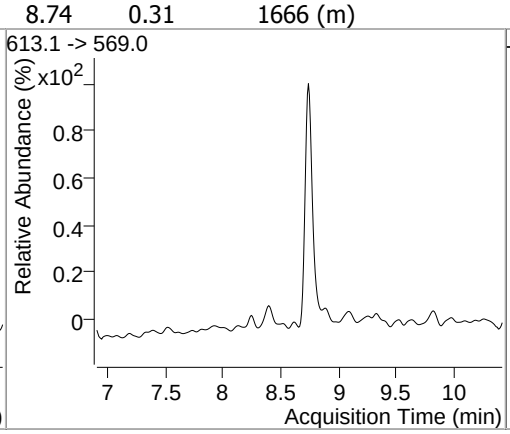


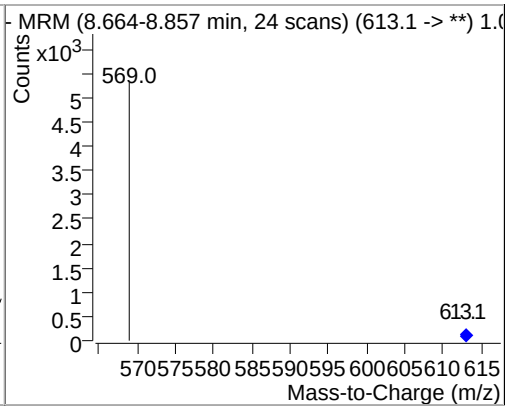




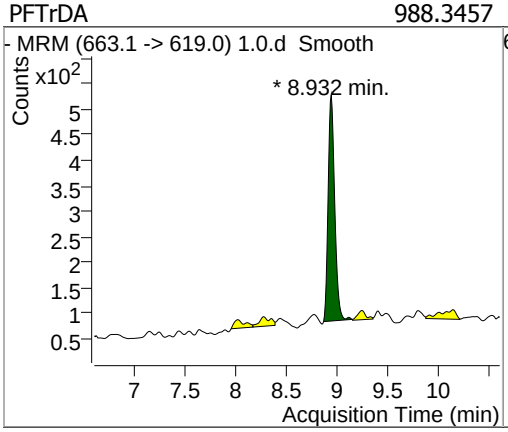
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	909.5071	8.74	0.31	1666 (m)				

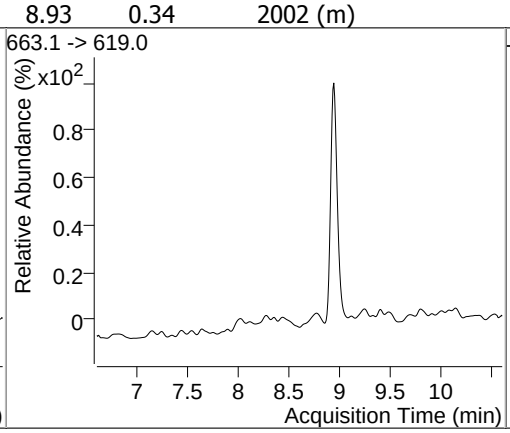


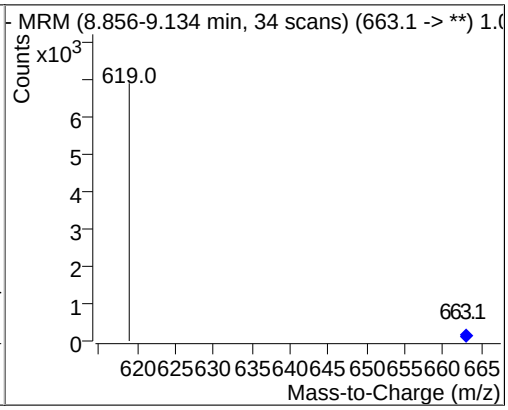




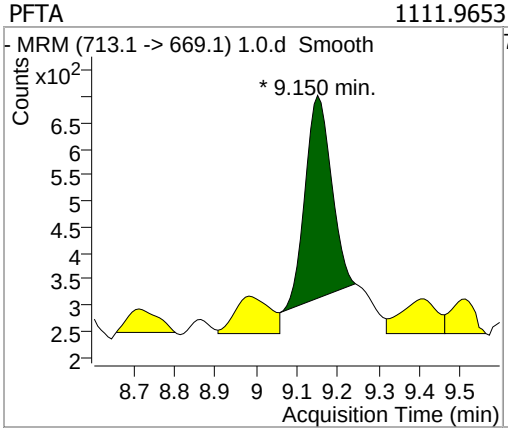
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	988.3457	8.93	0.34	2002 (m)				

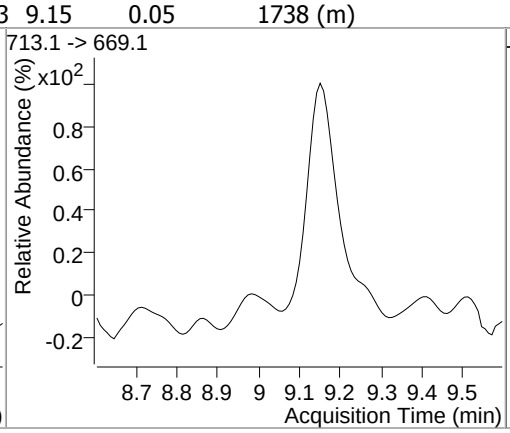


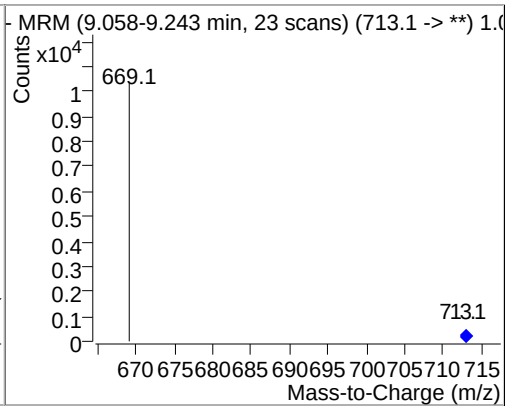




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	1111.9653	9.15	0.05	1738 (m)				





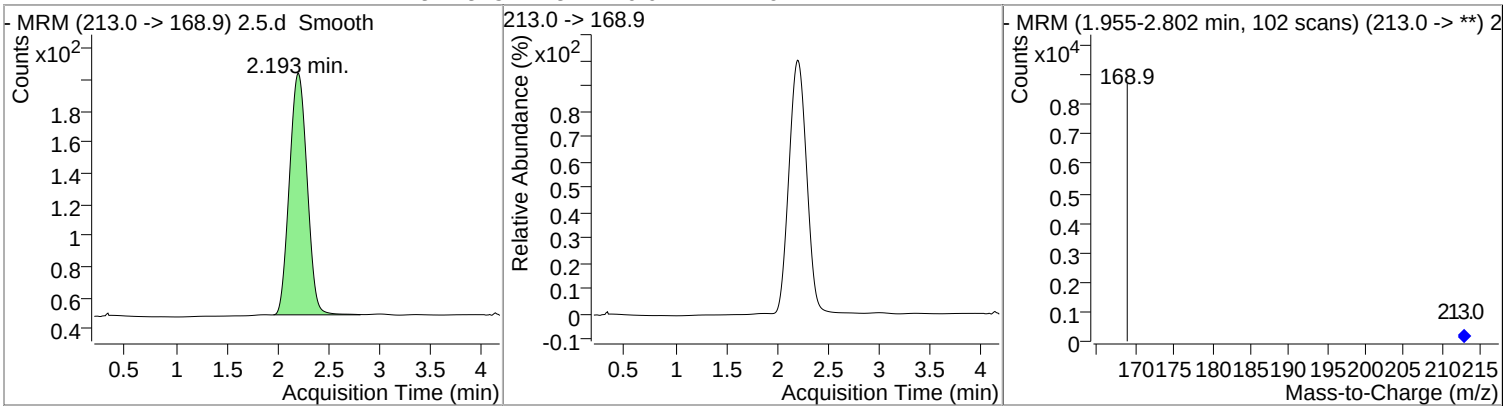


Data File	2.5.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/20/2018 9:53:26 PM
Sample Name	2.5	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

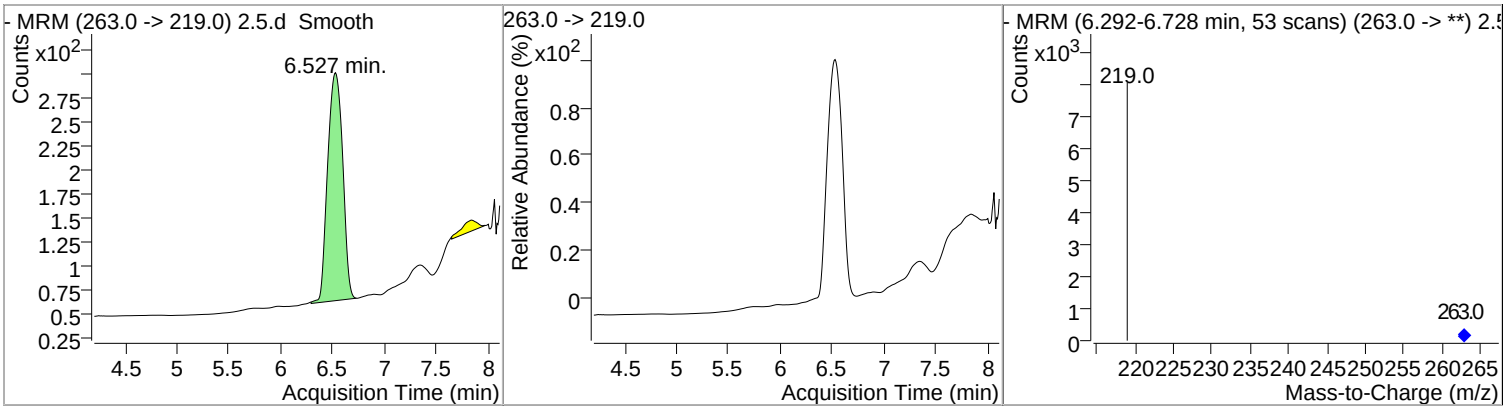
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	8.022	416.9 -> 371.9	13379	10000.0000	pg/ml		0.371
M PFOS C13	8.230	502.9 -> 80.0	10613	28700.0000	pg/ml		0.329
M d3-N-MeFOSAA	8.497	573.2 -> 419.0	11503	40000.0000	pg/ml		0.313
System Monitoring Compounds							
S PFHxA C13	7.358	314.9 -> 269.9	13103	7966.6742	pg/ml		0.421
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 79.67%			
S PFDA C13	8.414	514.9 -> 469.9	7482	8629.9830	pg/ml		0.321
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 86.30%			
S d5-N-MeFOSAA	8.589	589.2 -> 419.0	8074	32084.6870	pg/ml		0.321
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 80.21%			
Target Compounds							QValue
T PFBA	2.193	213.0 -> 168.9	1871	2492.1915	pg/ml		100
T PFPeA	6.527	263.0 -> 219.0	2398	2542.3162	pg/ml		100
T PFBS	6.896	298.9 -> 80.0	835	2432.3573	pg/ml		100
T PFHxA	7.359	312.9 -> 268.9	3867	2558.2762	pg/ml		100
T PFHpA	7.754	362.9 -> 319.0	4045	2495.1737	pg/ml		100
T 6.2 FTS	8.021	427.0 -> 406.8	211	2704.6955	pg/ml		100
T PFOA-Total	8.022	412.9 -> 368.9	4541	2961.7623	pg/ml		100
T PFHpS	8.029	449.0 -> 79.7	515	2326.2178	pg/ml		100
T PFHxS-Total	7.779	398.9 -> 80.0	700	2243.3993	pg/ml		100
T PFNA	8.231	462.9 -> 418.9	1641	2105.6970	pg/ml		100
T PFOS-Total	8.230	498.9 -> 80.0	1241	2658.6709	pg/ml		100
T PFDA	8.414	513.1 -> 469.0	3400	2566.9675	pg/ml		100
T 8.2 FTS	8.414	527.0 -> 81.0	260	3113.0495	pg/ml	m	100
T N-MeFOSAA	8.506	570.2 -> 419.1	754	2297.4866	pg/ml		100
T FOSA	8.558	497.9 -> 77.9	2583	2533.9409	pg/ml		100
T PFDS	8.571	599.0 -> 80.0	713	2579.9919	pg/ml		100
T N-EtFOSAA	8.589	584.2 -> 419.0	639	2391.9591	pg/ml		100
T PFUnA	8.582	563.1 -> 519.0	3809	2861.4592	pg/ml	m	100
T PFDoA	8.748	613.1 -> 569.0	4294	2384.3450	pg/ml	m	100
T PFTrDA	8.949	663.1 -> 619.0	5373	2698.9013	pg/ml		100
T PFTA	9.167	713.1 -> 669.1	3650	2375.1831	pg/ml	m	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

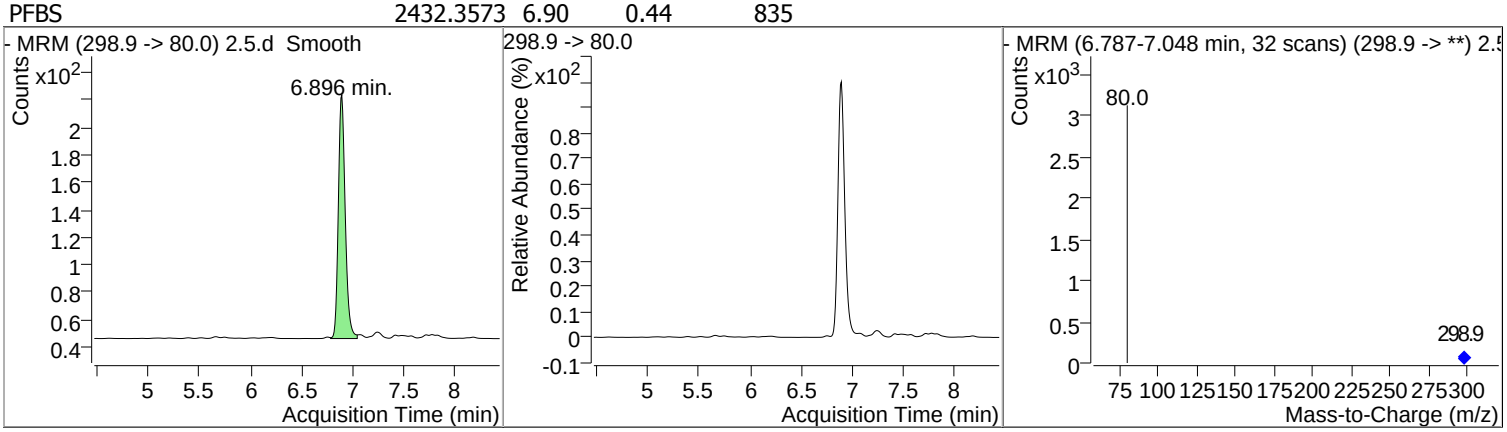
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	2492.1915	2.19	0.02	1871				



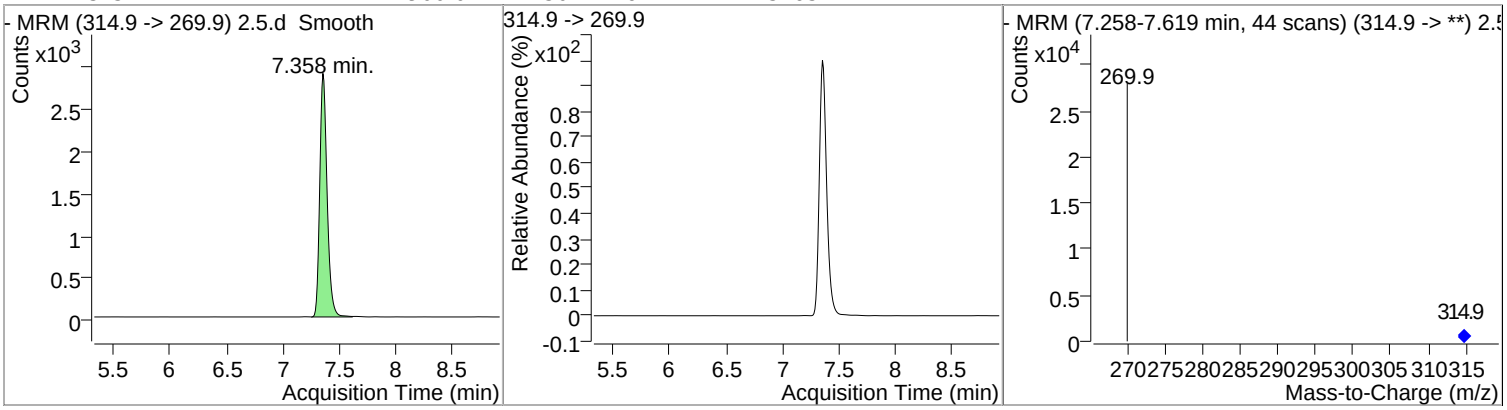
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	2542.3162	6.53	0.42	2398				



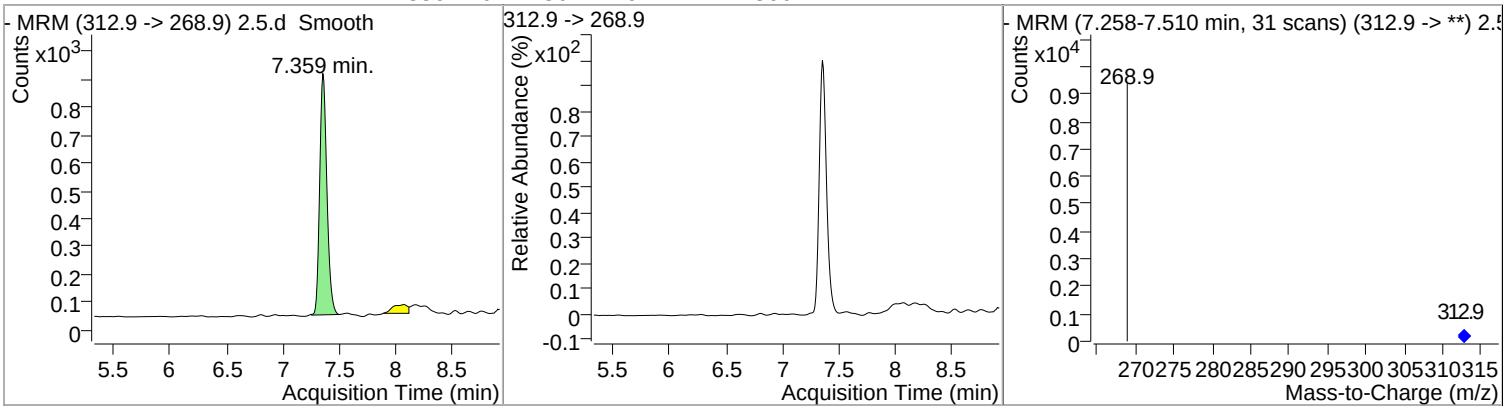
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	2432.3573	6.90	0.44	835				



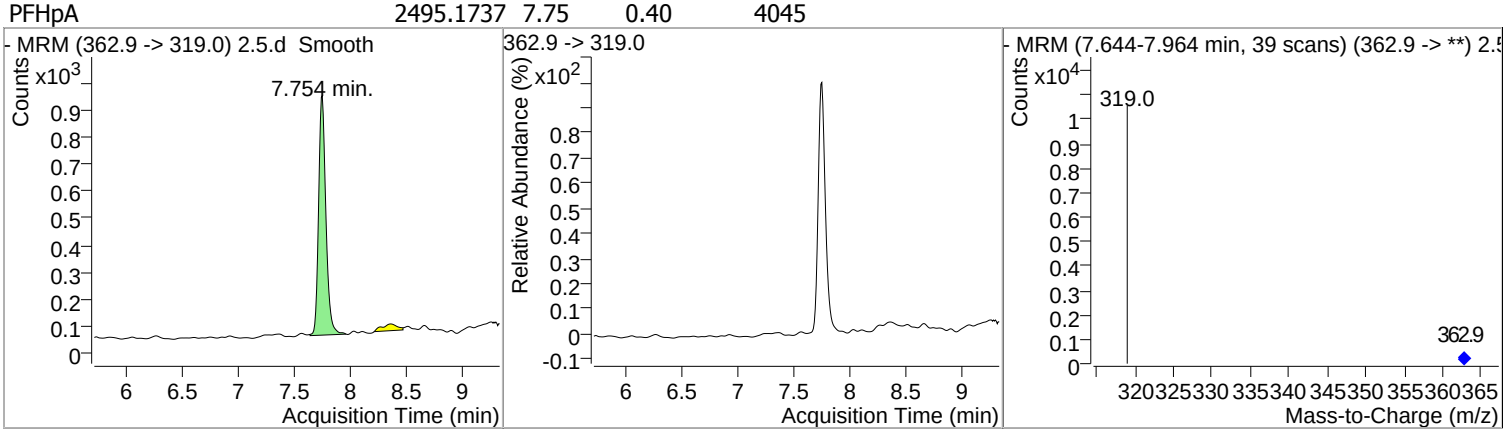
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	7966.6742	7.36	0.42	13103				



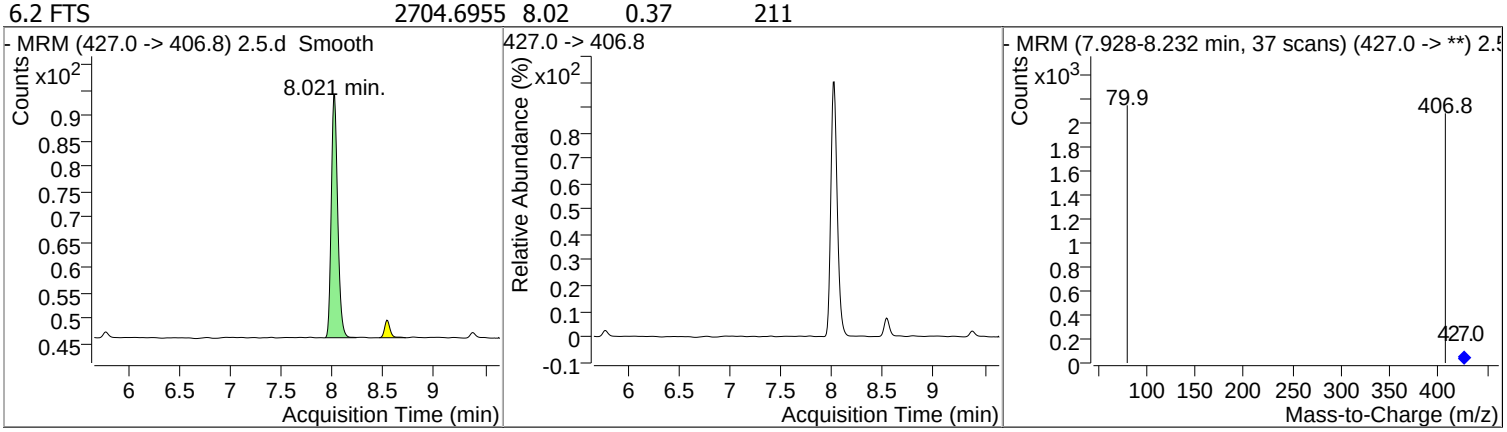
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	2558.2762	7.36	0.42	3867				



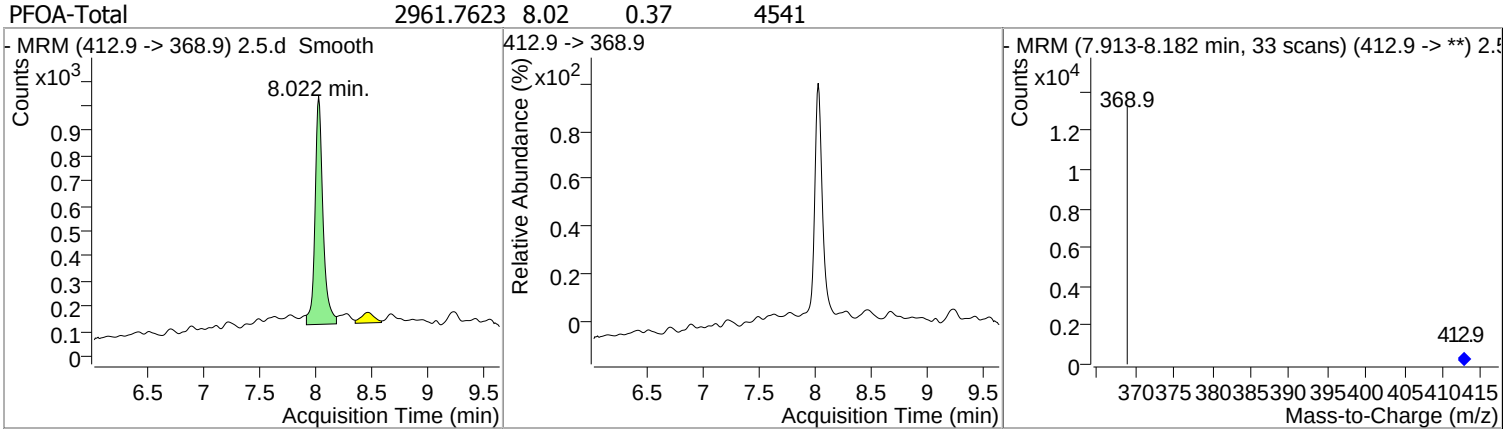
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PFHpA	2495.1737	7.75	0.40	4045				



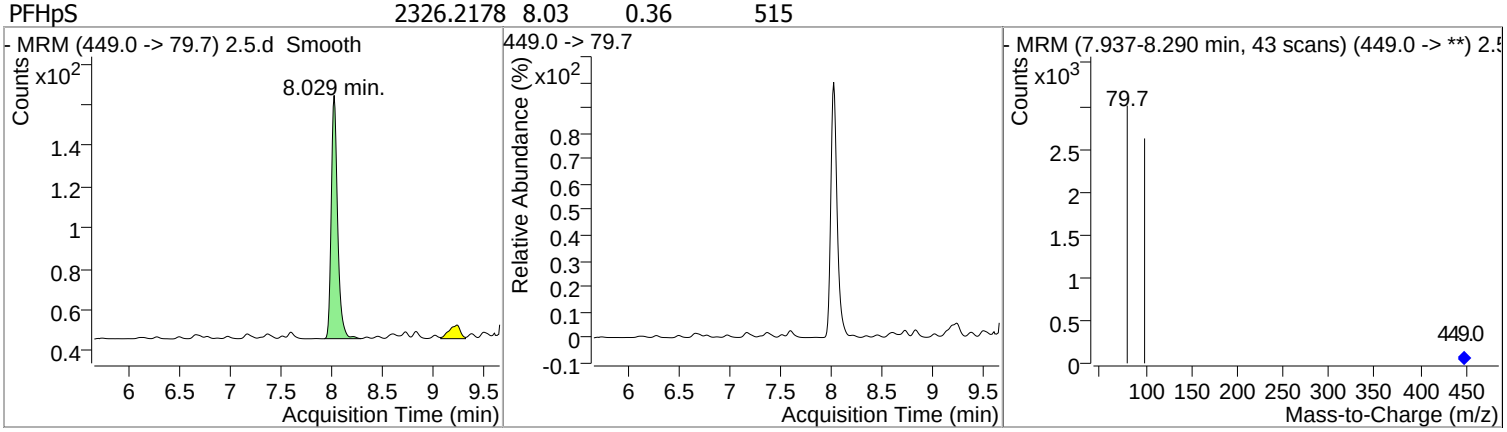
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6.2 FTS	2704.6955	8.02	0.37	211				



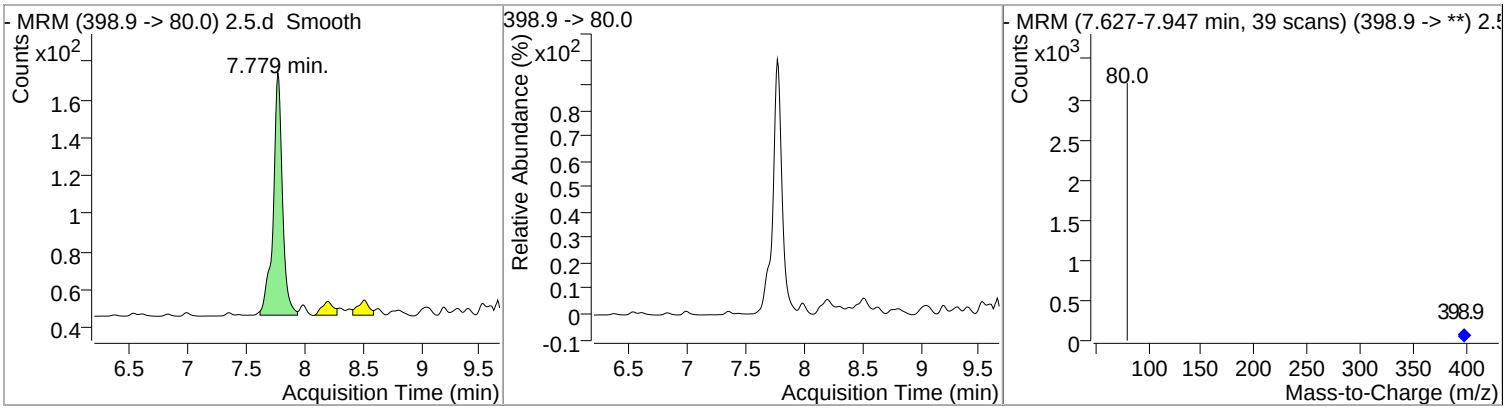
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	2961.7623	8.02	0.37	4541				



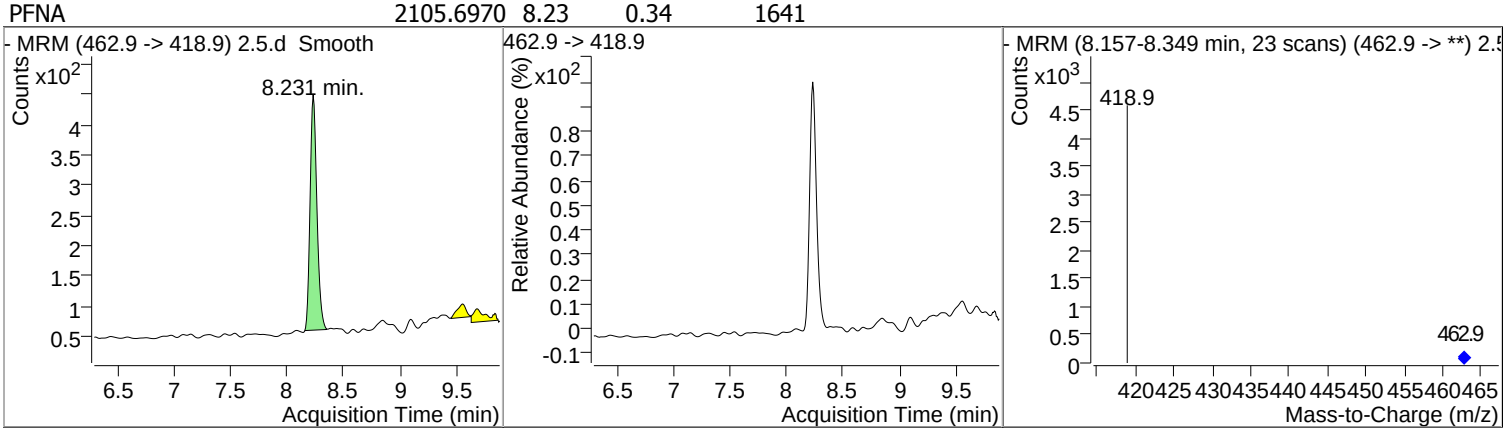
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PFHpS	2326.2178	8.03	0.36	515				



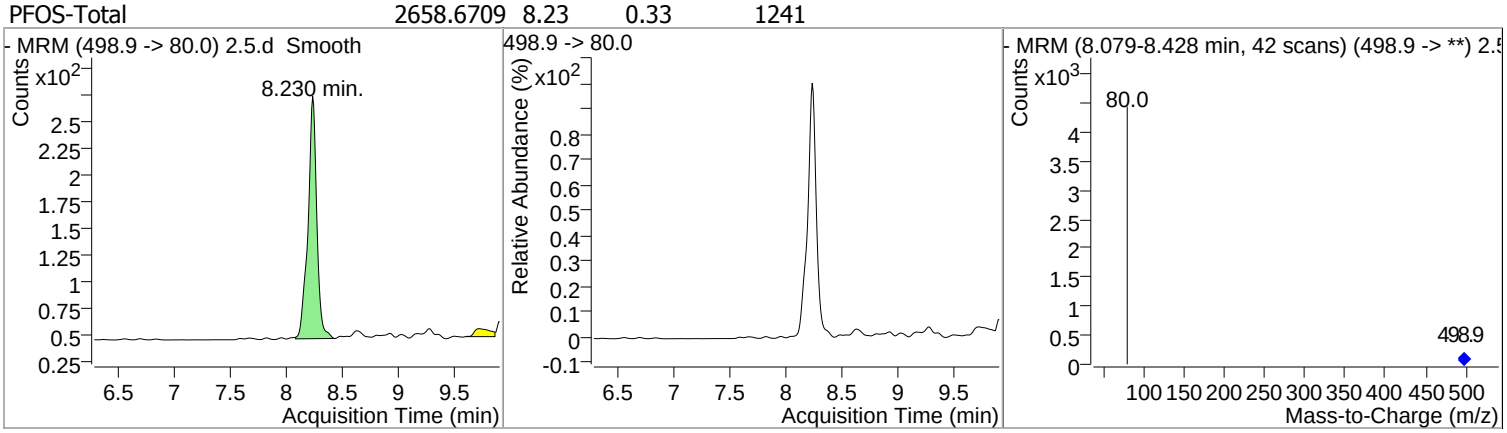
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	2243.3993	7.78	0.10	700				



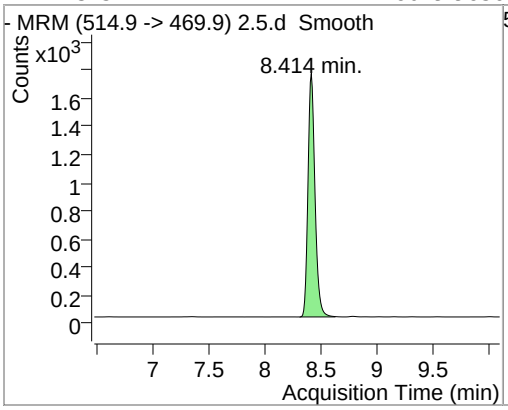
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PFNA	2105.6970	8.23	0.34	1641				

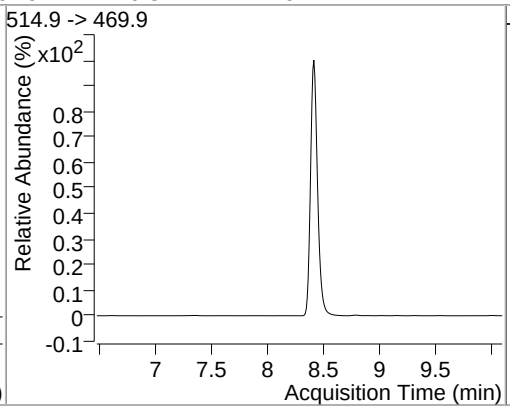


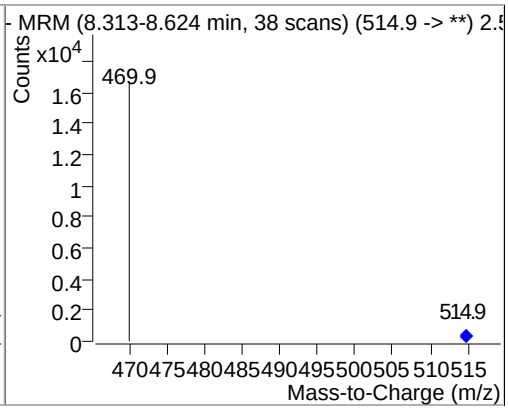
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	2658.6709	8.23	0.33	1241				



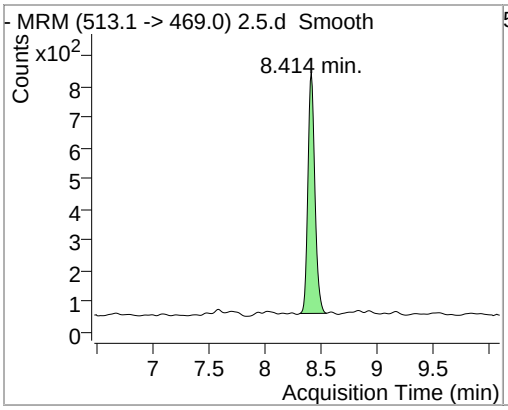
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	8629.9830	8.41	0.32	7482				

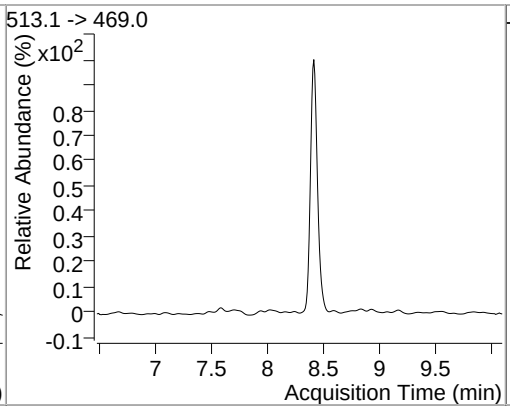


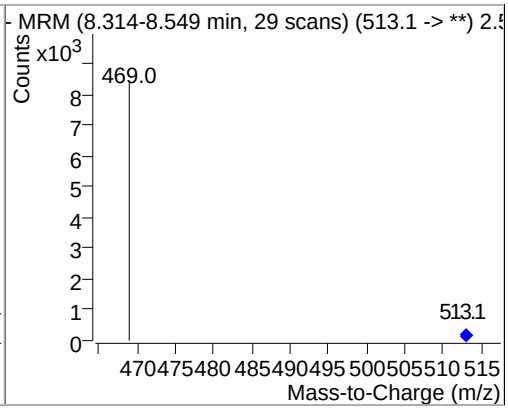




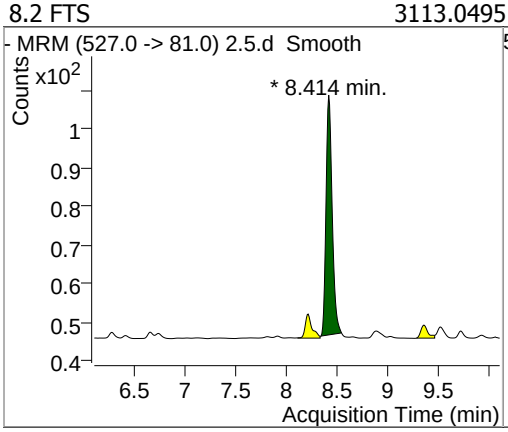
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	2566.9675	8.41	0.32	3400				

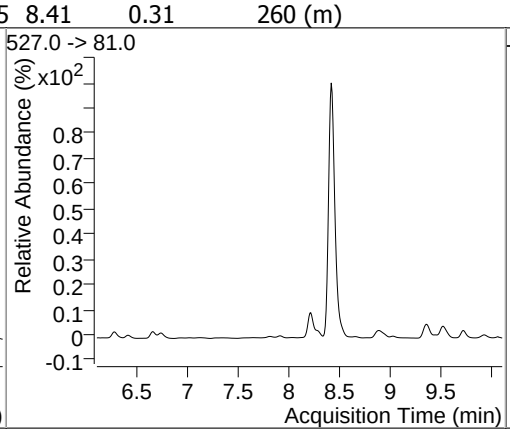


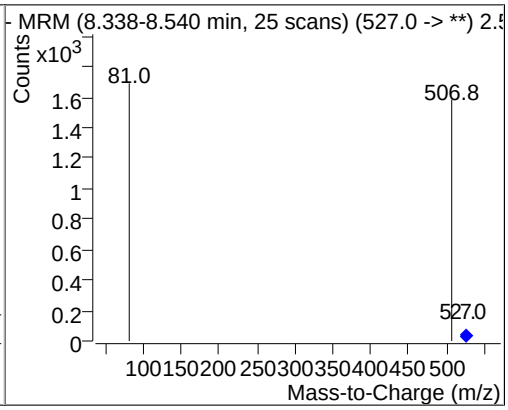




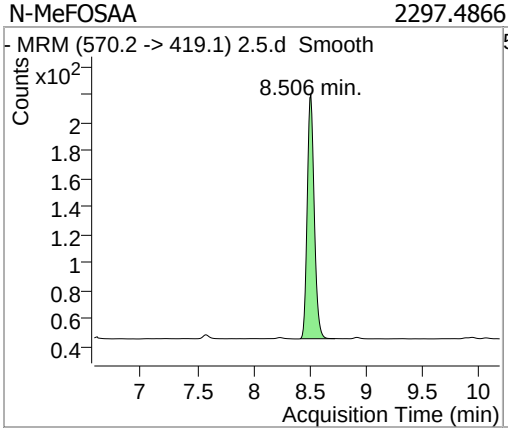
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	3113.0495	8.41	0.31	260 (m)				

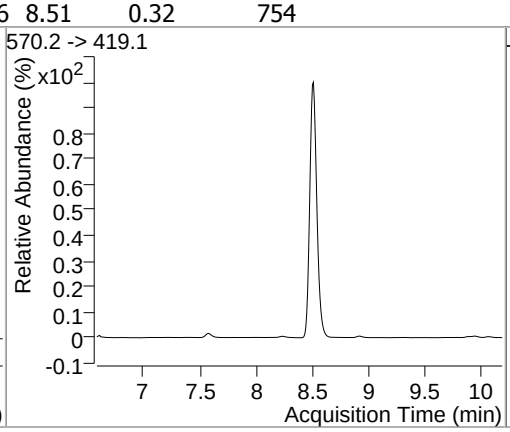


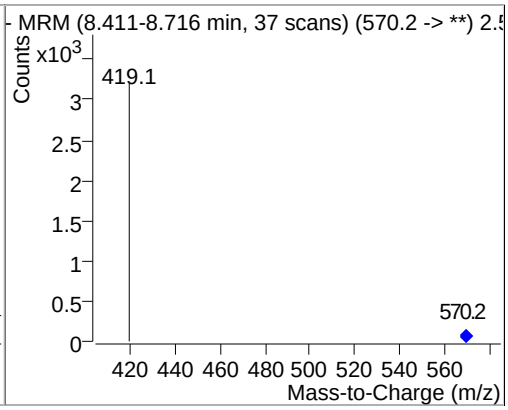




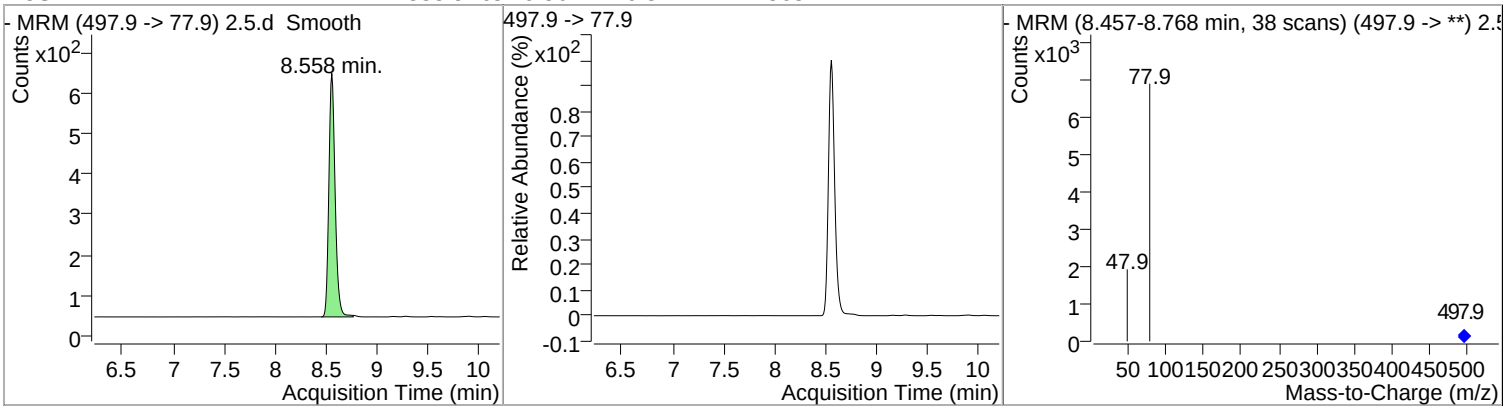
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	2297.4866	8.51	0.32	754				



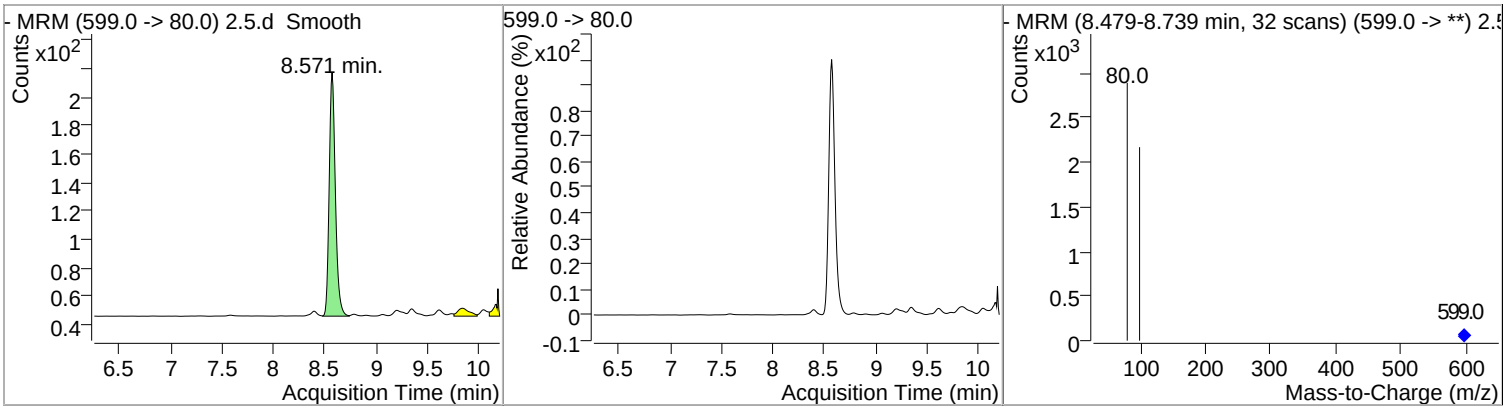




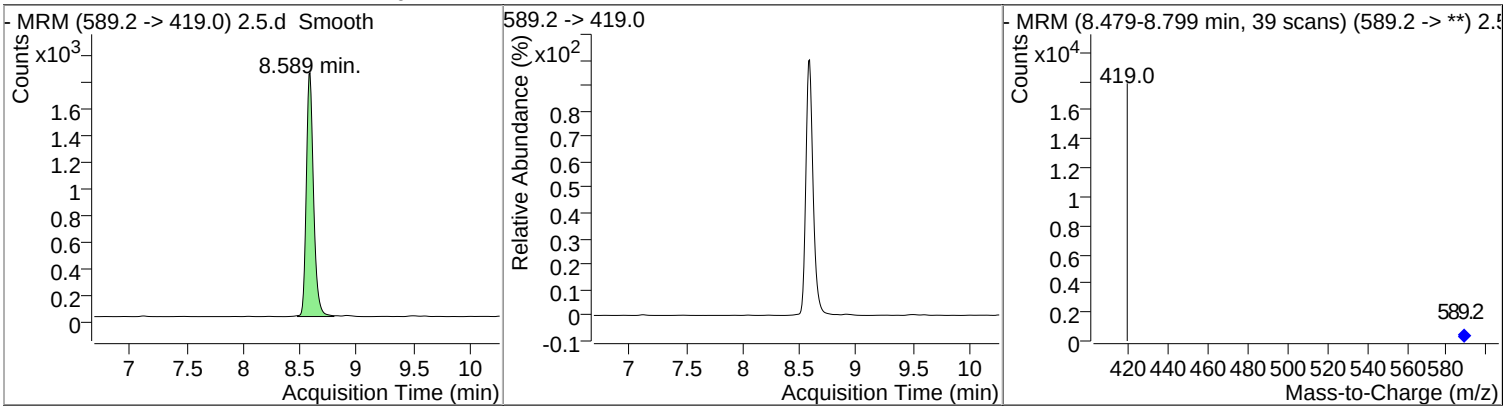
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	2533.9409	8.56	0.34	2583				



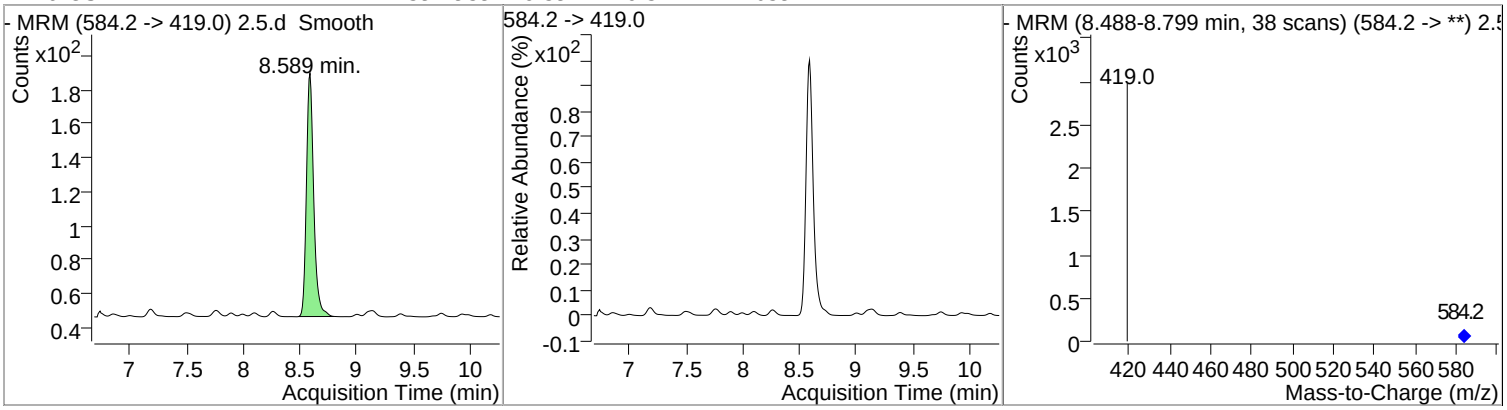
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	2579.9919	8.57	0.31	713				



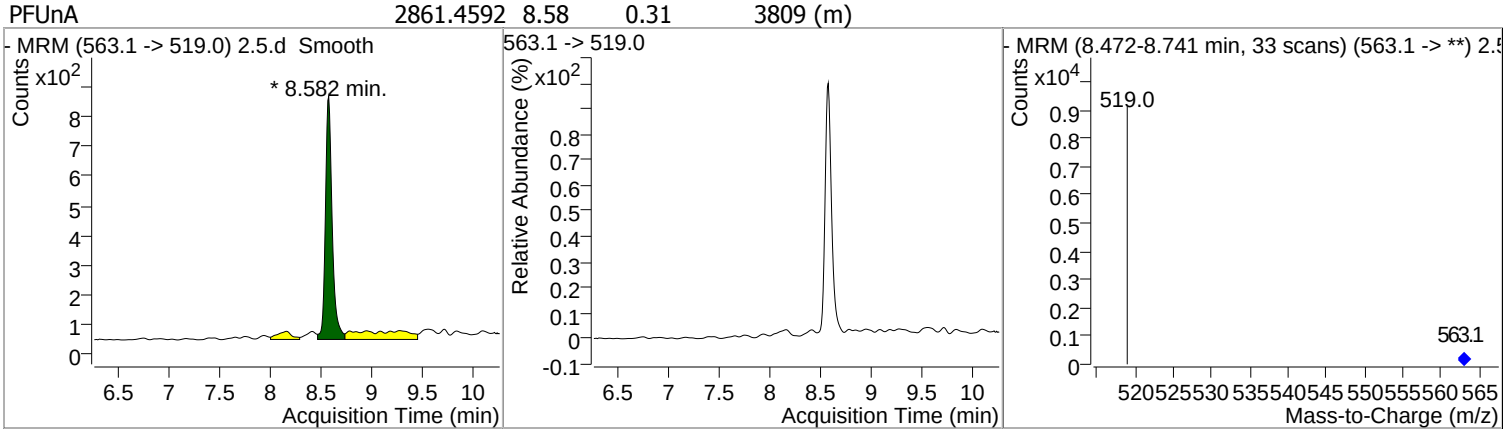
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	32084.6870	8.59	0.32	8074				



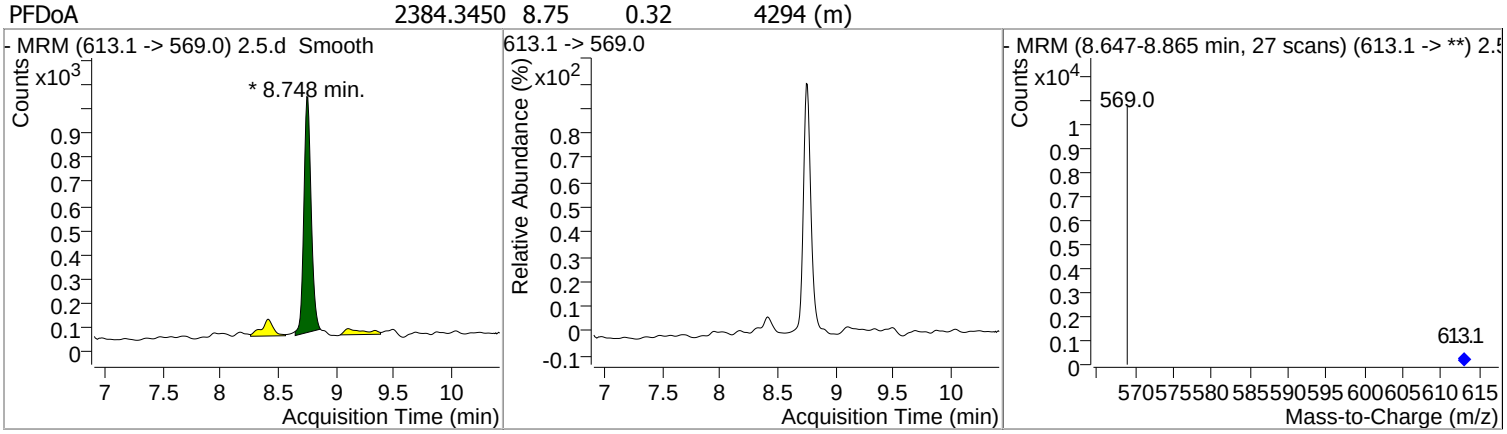
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	2391.9591	8.59	0.32	639				



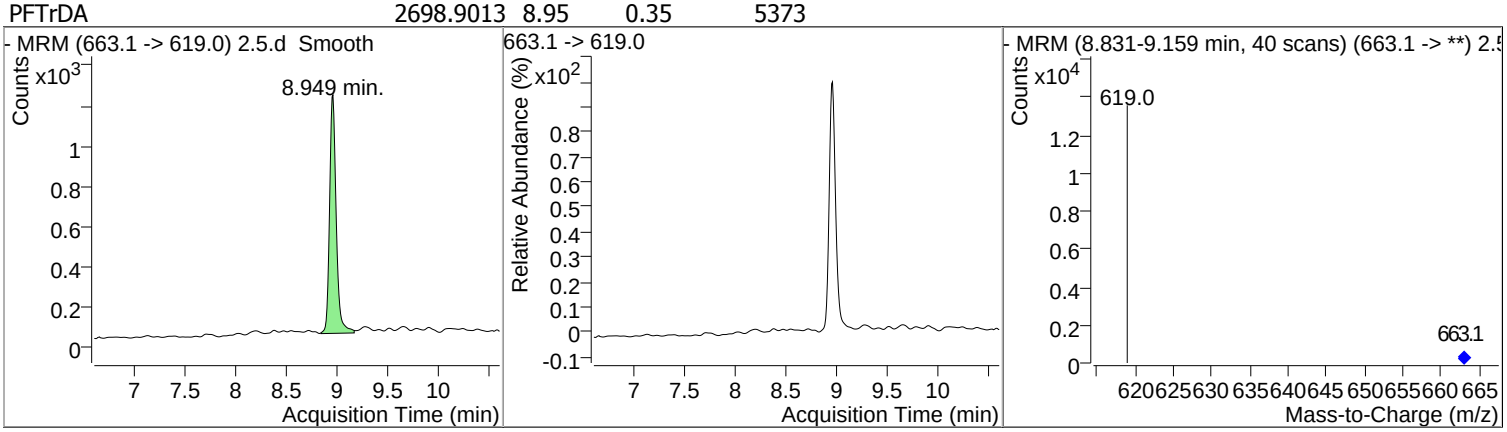
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	2861.4592	8.58	0.31	3809 (m)				



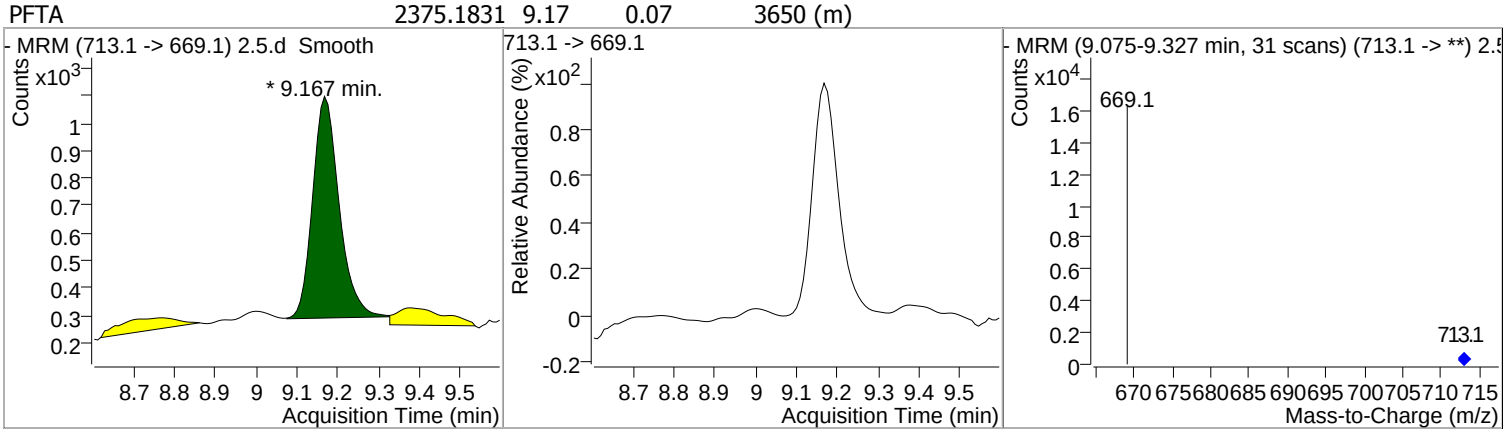
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	2384.3450	8.75	0.32	4294 (m)				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	2698.9013	8.95	0.35	5373				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	2375.1831	9.17	0.07	3650 (m)				

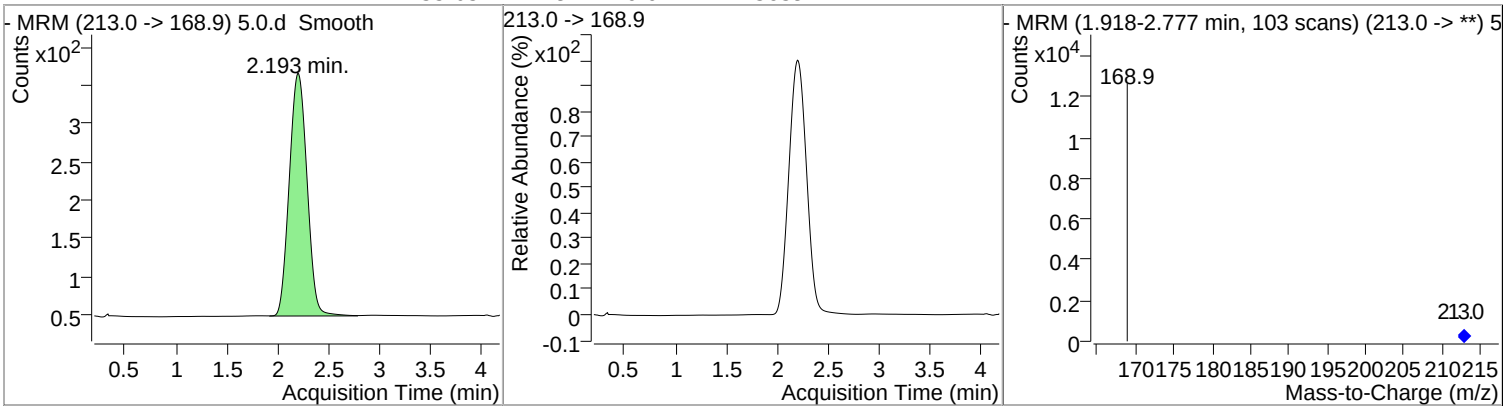


Data File	5.0.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/20/2018 10:06:09 PM
Sample Name	5.0	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

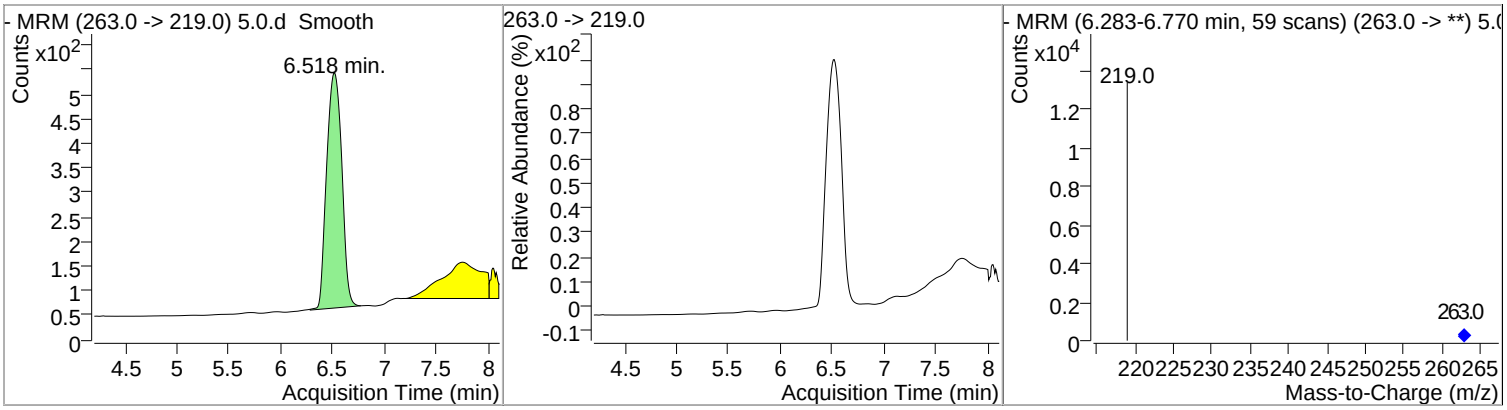
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	8.005	416.9 -> 371.9	14450	10000.0000	pg/ml		0.354
M PFOS C13	8.230	502.9 -> 80.0	11005	28700.0000	pg/ml	m	0.329
M d3-N-MeFOSAA	8.497	573.2 -> 419.0	11663	40000.0000	pg/ml		0.313
System Monitoring Compounds							
S PFHxA C13	7.350	314.9 -> 269.9	17954	10107.3609	pg/ml		0.413
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 101.07%			
S PFDA C13	8.406	514.9 -> 469.9	9191	9815.7198	pg/ml		0.313
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 98.16%			
S d5-N-MeFOSAA	8.580	589.2 -> 419.0	11031	43236.2459	pg/ml		0.313
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 108.09%			
Target Compounds							QValue
T PFBA	2.193	213.0 -> 168.9	3839	4735.6511	pg/ml		100
T PFPeA	6.518	263.0 -> 219.0	4873	4783.0236	pg/ml		100
T PFBS	6.880	298.9 -> 80.0	1379	3872.5090	pg/ml		100
T PFHxA	7.350	312.9 -> 268.9	7860	4814.8302	pg/ml		100
T PFHpA	7.737	362.9 -> 319.0	8128	4642.1679	pg/ml		100
T 6.2 FTS	7.996	427.0 -> 406.8	497	6134.8851	pg/ml	m	100
T PFOA-Total	8.005	412.9 -> 368.9	8275	4997.7578	pg/ml		100
T PFHpS	8.012	449.0 -> 79.7	1135	4942.9304	pg/ml		100
T PFHxS-Total	7.762	398.9 -> 80.0	1465	4530.4141	pg/ml		100
T PFNA	8.223	462.9 -> 418.9	3681	4374.7852	pg/ml		100
T PFOS-Total	8.222	498.9 -> 80.0	2451	5065.5888	pg/ml		100
T PFDA	8.406	513.1 -> 469.0	6948	4857.3291	pg/ml		100
T 8.2 FTS	8.414	527.0 -> 81.0	445	5136.3781	pg/ml		100
T N-MeFOSAA	8.497	570.2 -> 419.1	1568	4711.6494	pg/ml		100
T FOSA	8.550	497.9 -> 77.9	5421	5246.4737	pg/ml		100
T PFDS	8.563	599.0 -> 80.0	1469	5127.7513	pg/ml		100
T N-EtFOSAA	8.581	584.2 -> 419.0	1423	5254.2560	pg/ml		100
T PFUnA	8.573	563.1 -> 519.0	7152	4974.1468	pg/ml		100
T PFDoA	8.748	613.1 -> 569.0	8883	4566.7946	pg/ml	m	100
T PFTrDA	8.932	663.1 -> 619.0	9925	4615.4952	pg/ml		100
T PFTA	9.159	713.1 -> 669.1	8072	4864.1882	pg/ml	m	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

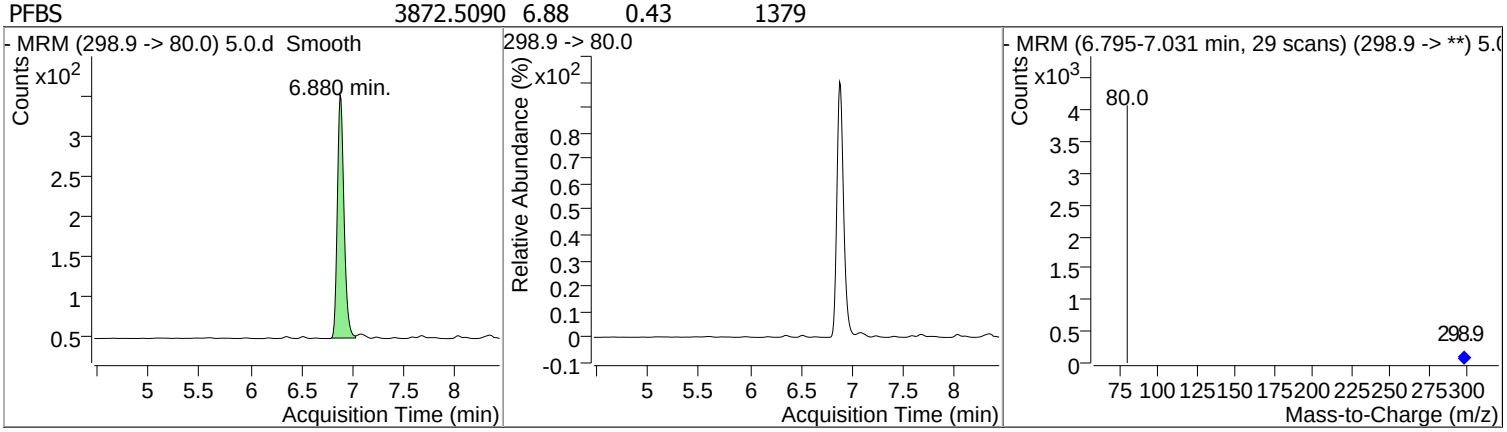
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	4735.6511	2.19	0.02	3839				



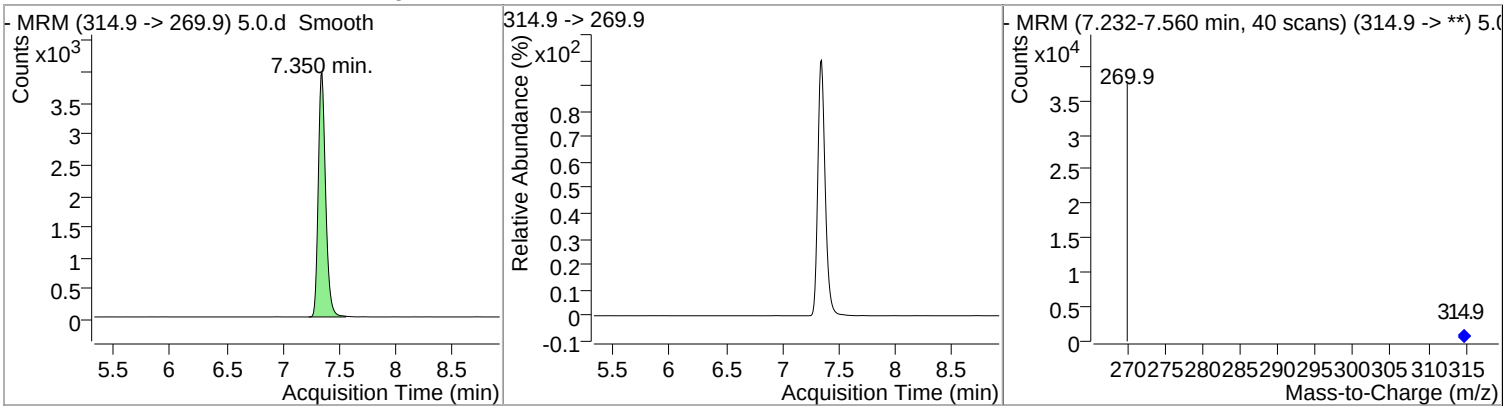
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	4783.0236	6.52	0.41	4873				



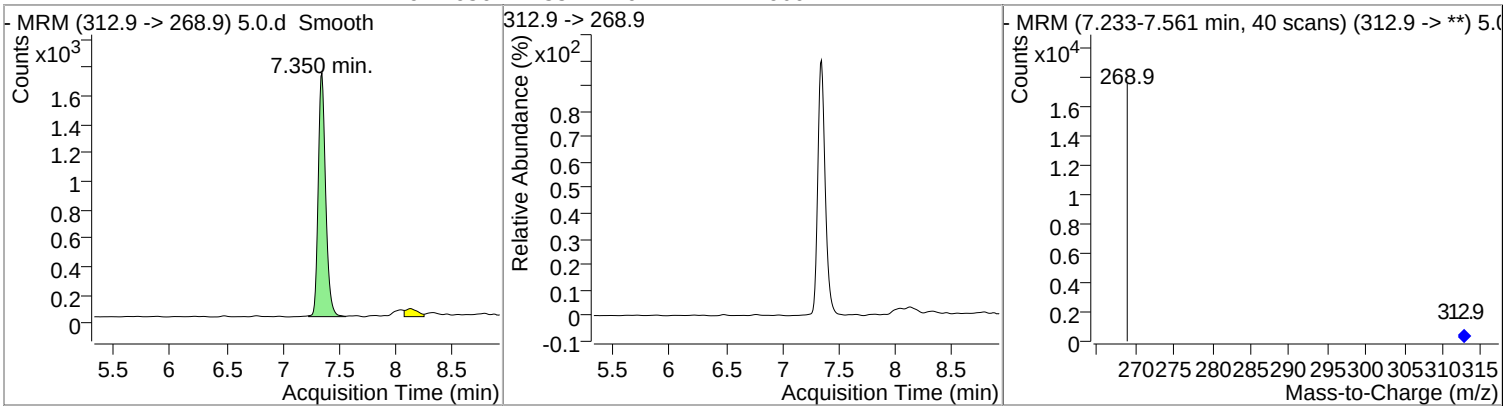
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	3872.5090	6.88	0.43	1379				



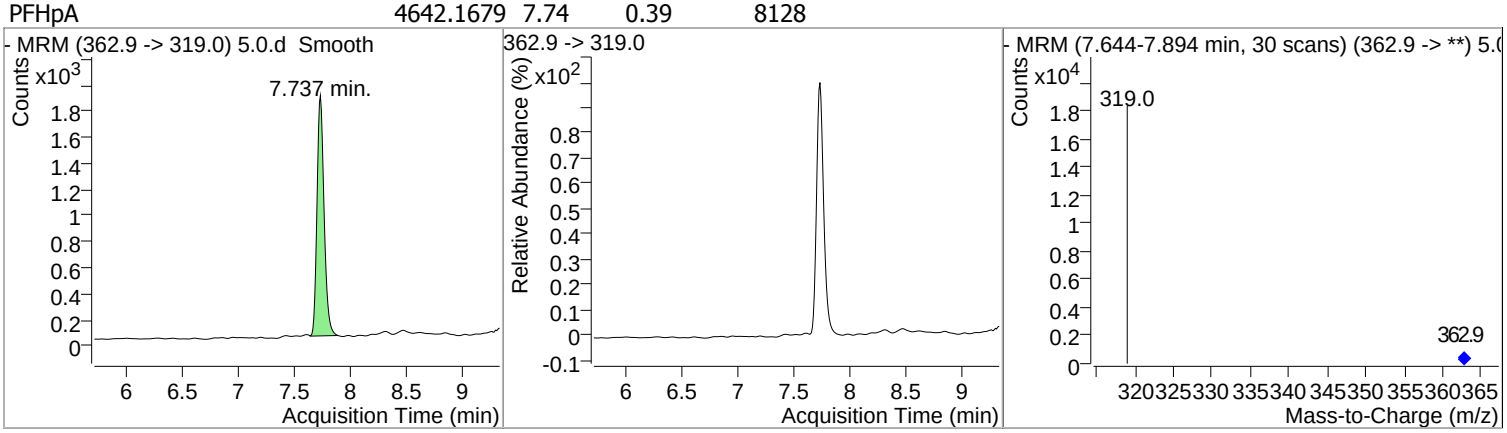
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	10107.3609	7.35	0.41	17954				



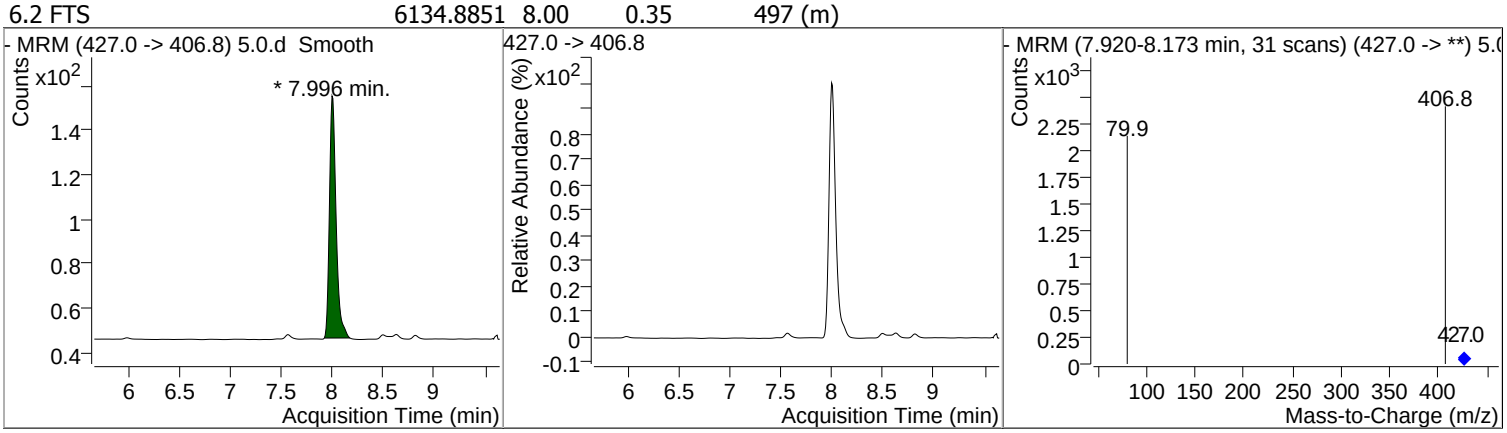
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	4814.8302	7.35	0.41	7860				



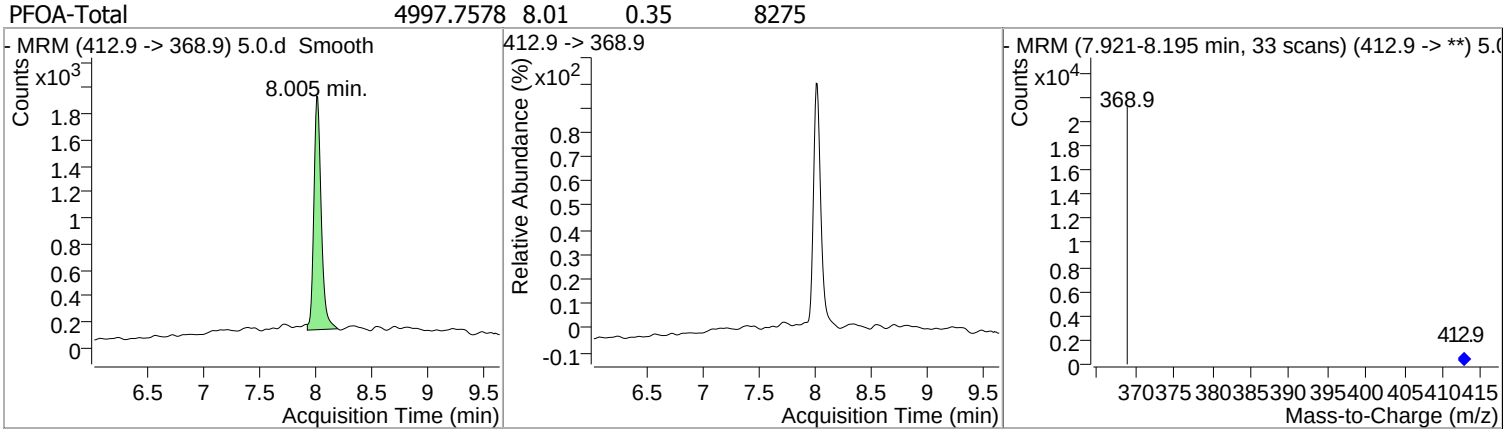
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	4642.1679	7.74	0.39	8128				



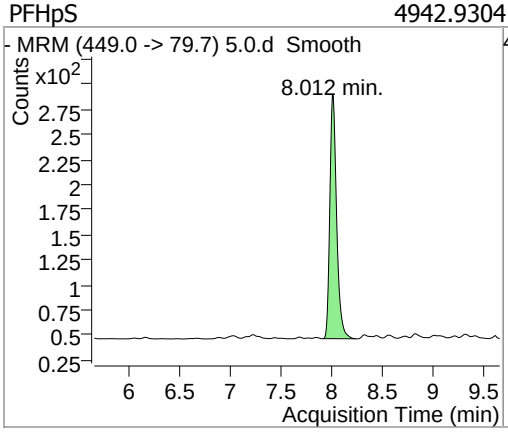
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	6134.8851	8.00	0.35	497 (m)				

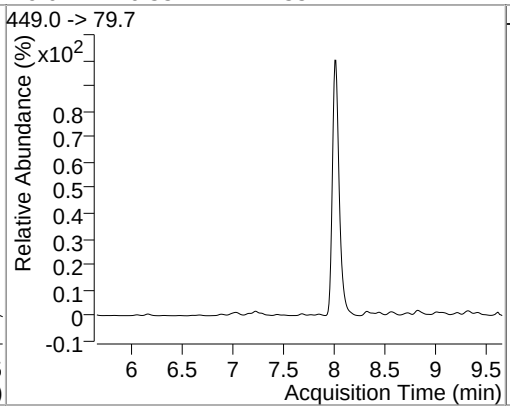


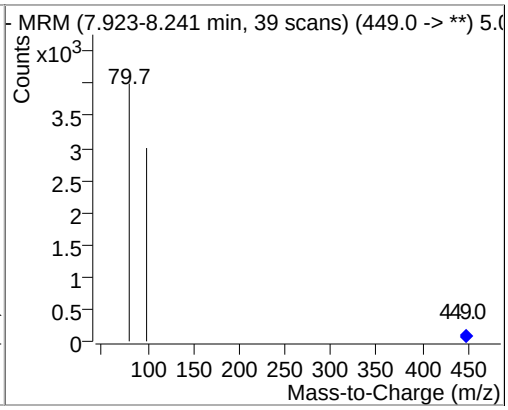
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	4997.7578	8.01	0.35	8275				



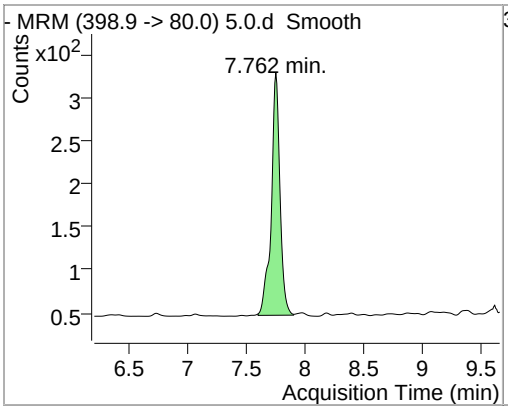
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	4942.9304	8.01	0.35	1135				

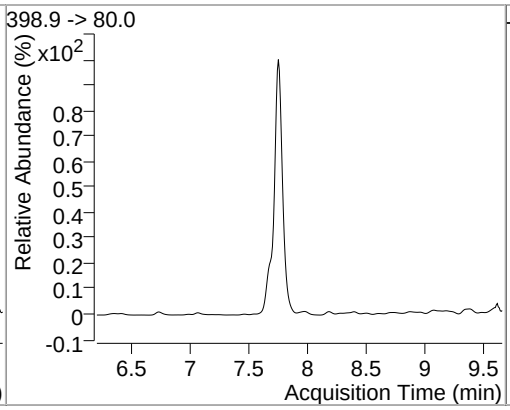


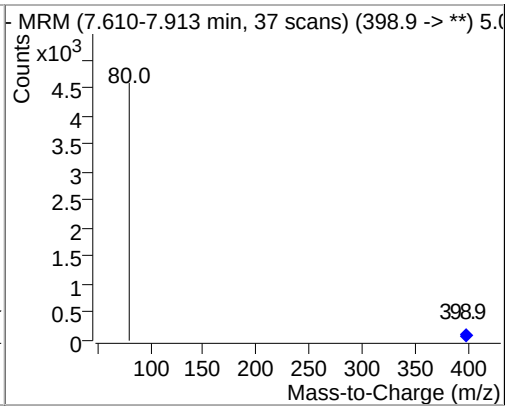




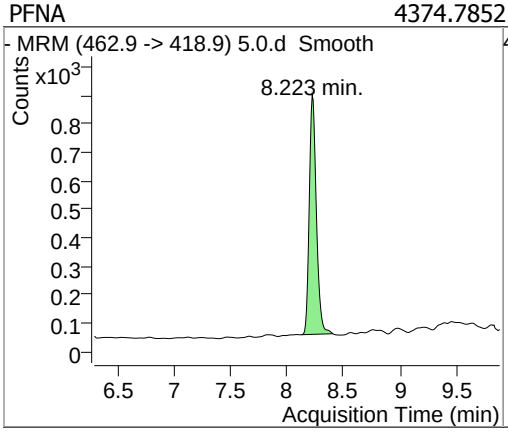
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	4530.4141	7.76	0.08	1465				

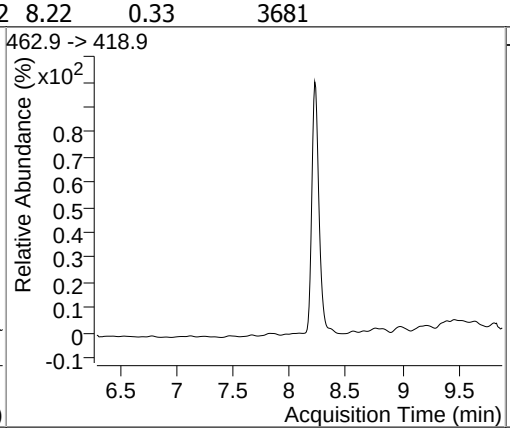


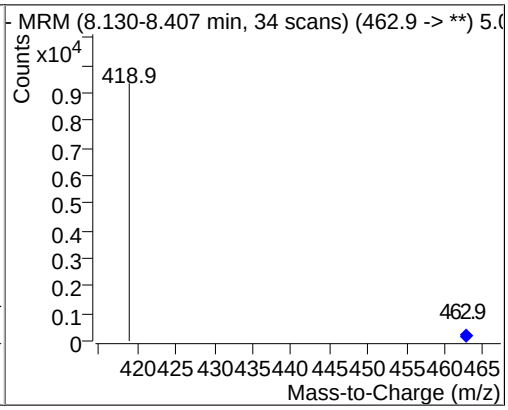




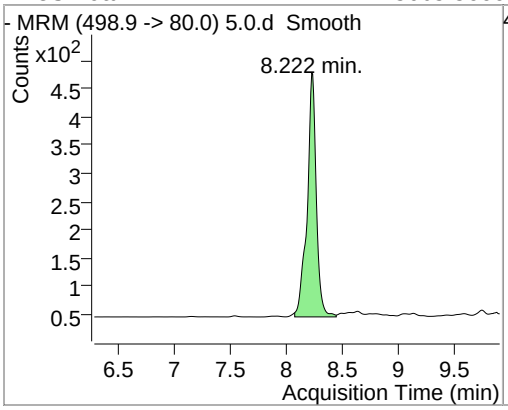
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	4374.7852	8.22	0.33	3681				

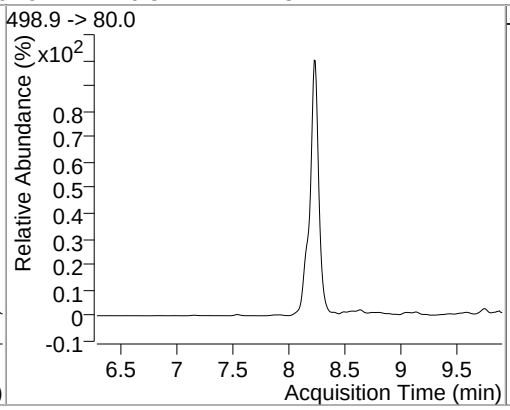


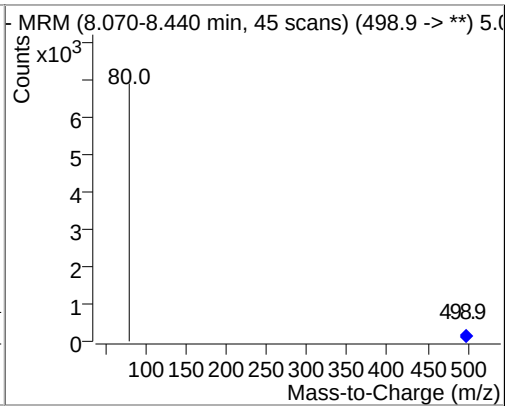




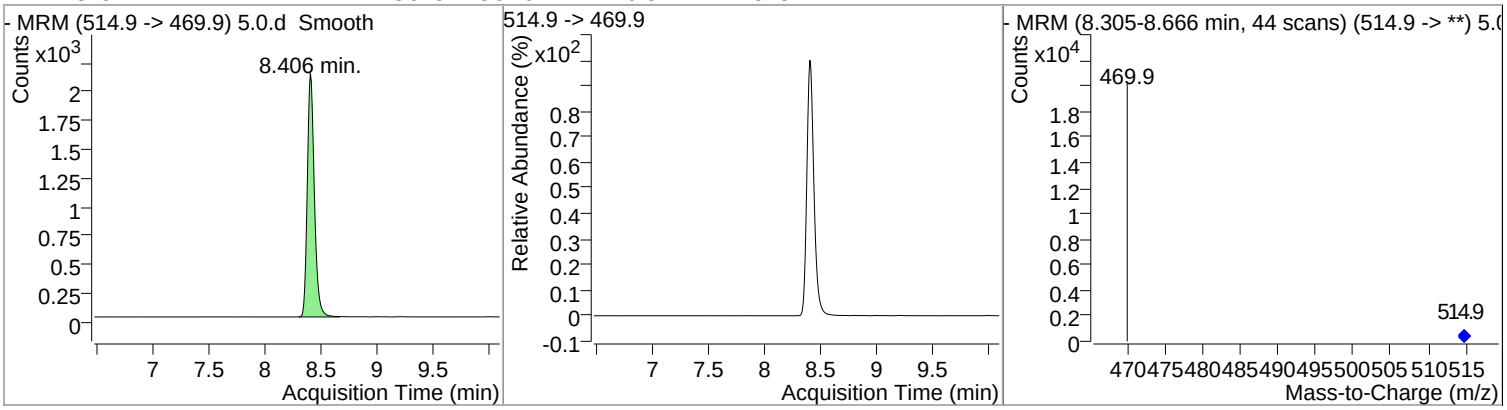
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	5065.5888	8.22	0.32	2451				



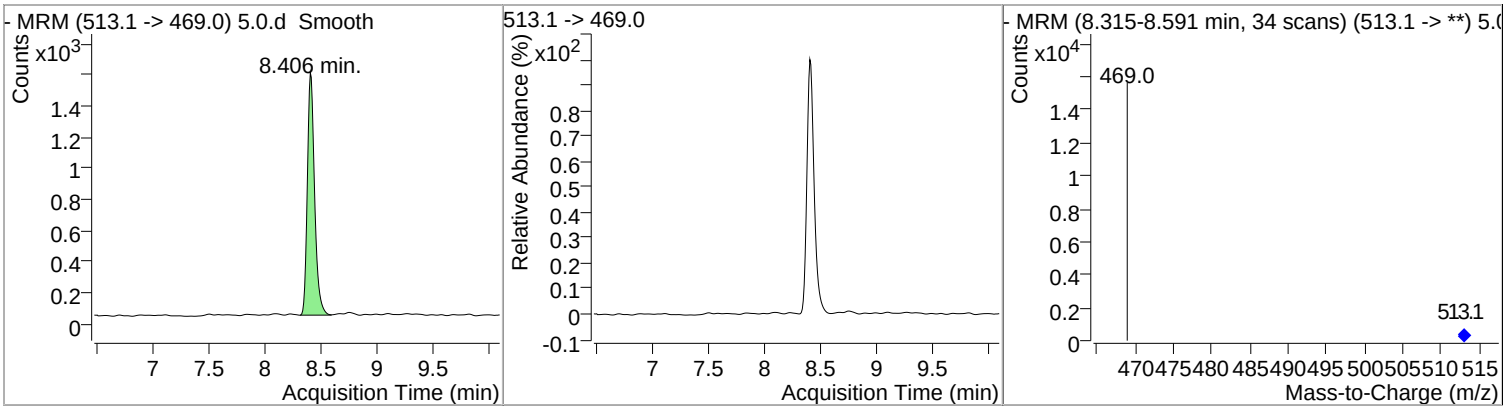




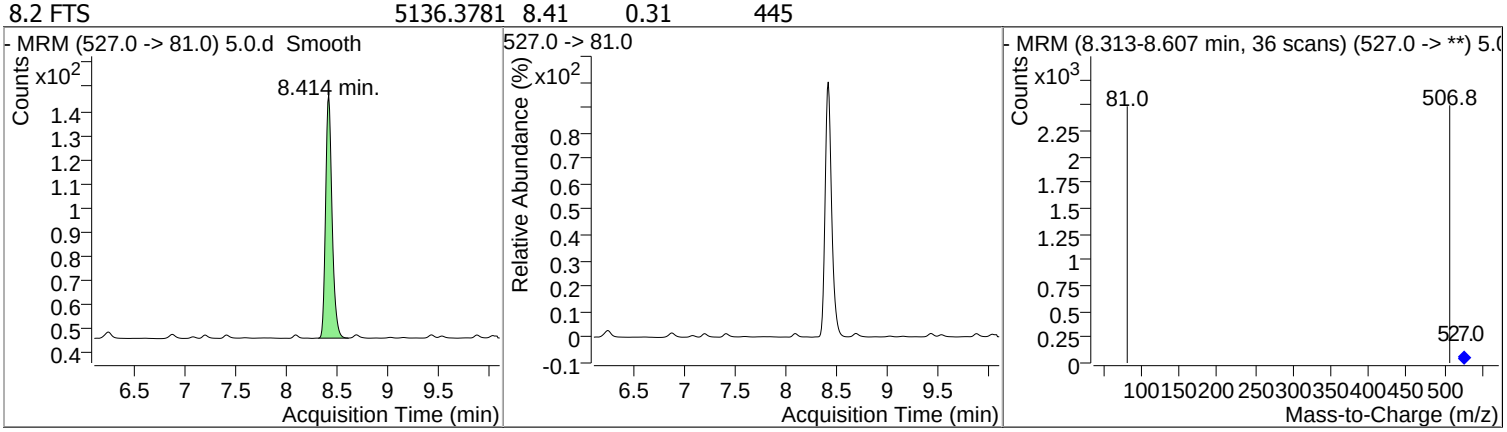
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	9815.7198	8.41	0.31	9191				



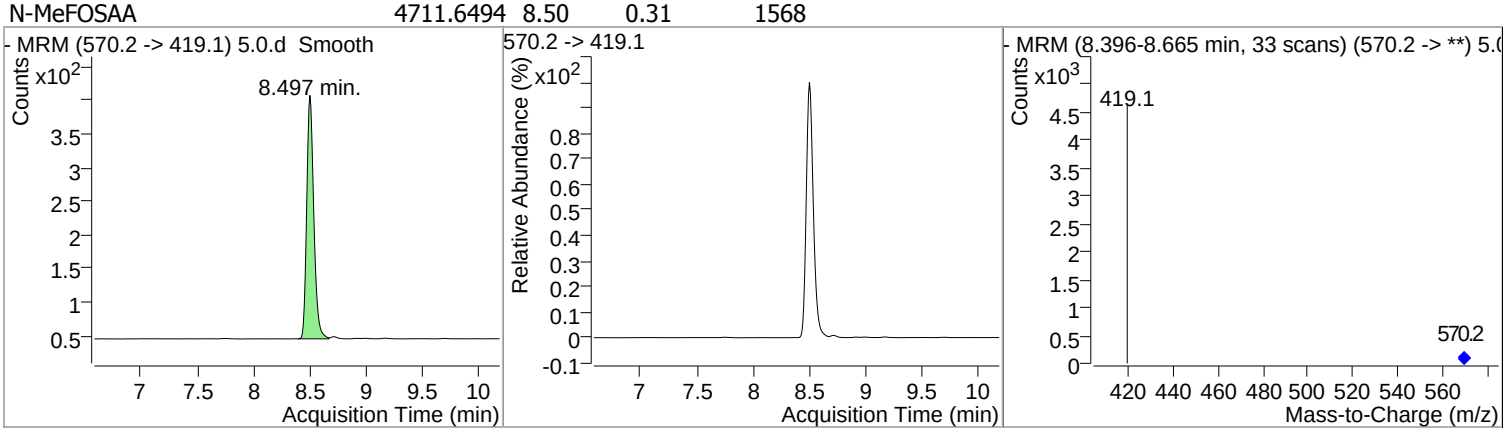
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	4857.3291	8.41	0.31	6948				



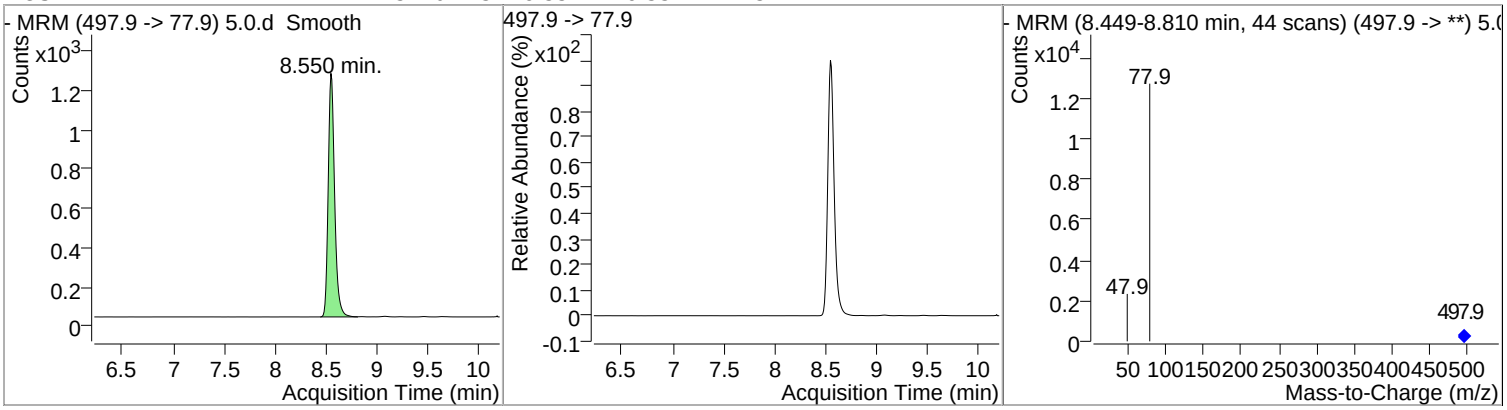
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	5136.3781	8.41	0.31	445				



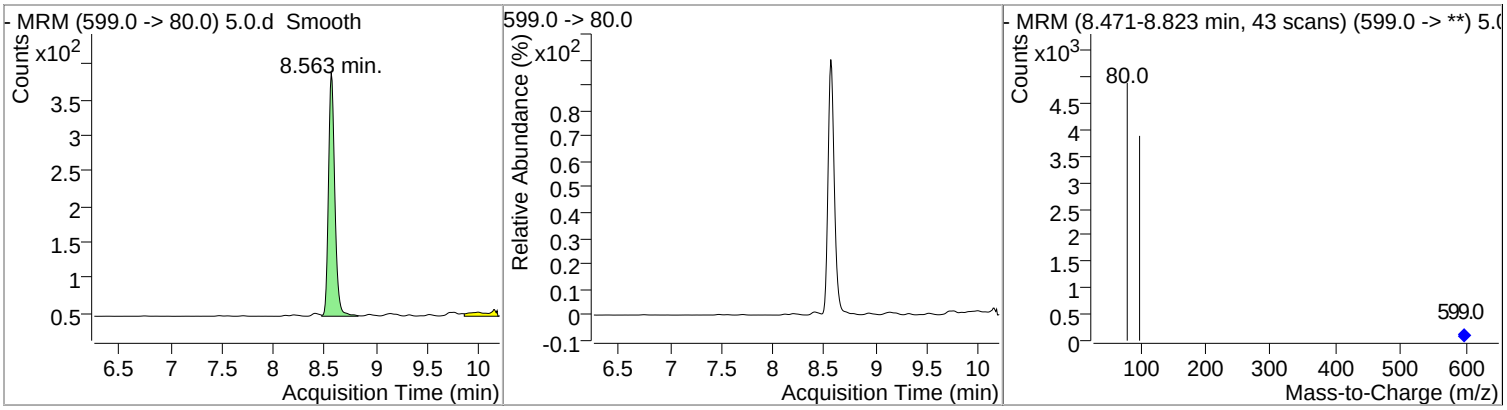
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	4711.6494	8.50	0.31	1568				



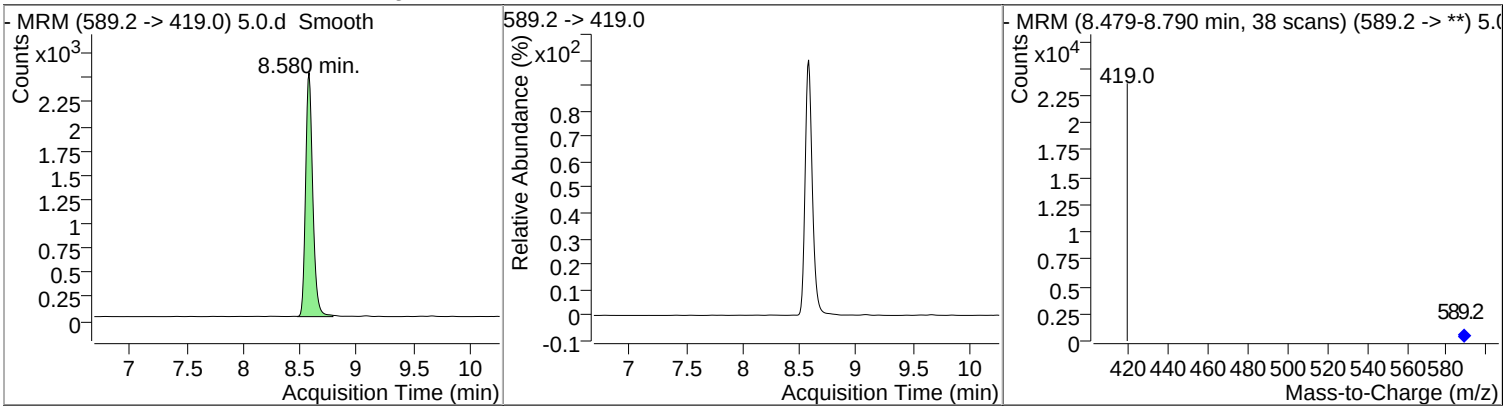
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	5246.4737	8.55	0.33	5421				



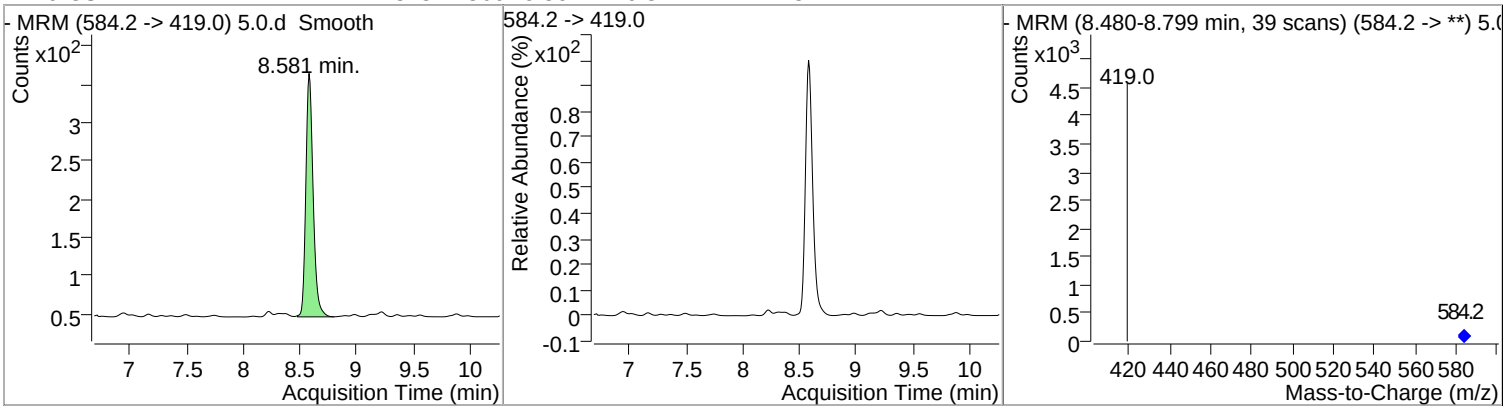
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	5127.7513	8.56	0.30	1469				



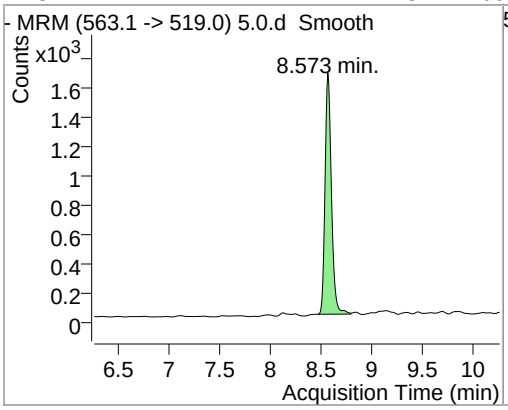
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	43236.2459	8.58	0.31	11031				

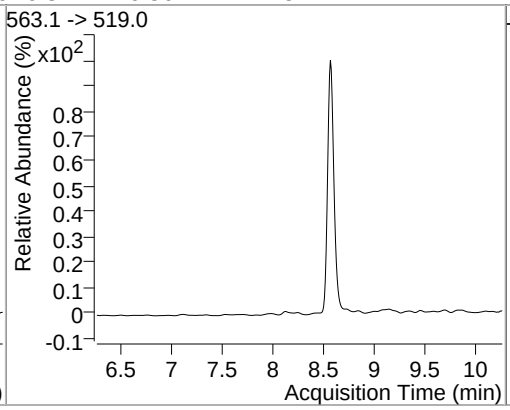


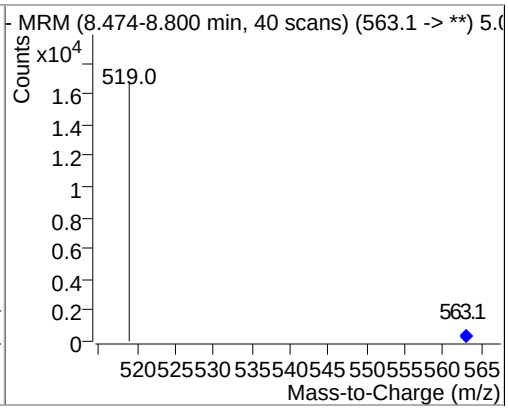
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	5254.2560	8.58	0.31	1423				



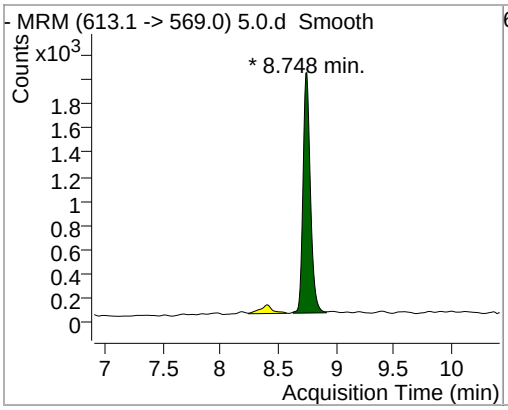
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	4974.1468	8.57	0.30	7152				

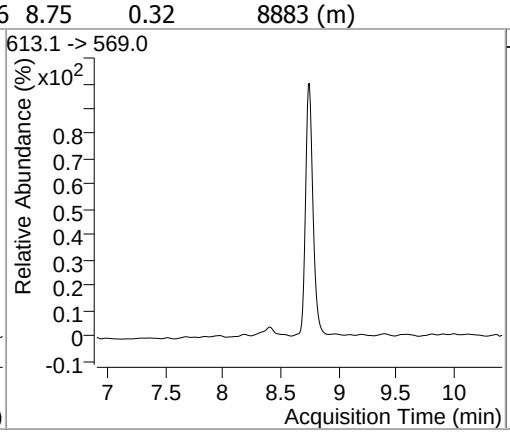


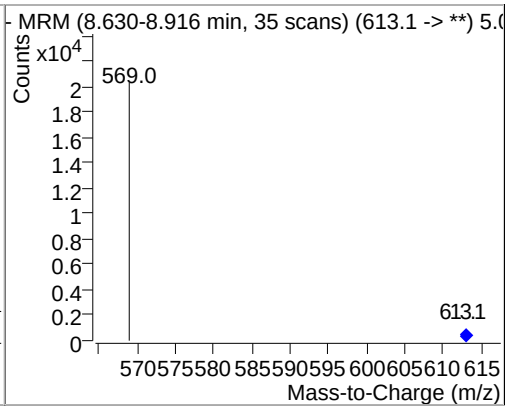




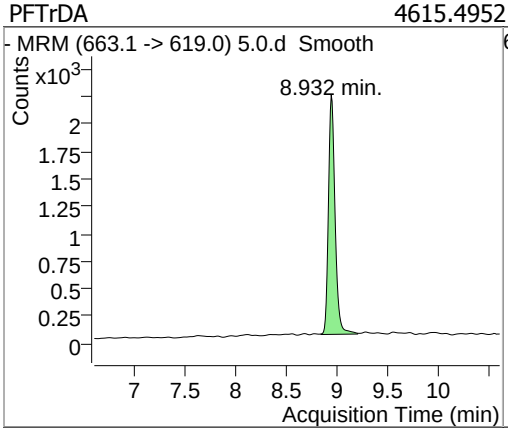
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	4566.7946	8.75	0.32	8883 (m)				

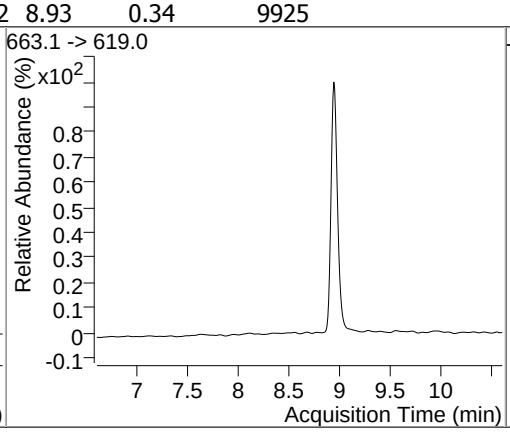


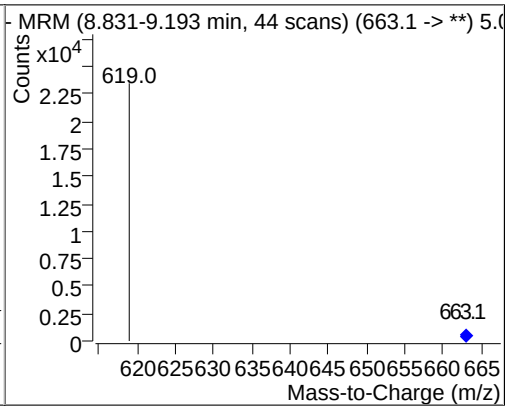




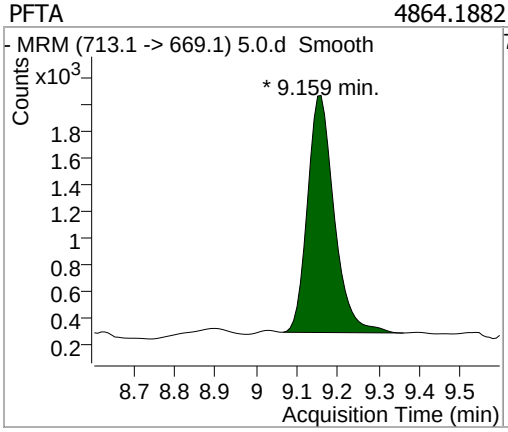
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	4615.4952	8.93	0.34	9925				

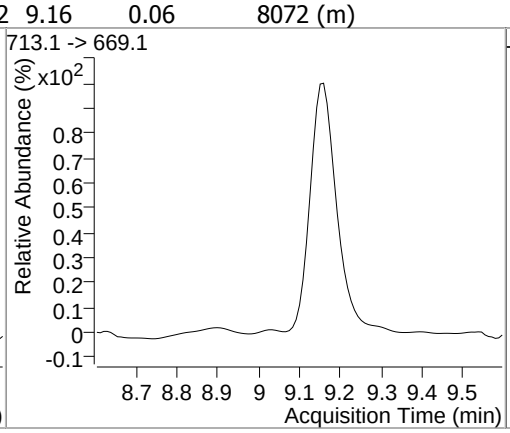


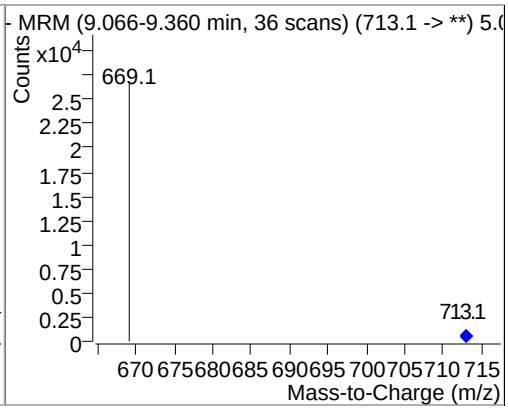




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	4864.1882	9.16	0.06	8072 (m)				





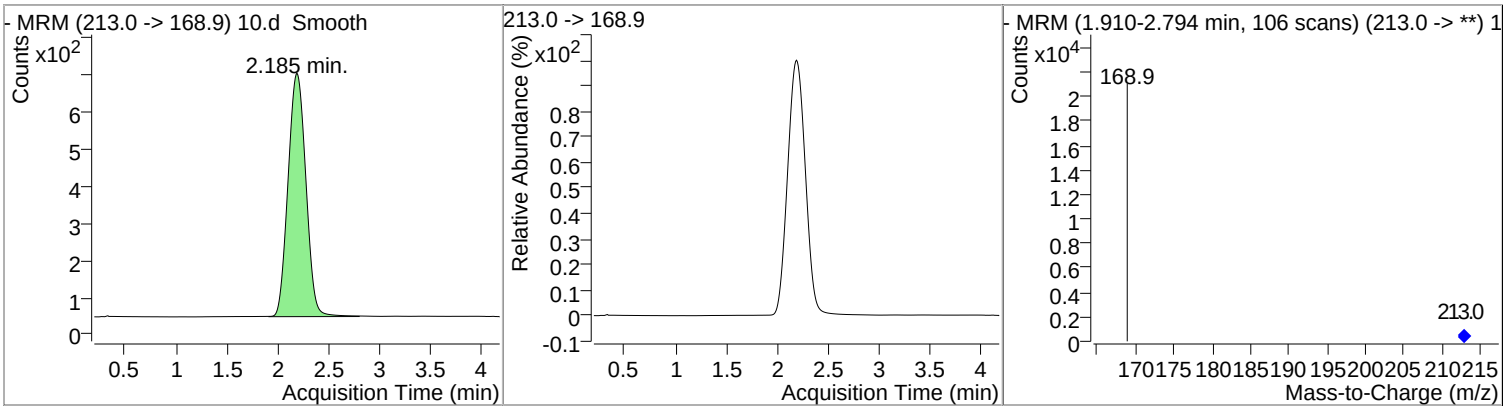


Data File	10.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/20/2018 10:18:55 PM
Sample Name	10	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

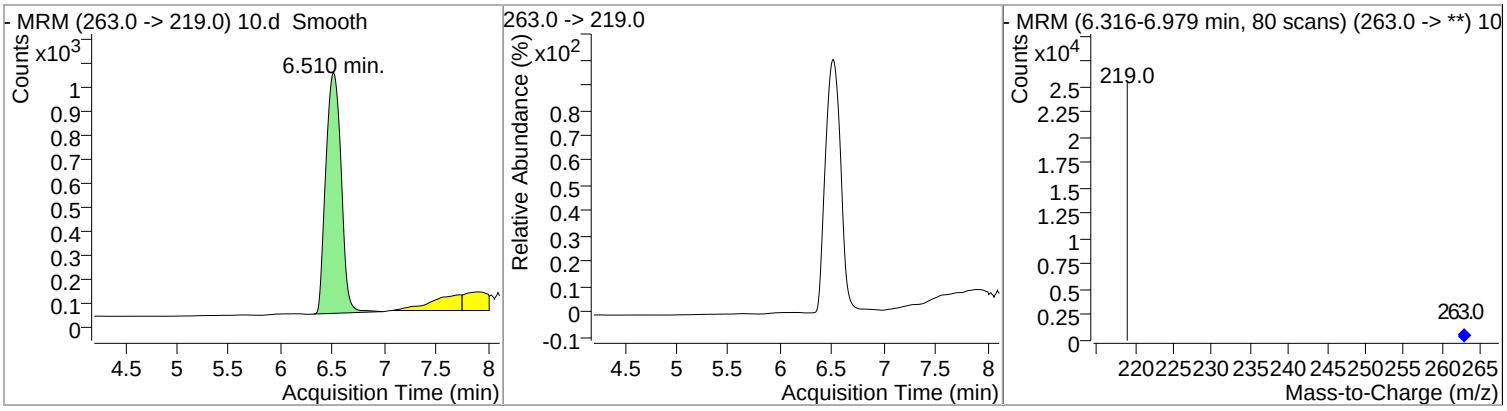
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	8.005	416.9 -> 371.9	13451	10000.0000	pg/ml		0.354
M PFOS C13	8.221	502.9 -> 80.0	11342	28700.0000	pg/ml		0.321
M d3-N-MeFOSAA	8.489	573.2 -> 419.0	11909	40000.0000	pg/ml		0.304
System Monitoring Compounds							
S PFHxA C13	7.350	314.9 -> 269.9	23664	14310.6240	pg/ml		0.413
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 143.11%		*	
S PFDA C13	8.406	514.9 -> 469.9	12662	14527.6889	pg/ml		0.313
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 145.28%		*	
S d5-N-MeFOSAA	8.572	589.2 -> 419.0	15795	60630.5370	pg/ml		0.304
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 151.58%		*	
Target Compounds							QValue
T PFBA	2.185	213.0 -> 168.9	7954	10540.4767	pg/ml		100
T PFPeA	6.510	263.0 -> 219.0	10313	10873.0545	pg/ml		100
T PFBS	6.880	298.9 -> 80.0	3326	9061.9664	pg/ml		100
T PFHxA	7.350	312.9 -> 268.9	16074	10578.1298	pg/ml		100
T PFHpA	7.737	362.9 -> 319.0	17043	10456.0374	pg/ml		100
T 6.2 FTS	8.005	427.0 -> 406.8	807	9671.3827	pg/ml		100
T PFOA-Total	8.005	412.9 -> 368.9	15790	10244.4642	pg/ml		100
T PFHpS	8.021	449.0 -> 79.7	1999	8450.4939	pg/ml		100
T PFHxS-Total	7.762	398.9 -> 80.0	3139	9420.1585	pg/ml		100
T PFNA	8.223	462.9 -> 418.9	7798	9954.3497	pg/ml		100
T PFOS-Total	8.222	498.9 -> 80.0	4808	9641.1778	pg/ml		100
T PFDA	8.406	513.1 -> 469.0	14415	10825.8146	pg/ml		100
T 8.2 FTS	8.414	527.0 -> 81.0	994	11134.8942	pg/ml		100
T N-MeFOSAA	8.489	570.2 -> 419.1	3524	10368.4550	pg/ml		100
T FOSA	8.550	497.9 -> 77.9	11255	10667.7827	pg/ml		100
T PFDS	8.563	599.0 -> 80.0	3039	10290.5888	pg/ml		100
T N-EtFOSAA	8.581	584.2 -> 419.0	3218	11635.5315	pg/ml		100
T PFUnA	8.573	563.1 -> 519.0	13957	10428.2155	pg/ml		100
T PFDoA	8.739	613.1 -> 569.0	18057	9972.1573	pg/ml		100
T PFTrDA	8.924	663.1 -> 619.0	20309	10146.2362	pg/ml		100
T PFTA	9.142	713.1 -> 669.1	15515	10043.2813	pg/ml	m	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

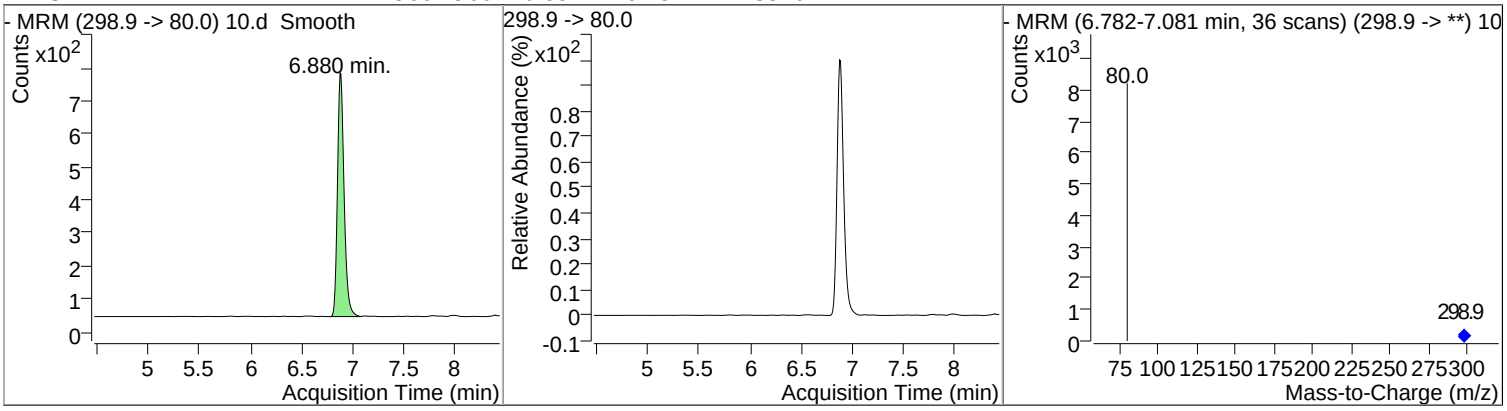
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	10540.4767	2.19	0.01	7954				



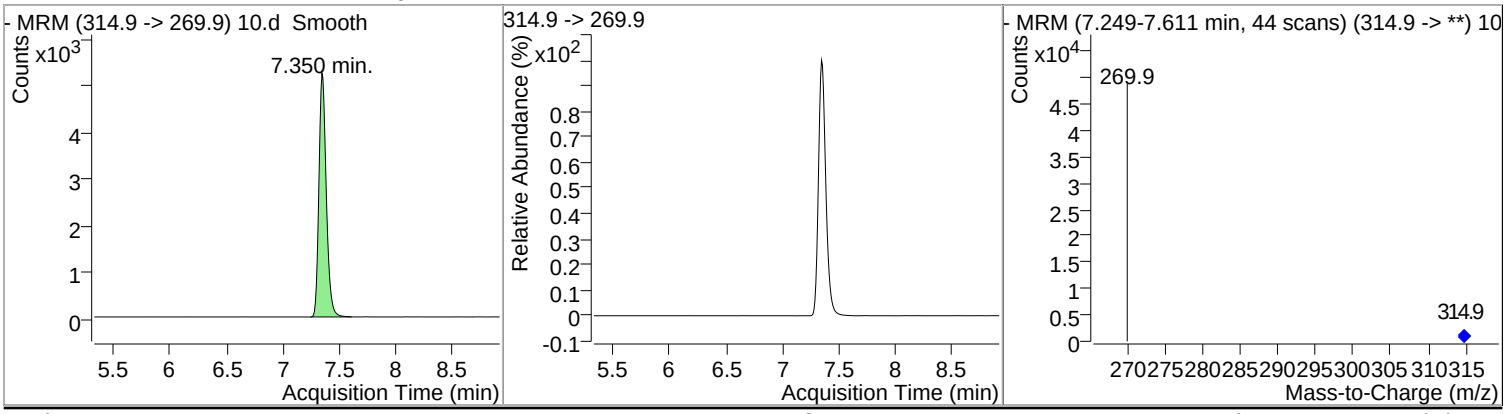
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	10873.0545	6.51	0.40	10313				



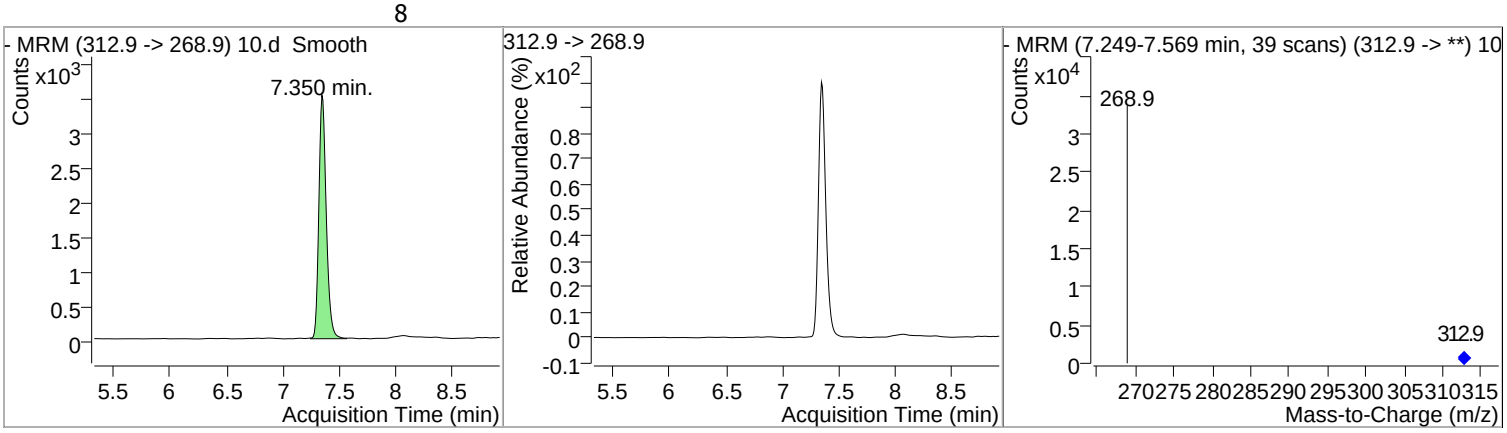
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	9061.9664	6.88	0.43	3326				



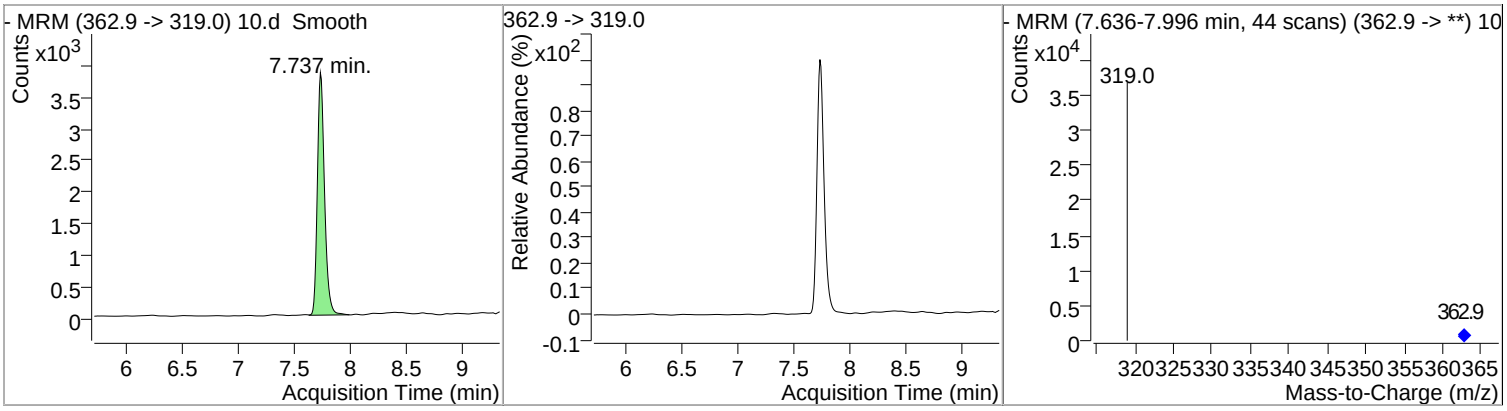
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	14310.6240	7.35	0.41	23664				



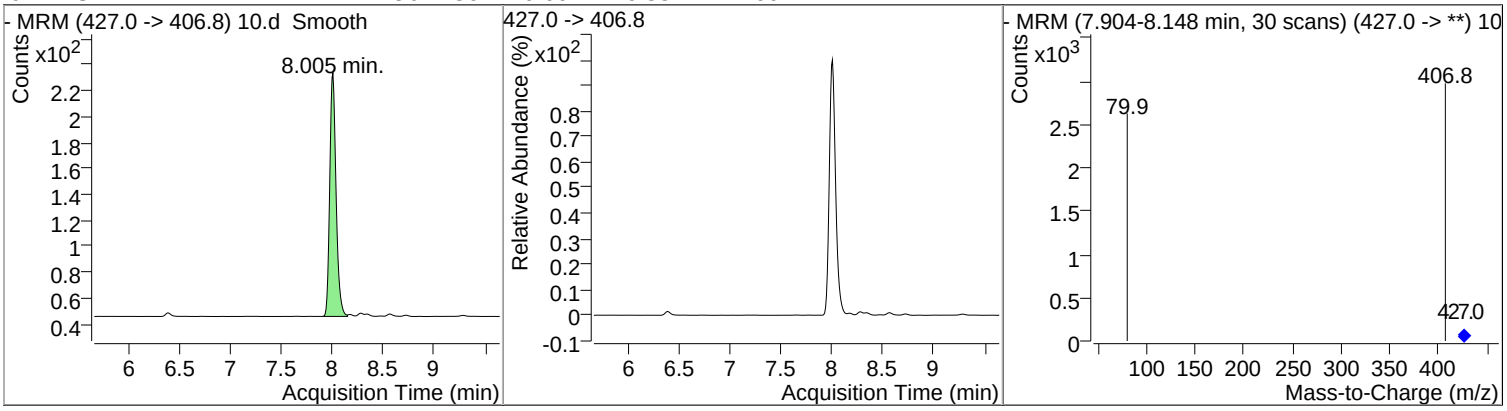
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	10578.1298	7.35	0.41	16074				



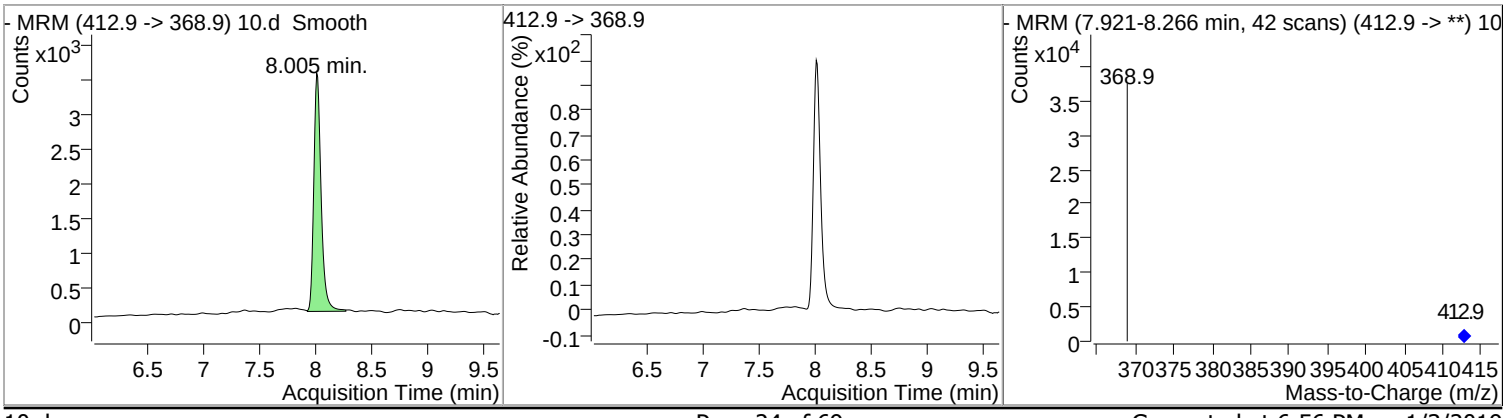
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	10456.0374	7.74	0.39	17043				



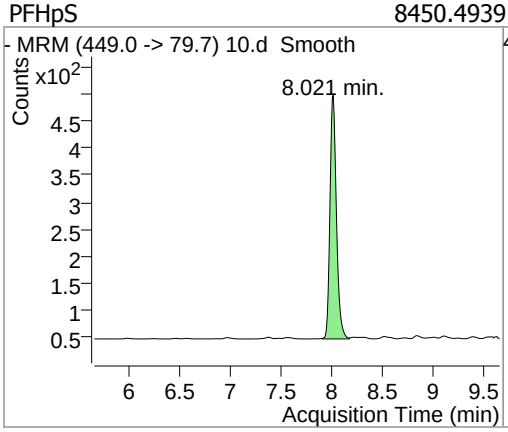
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	9671.3827	8.00	0.35	807				

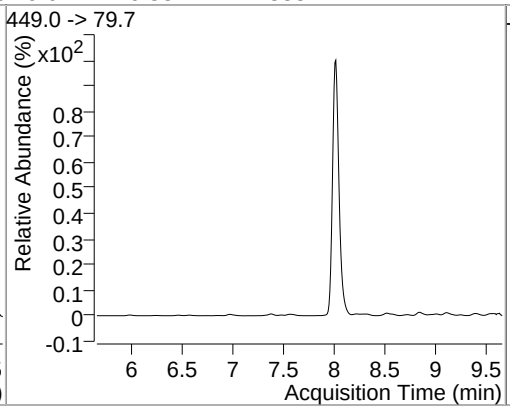


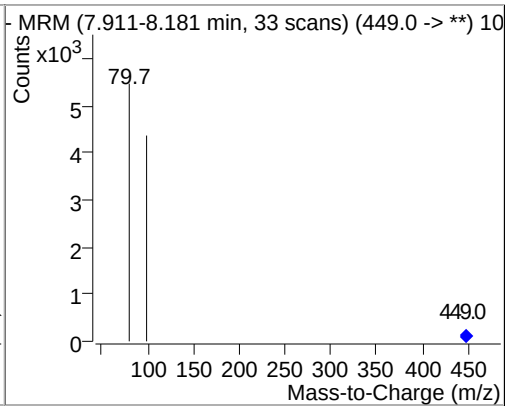
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	10244.4642	8.01	0.35	15790				



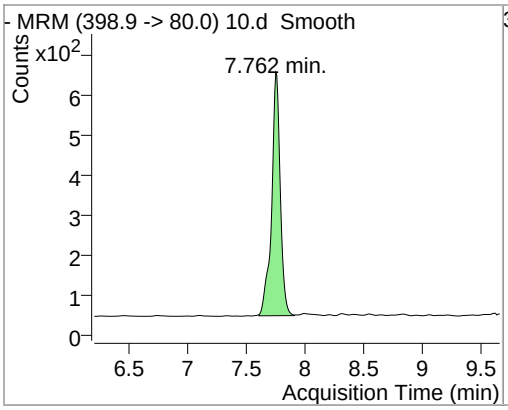
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	8450.4939	8.02	0.35	1999				

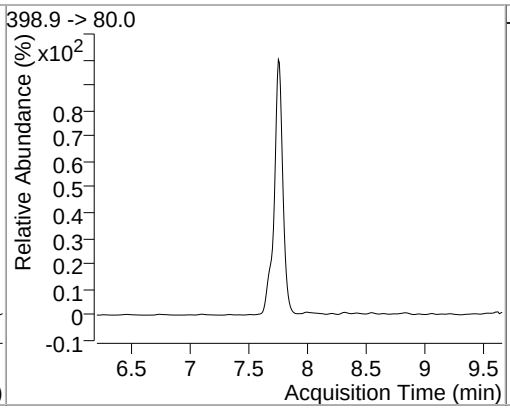


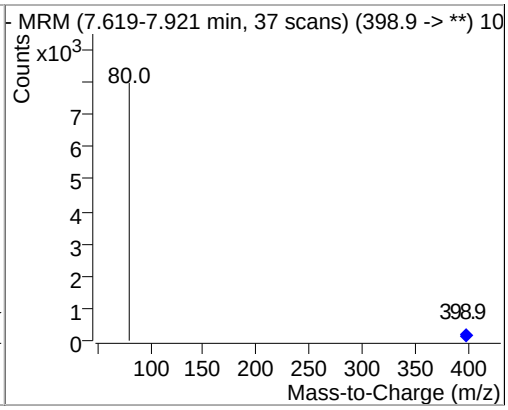




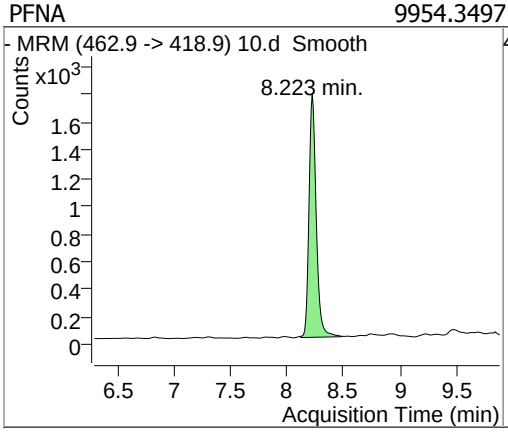
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	9420.1585	7.76	0.08	3139				

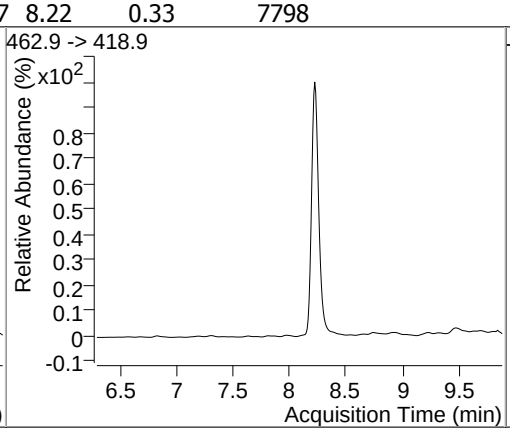


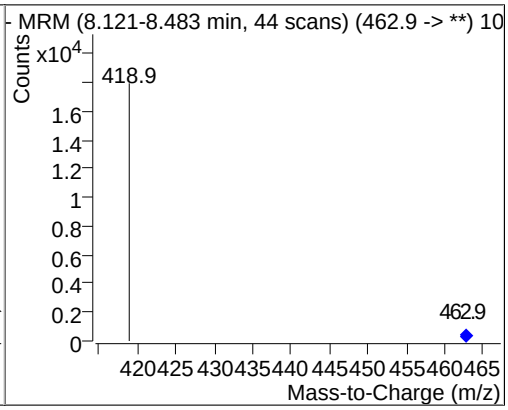




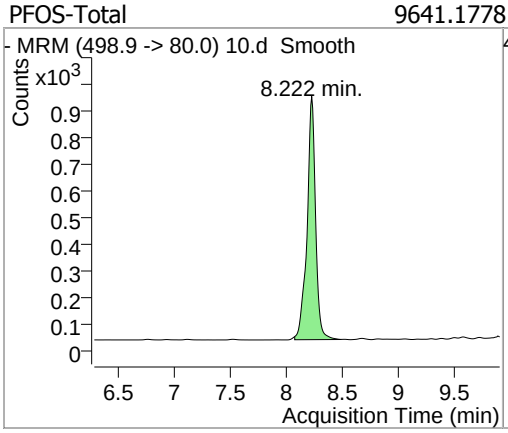
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	9954.3497	8.22	0.33	7798				

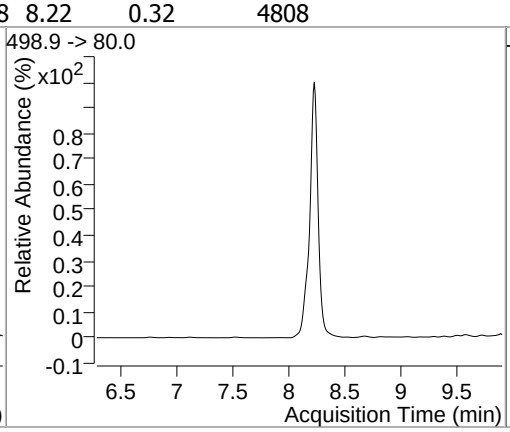


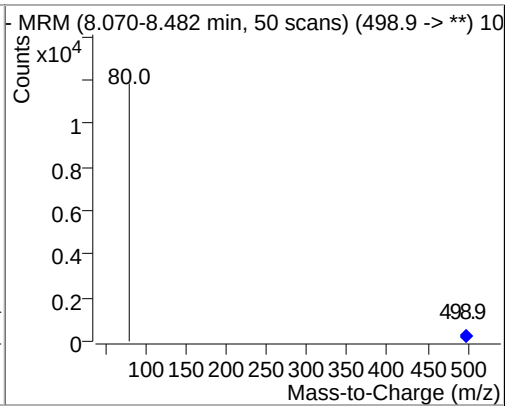




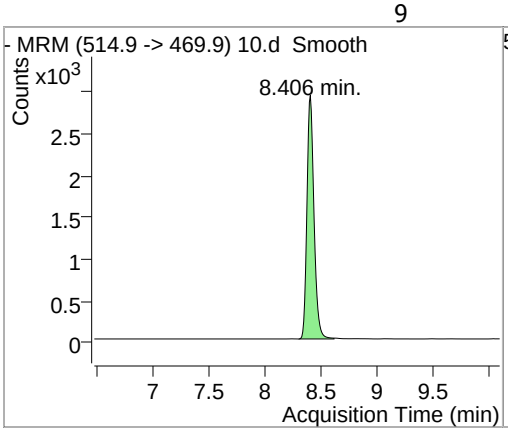
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	9641.1778	8.22	0.32	4808				

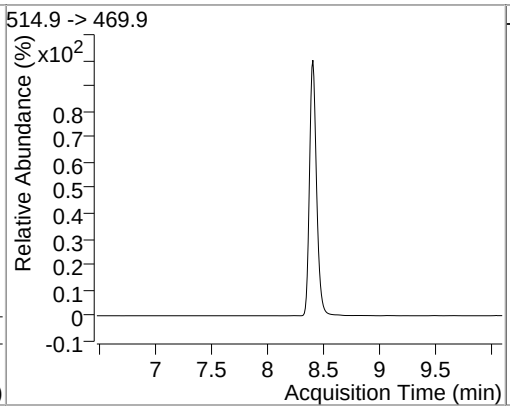


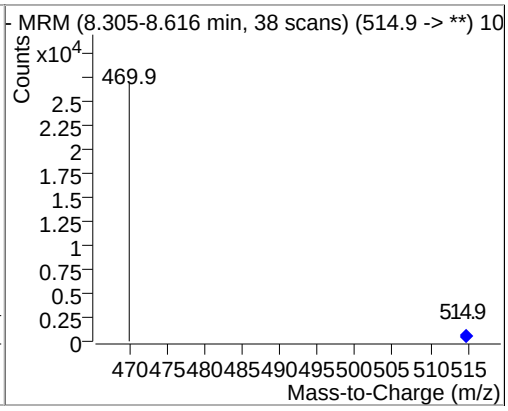




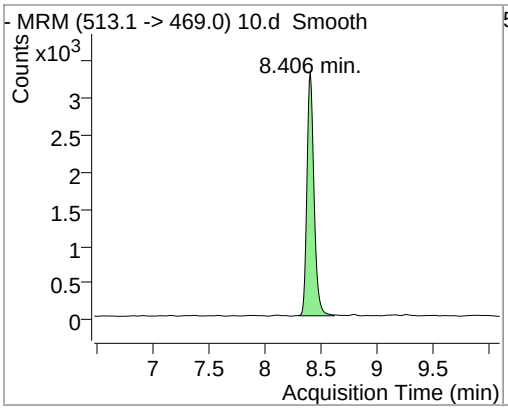
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	14527.6889	8.41	0.31	12662				

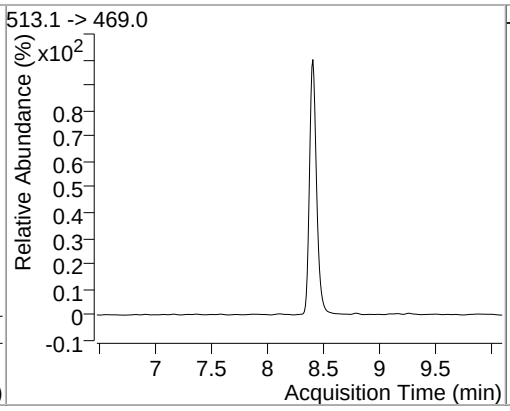


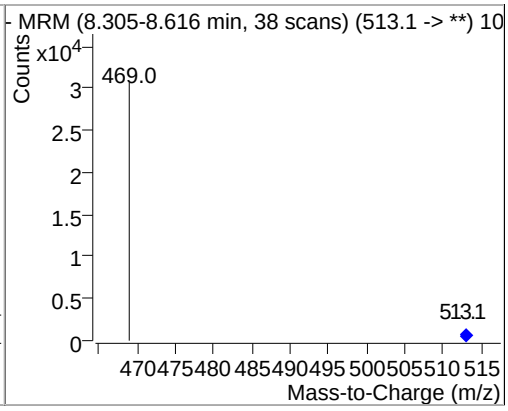




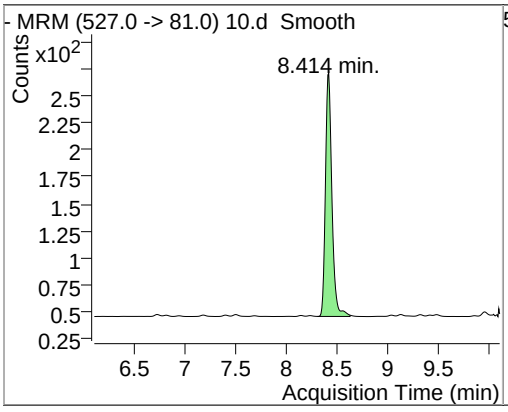
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	10825.8146	8.41	0.31	14415				

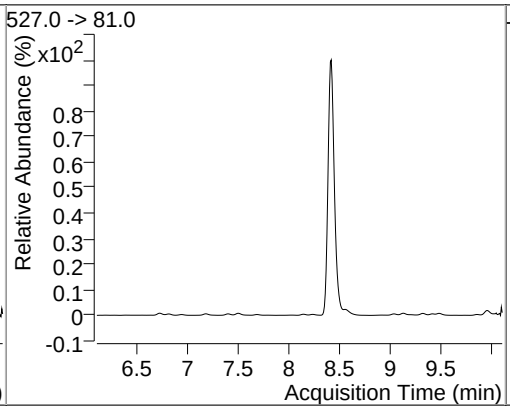


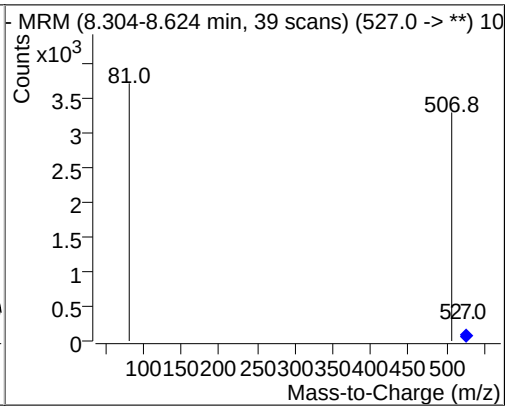




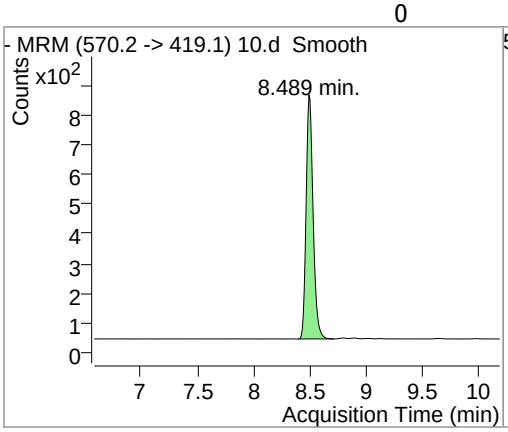
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	11134.8942	8.41	0.31	994				

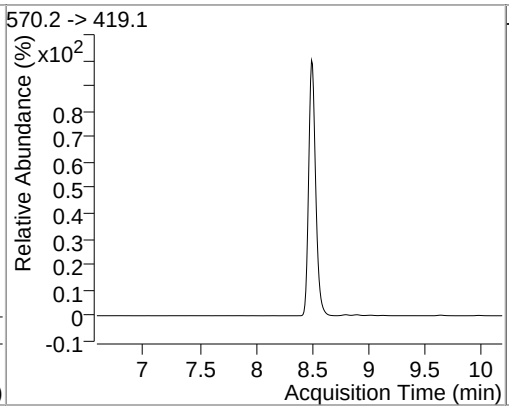


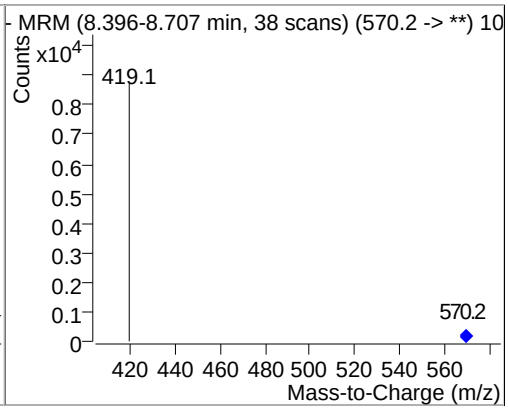




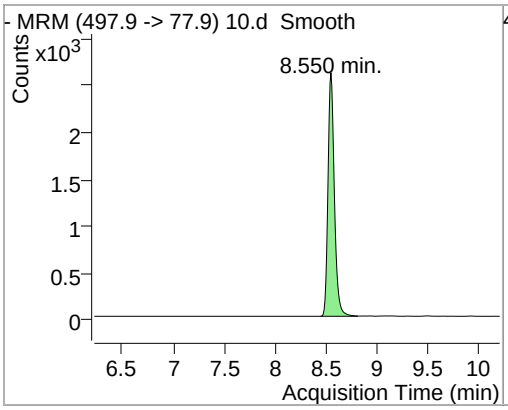
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	10368.4550	8.49	0.30	3524				

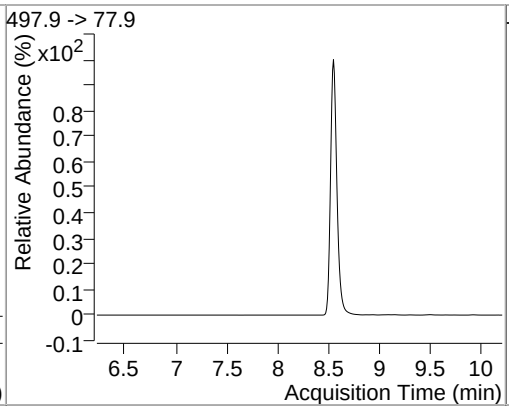


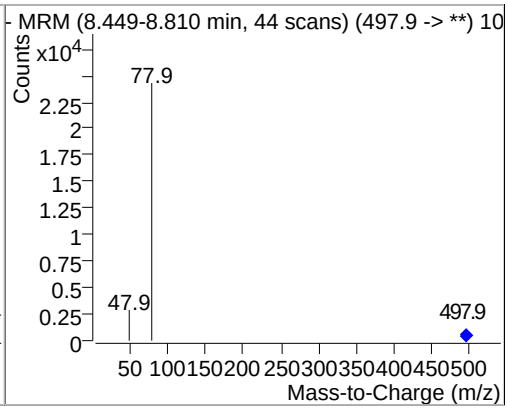




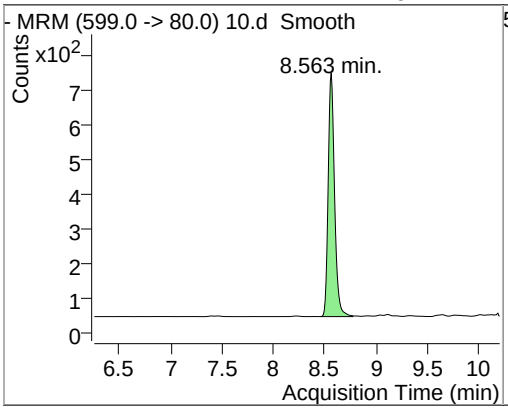
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	10667.7827	8.55	0.33	11255				

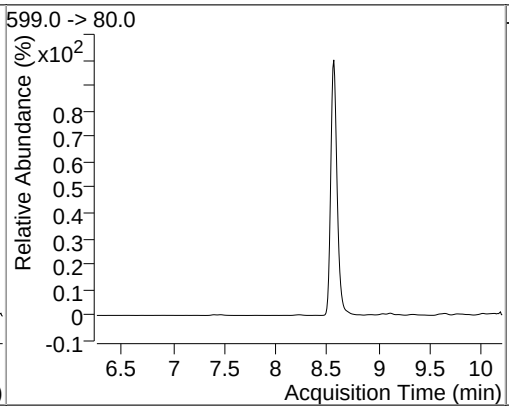


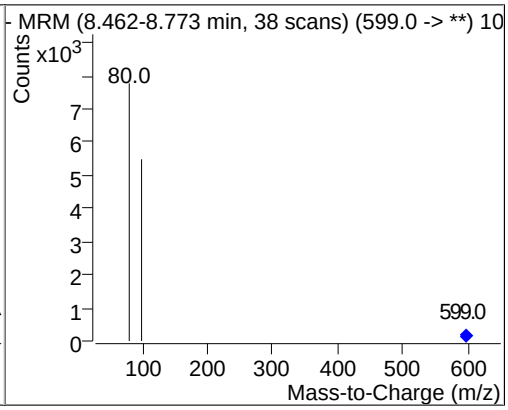




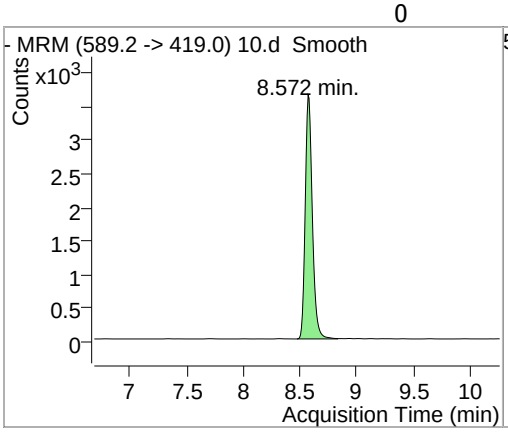
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	10290.5888	8.56	0.30	3039				

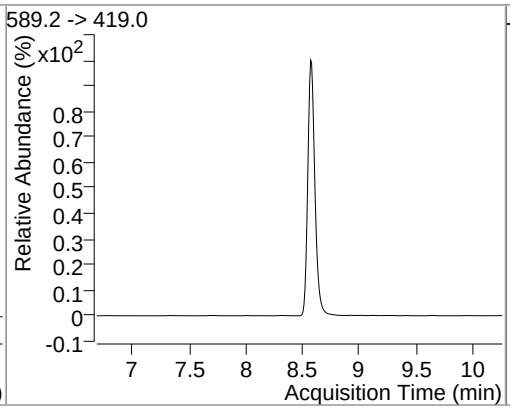


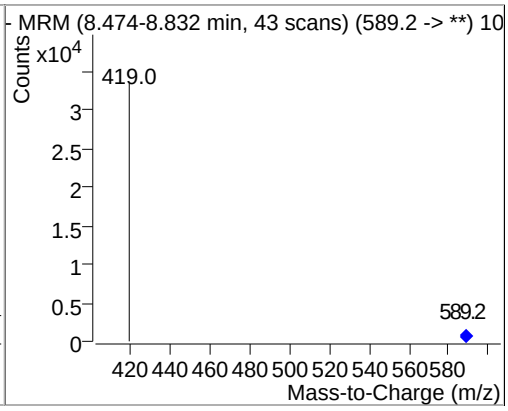




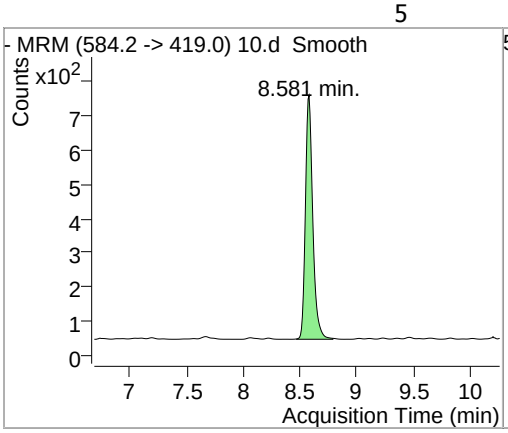
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	60630.5370	8.57	0.30	15795				

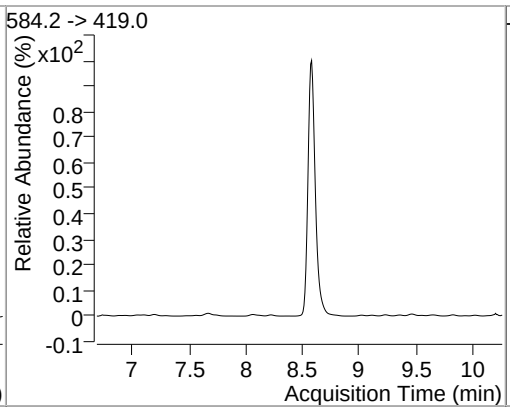


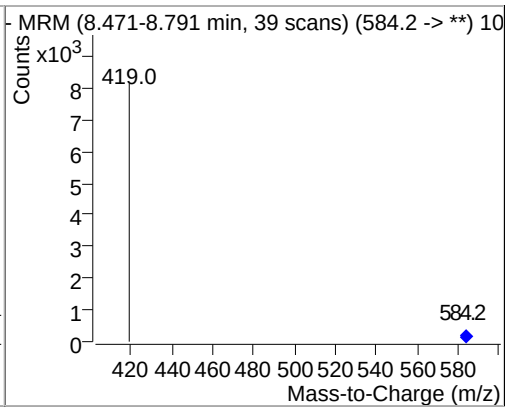




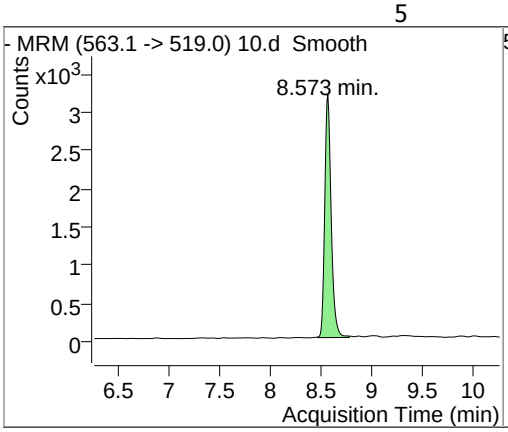
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	11635.5315	8.58	0.31	3218				

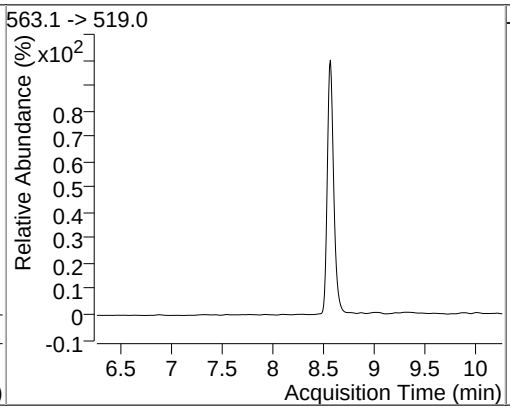


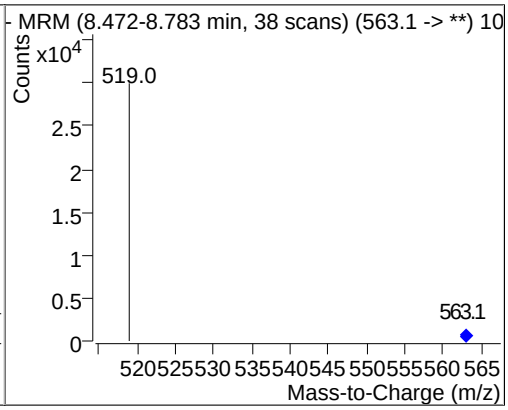




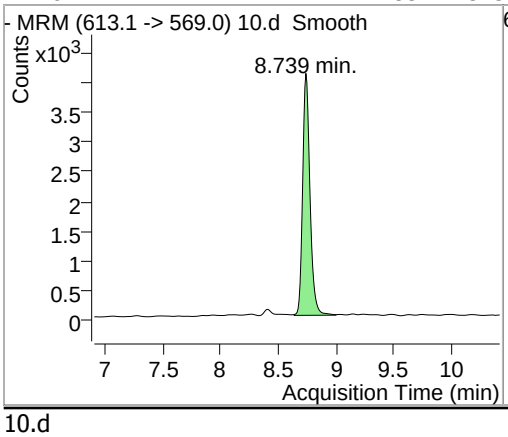
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	10428.2155	8.57	0.30	13957				

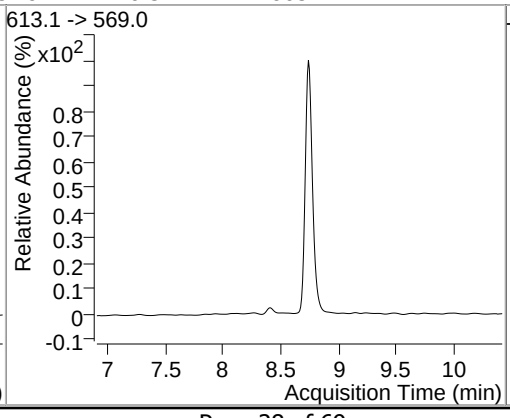


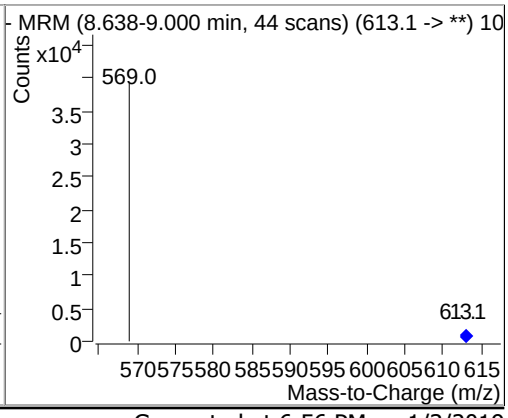




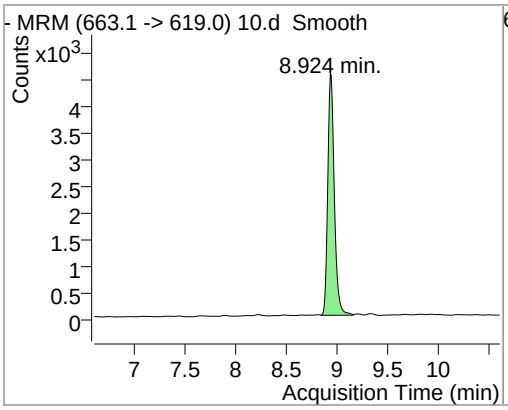
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	9972.1573	8.74	0.31	18057				

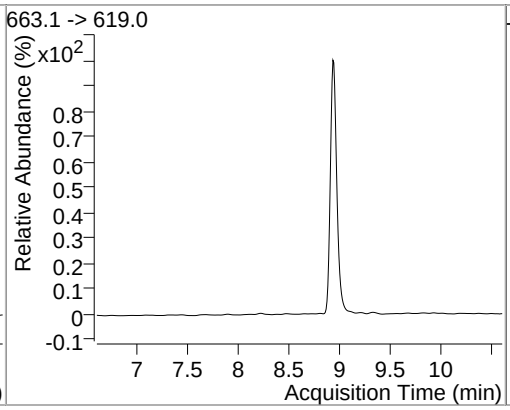


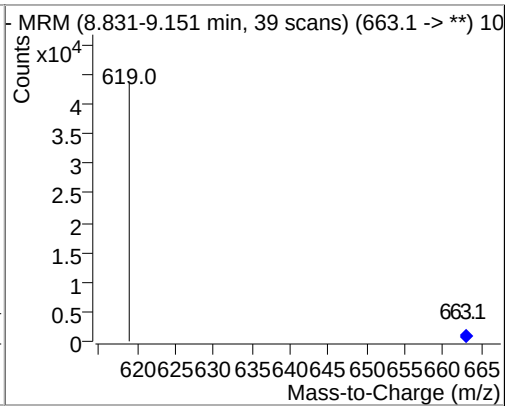




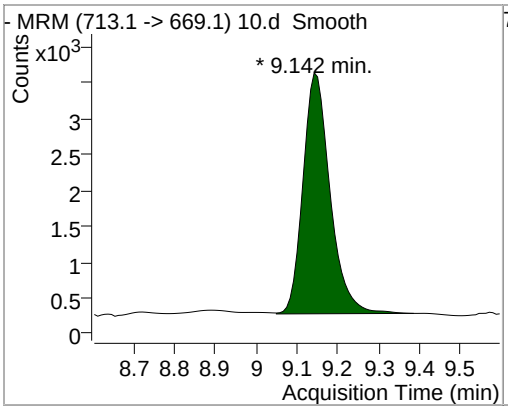
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	10146.2362	8.92	0.33	20309				

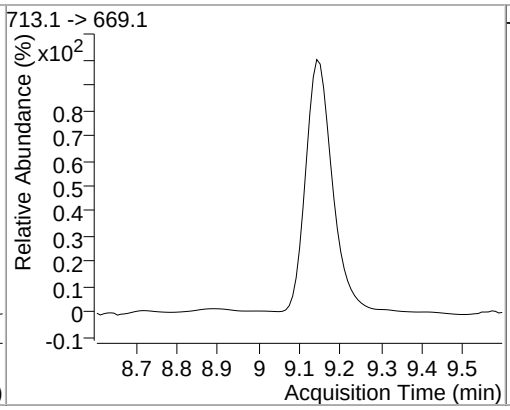


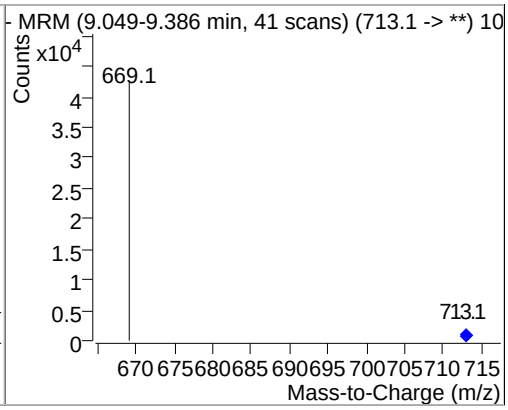




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	10043.2813	9.14	0.04	15515 (m)				





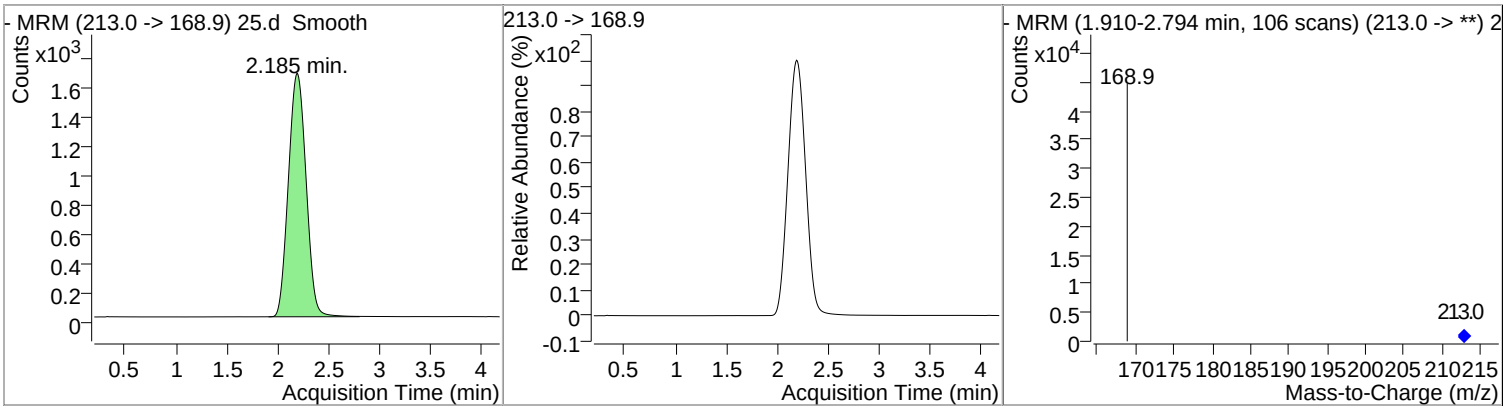


Data File	25.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/20/2018 10:31:41 PM
Sample Name	25	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

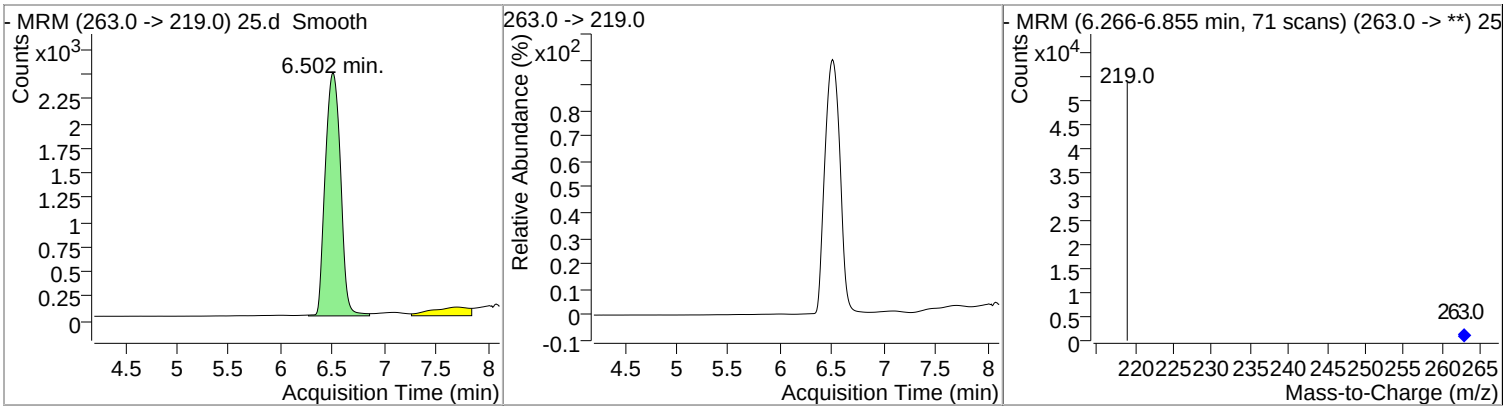
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	8.005	416.9 -> 371.9	14279	10000.0000	pg/ml		0.354
M PFOS C13	8.221	502.9 -> 80.0	11577	28700.0000	pg/ml		0.321
M d3-N-MeFOSAA	8.489	573.2 -> 419.0	12257	40000.0000	pg/ml		0.304
System Monitoring Compounds							
S PFHxA C13	7.342	314.9 -> 269.9	34496	19651.6761	pg/ml		0.404
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 196.52%		*	
S PFDA C13	8.397	514.9 -> 469.9	18040	19497.8695	pg/ml		0.304
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 194.98%		*	
S d5-N-MeFOSAA	8.572	589.2 -> 419.0	20993	78296.0233	pg/ml		0.304
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 195.74%		*	
Target Compounds							QValue
T PFBA	2.185	213.0 -> 168.9	19796	24711.4337	pg/ml		100
T PFPeA	6.502	263.0 -> 219.0	25334	25162.2173	pg/ml		100
T PFBS	6.871	298.9 -> 80.0	8708	23246.2365	pg/ml		100
T PFHxA	7.342	312.9 -> 268.9	39386	24416.8285	pg/ml		100
T PFHpA	7.728	362.9 -> 319.0	42428	24521.1564	pg/ml		100
T 6.2 FTS	7.996	427.0 -> 406.8	1889	22183.2171	pg/ml		100
T PFOA-Total	7.997	412.9 -> 368.9	41631	25443.7059	pg/ml		100
T PFHpS	8.012	449.0 -> 79.7	5789	23970.1912	pg/ml		100
T PFHxS-Total	7.753	398.9 -> 80.0	7707	22658.4478	pg/ml		100
T PFNA	8.214	462.9 -> 418.9	20587	24757.1012	pg/ml		100
T PFOS-Total	8.213	498.9 -> 80.0	11813	23208.5674	pg/ml		100
T PFDA	8.398	513.1 -> 469.0	35652	25223.2193	pg/ml		100
T 8.2 FTS	8.405	527.0 -> 81.0	2165	23754.0340	pg/ml		100
T N-MeFOSAA	8.489	570.2 -> 419.1	8698	24866.3181	pg/ml		100
T FOSA	8.550	497.9 -> 77.9	27153	25004.4944	pg/ml		100
T PFDS	8.563	599.0 -> 80.0	7640	25342.1880	pg/ml		100
T N-EtFOSAA	8.572	584.2 -> 419.0	7242	25440.6221	pg/ml		100
T PFUnA	8.565	563.1 -> 519.0	35726	25145.2094	pg/ml		100
T PFDoA	8.739	613.1 -> 569.0	47703	24817.7427	pg/ml		100
T PFTrDA	8.932	663.1 -> 619.0	51507	24240.5352	pg/ml		100
T PFTA	9.150	713.1 -> 669.1	41362	25222.5815	pg/ml		100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

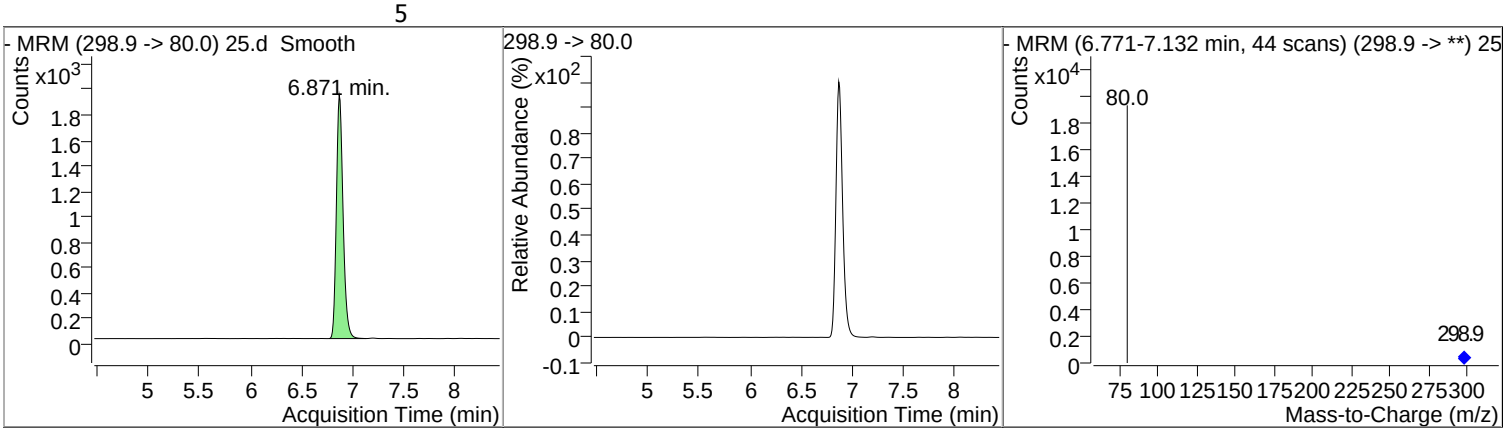
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	24711.4337	2.19	0.01	19796				



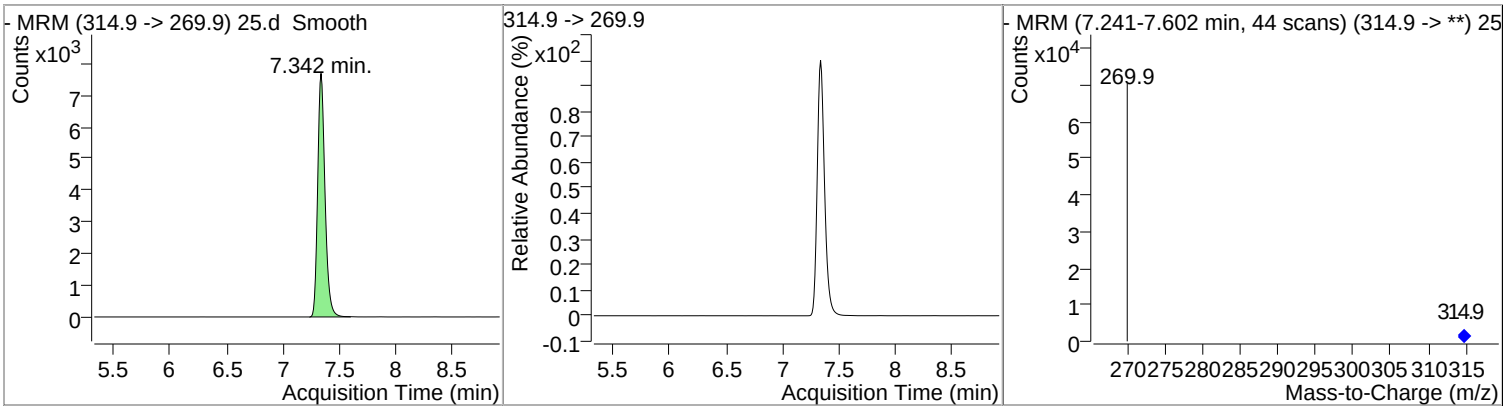
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	25162.2173	6.50	0.39	25334				



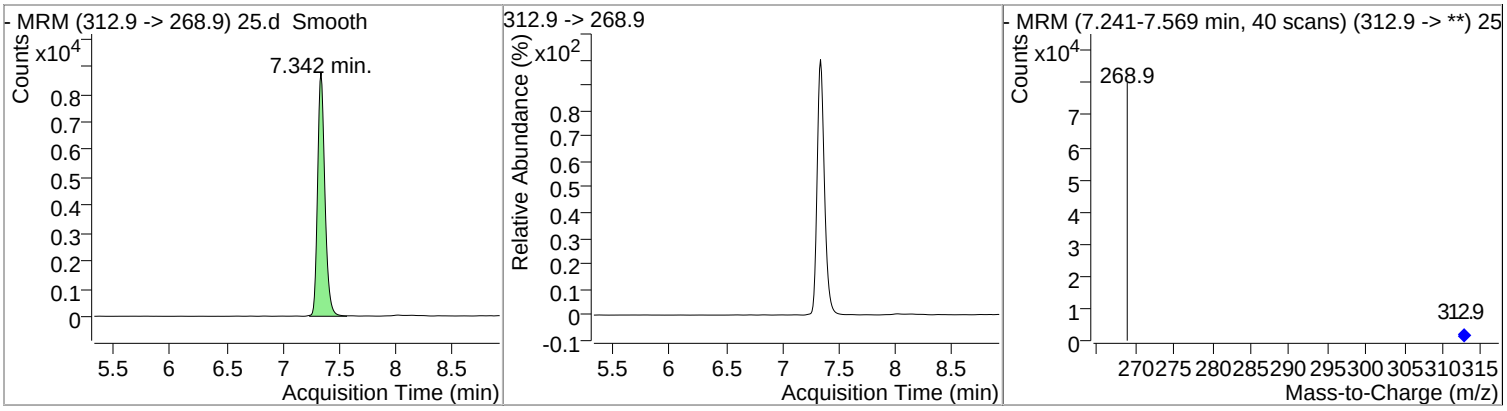
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	23246.2365	6.87	0.42	8708				



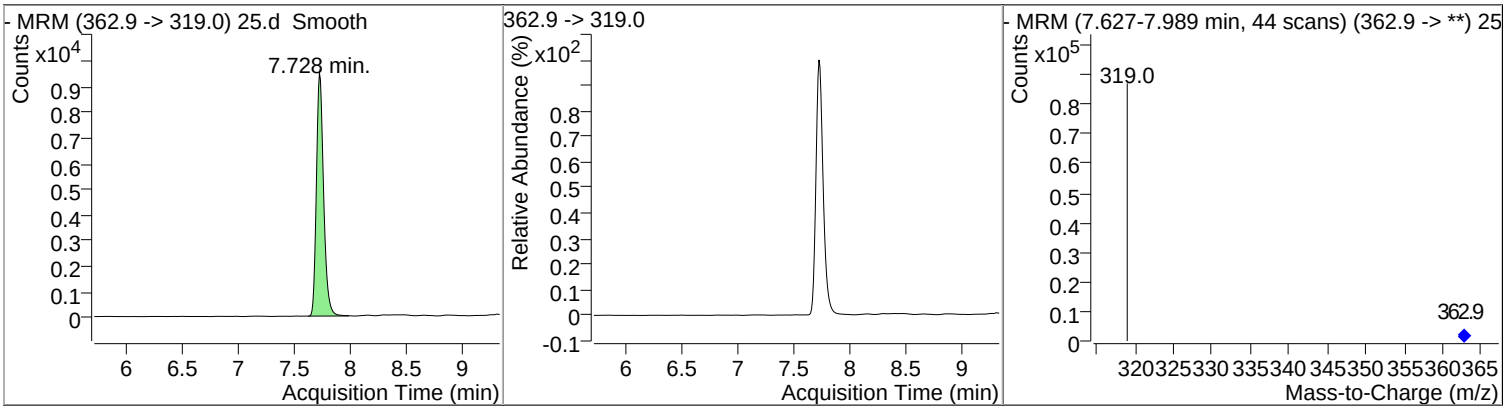
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	19651.6761	7.34	0.40	34496				



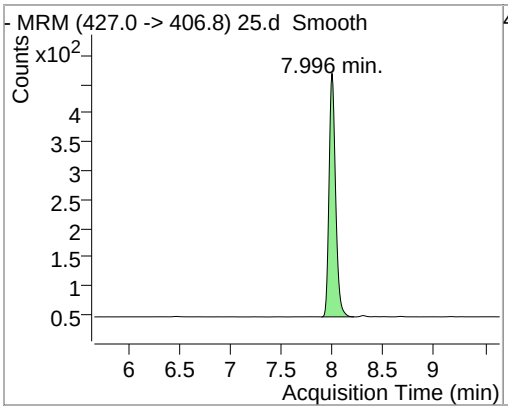
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PFHxA	24416.8285	7.34	0.40	39386				

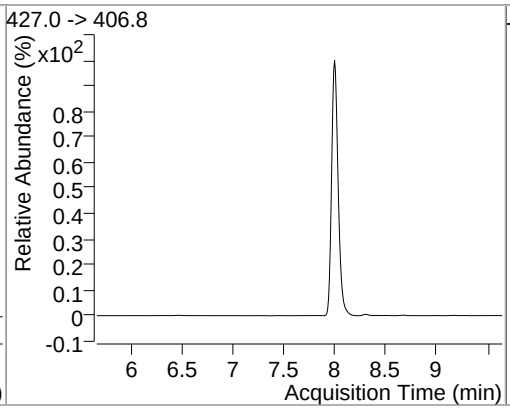


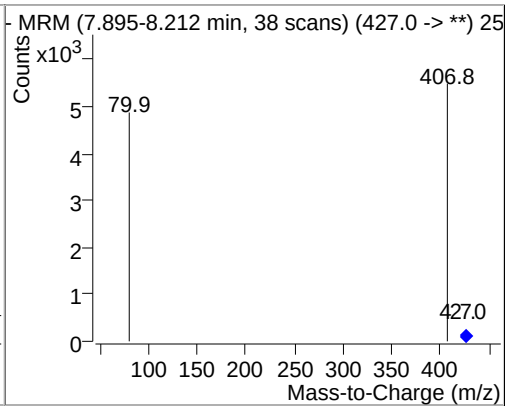
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	24521.1564	7.73	0.38	42428				



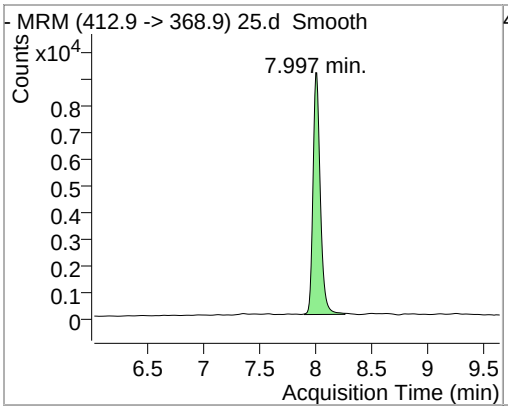
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	22183.2171	8.00	0.35	1889				

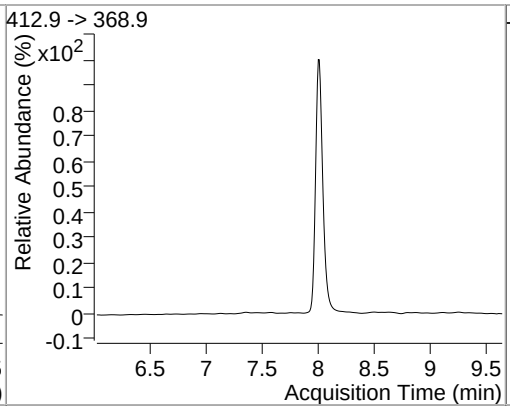


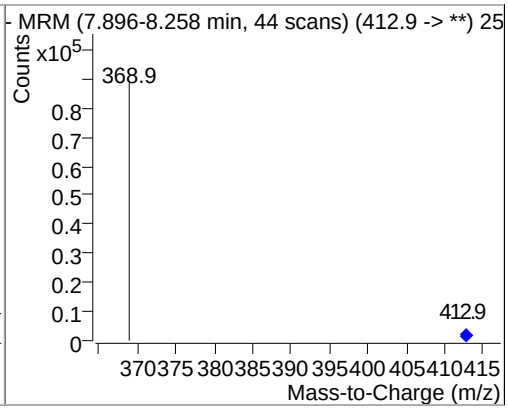




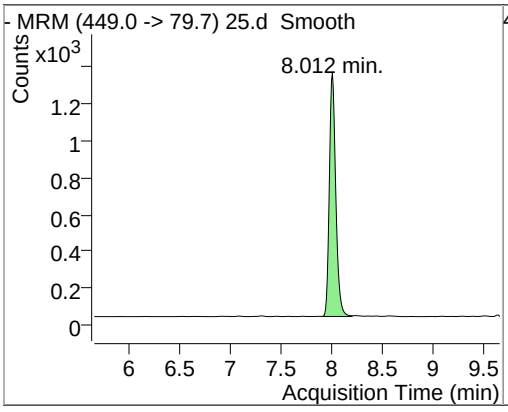
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	25443.7059	8.00	0.35	41631				

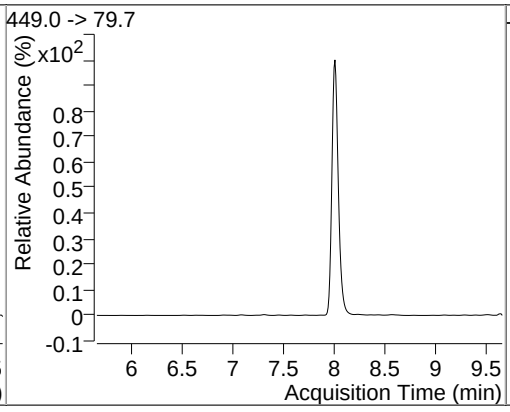


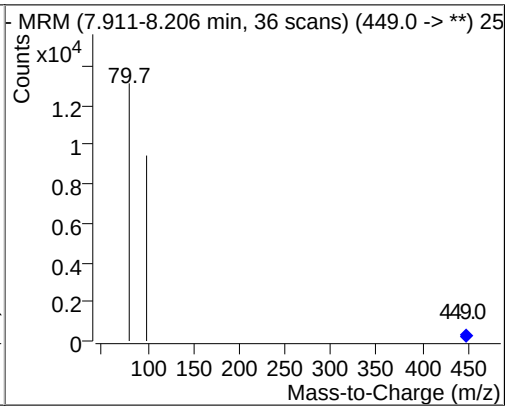




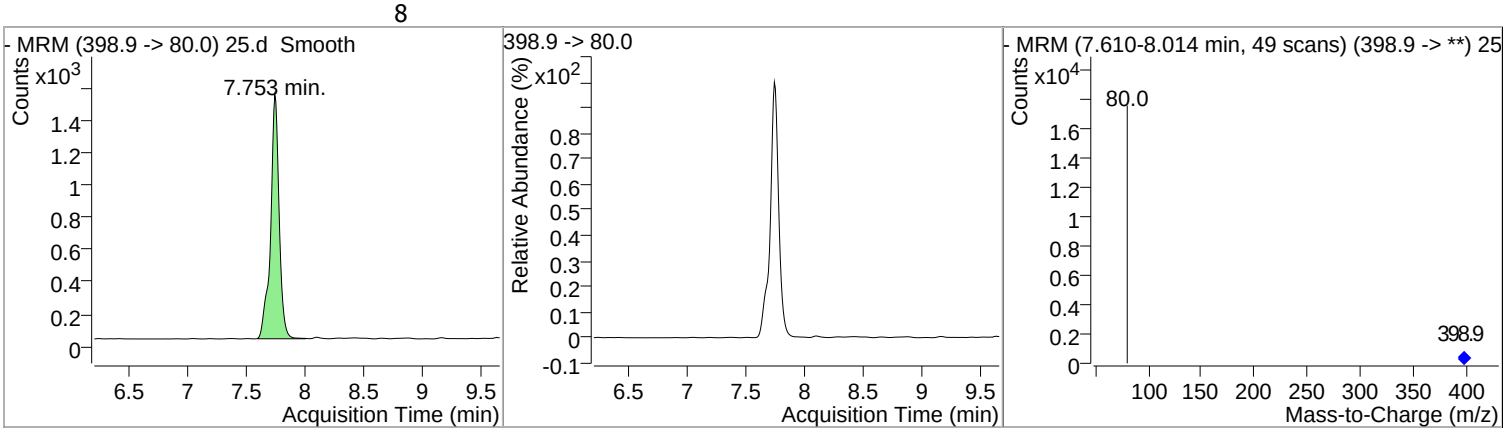
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	23970.1912	8.01	0.35	5789				



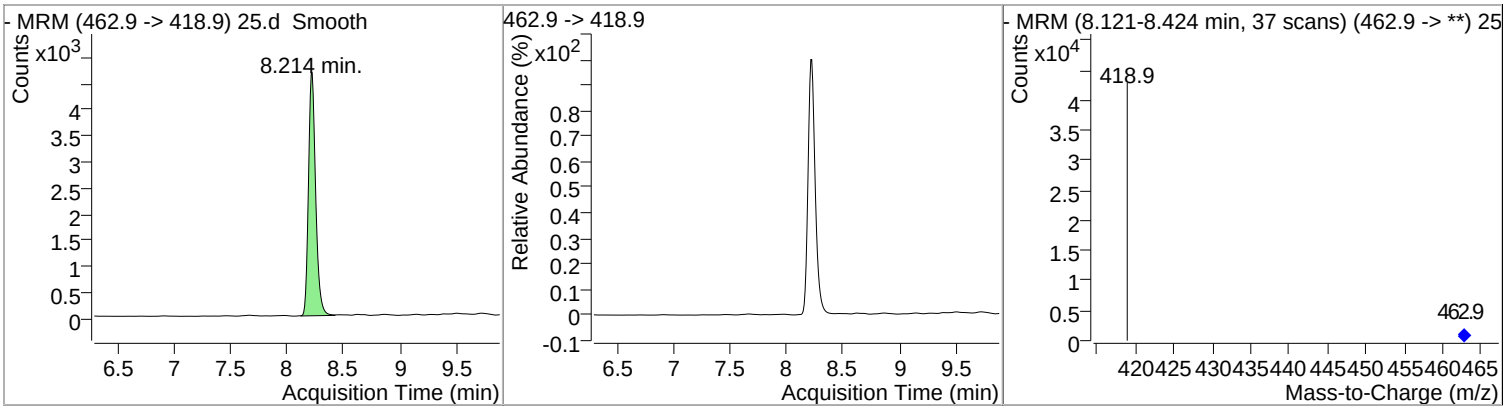




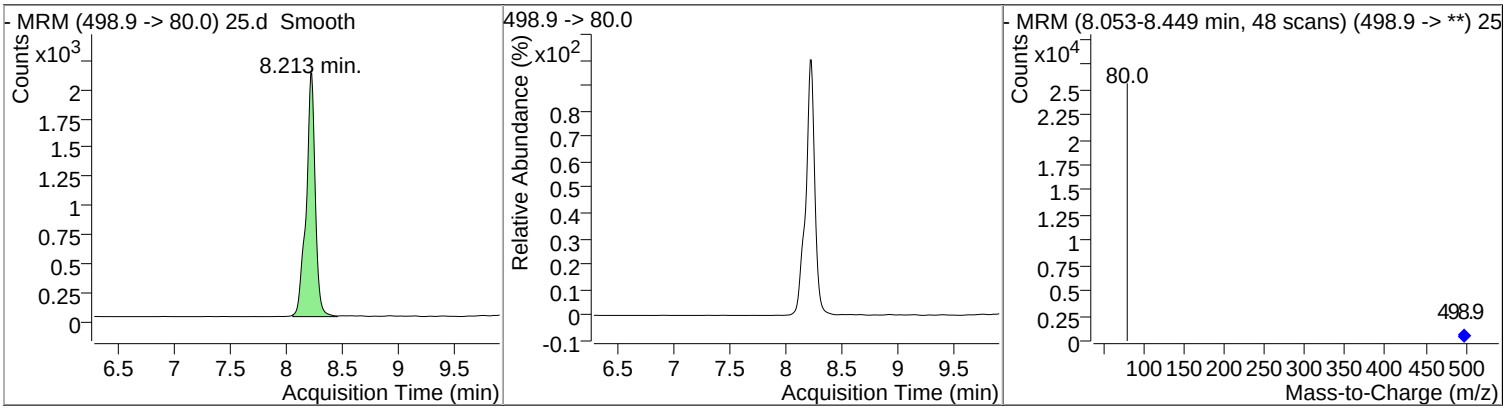
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	22658.4478	7.75	0.08	7707				



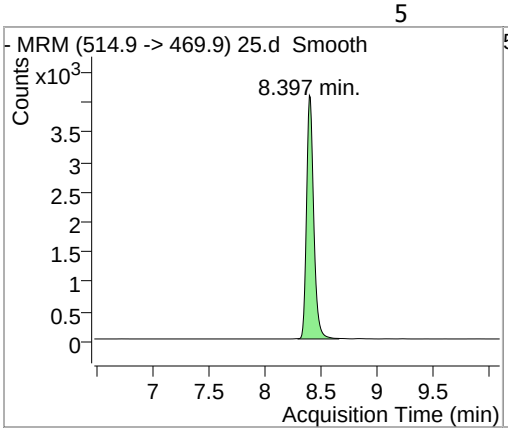
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	24757.1012	8.21	0.32	20587				

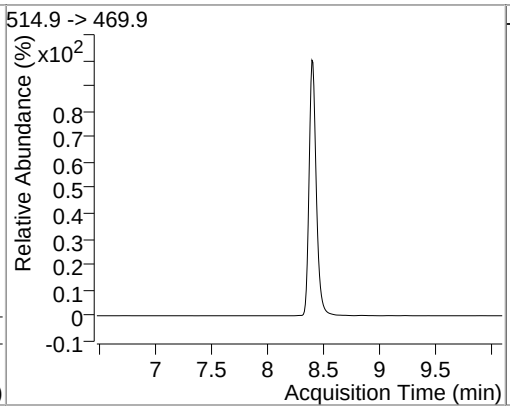


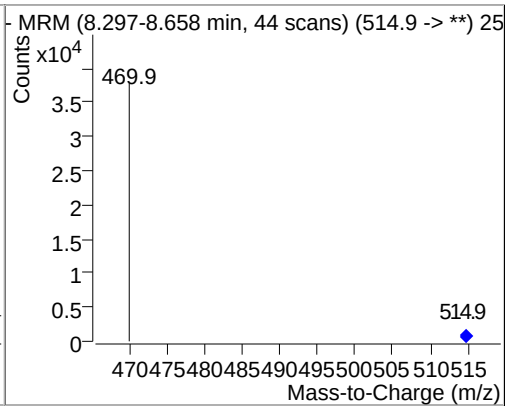
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	23208.5674	8.21	0.31	11813				



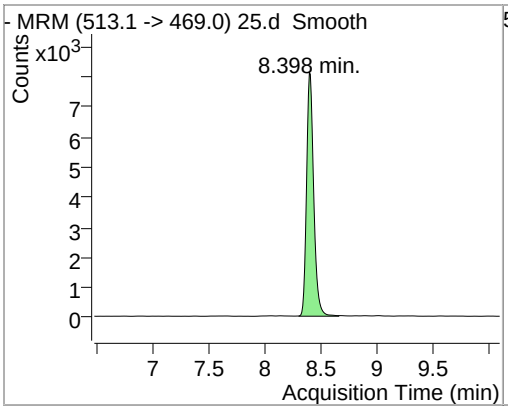
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	19497.8695	8.40	0.30	18040				

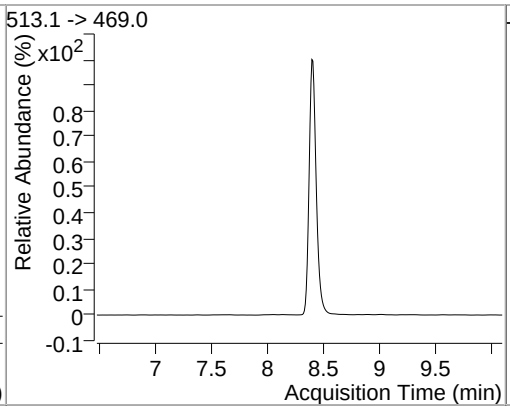


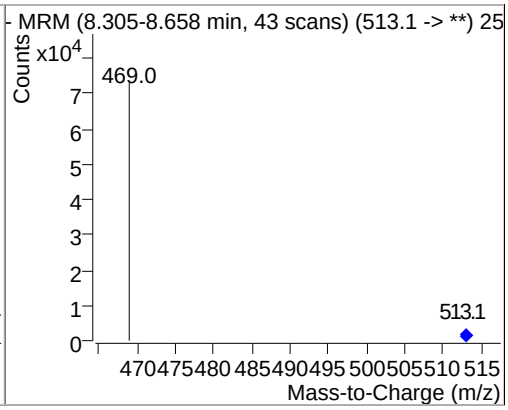




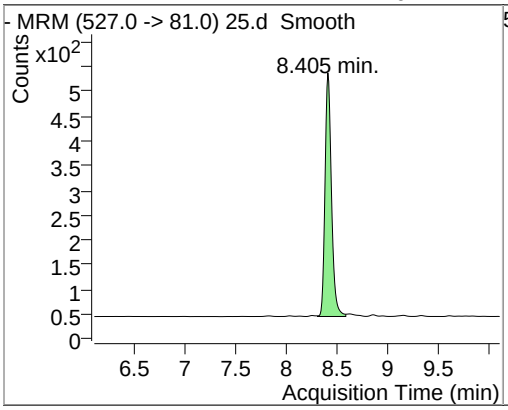
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	25223.2193	8.40	0.30	35652				

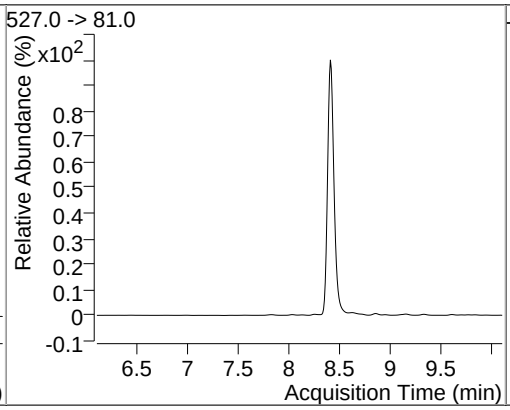


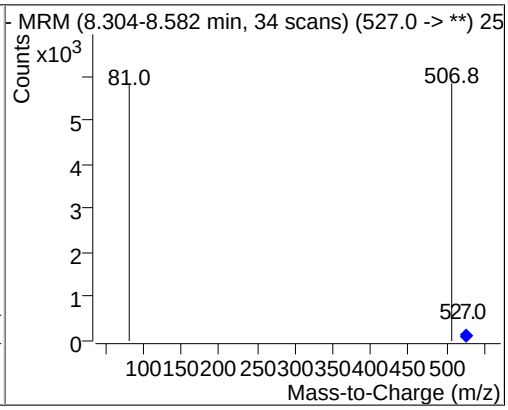




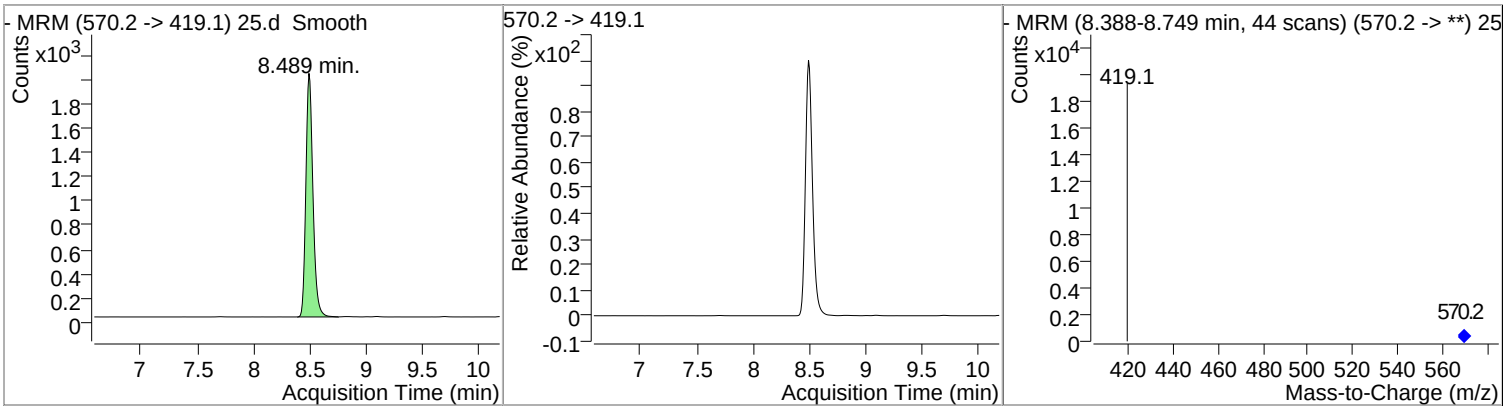
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	23754.0340	8.41	0.30	2165				



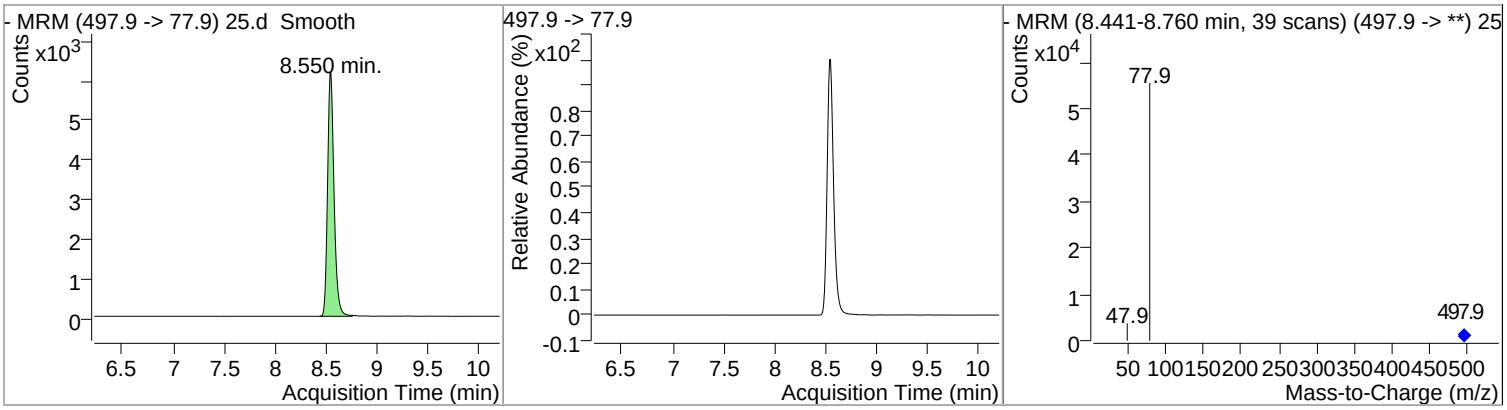




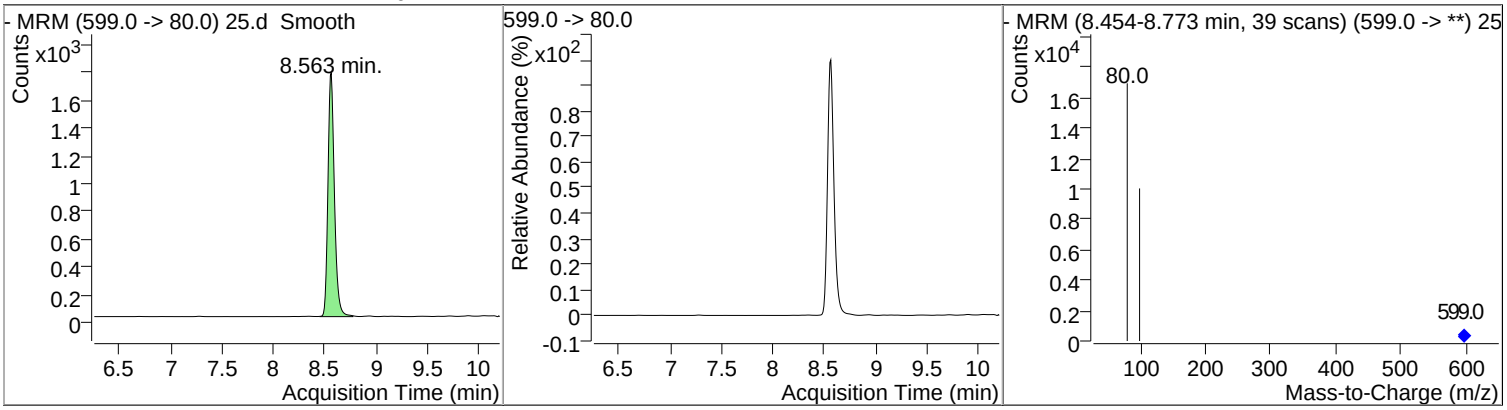
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	24866.3181	8.49	0.30	8698				



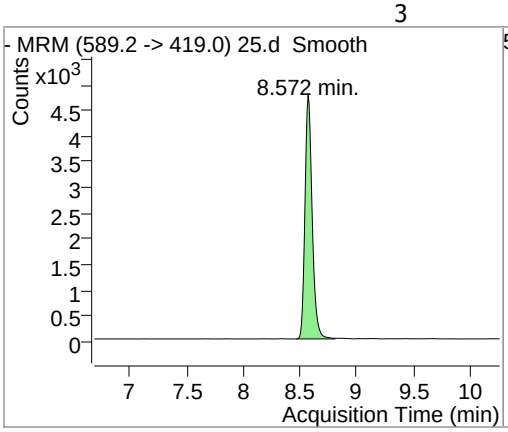
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	25004.4944	8.55	0.33	27153				

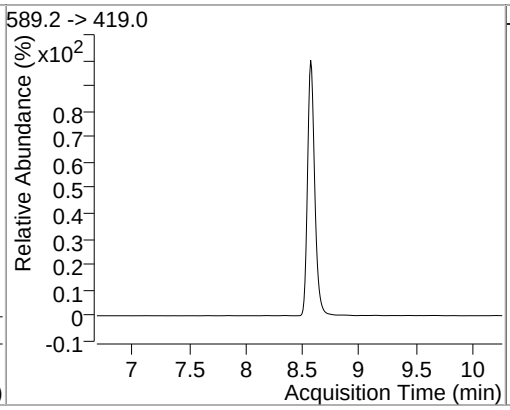


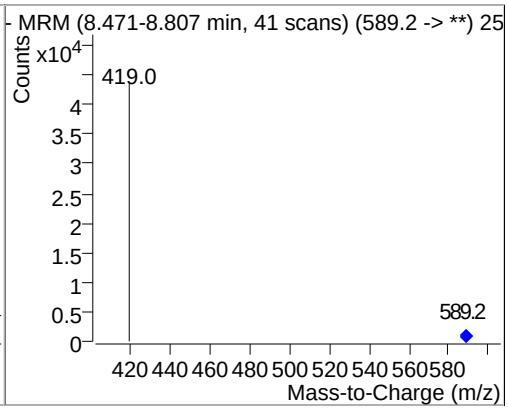
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	25342.1880	8.56	0.30	7640				



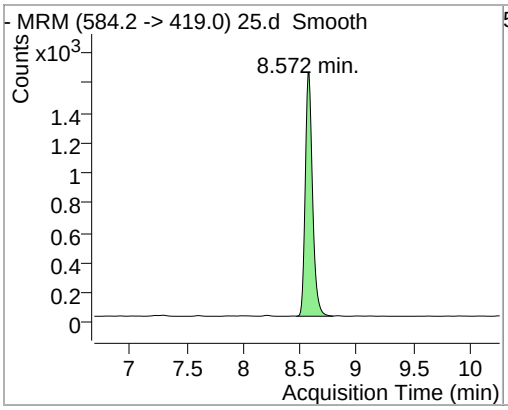
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	78296.0233	8.57	0.30	20993				

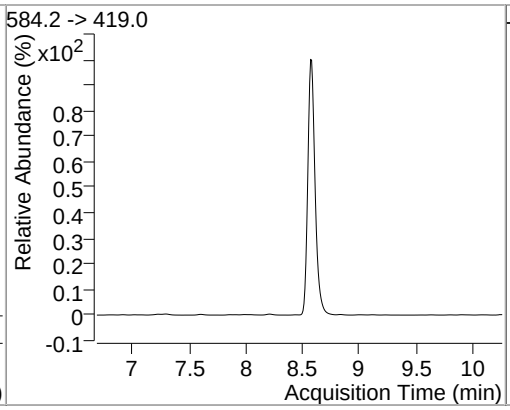


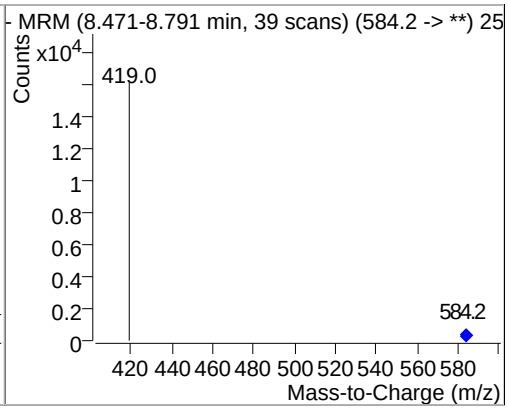




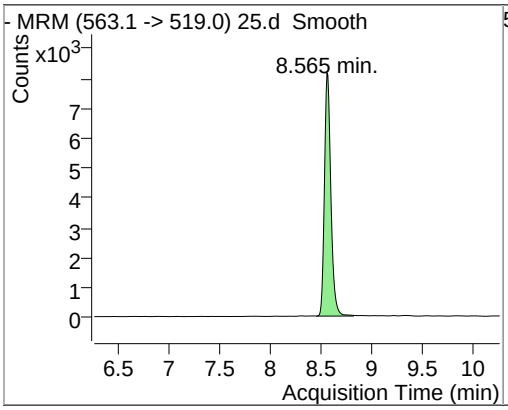
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	25440.6221	8.57	0.30	7242				

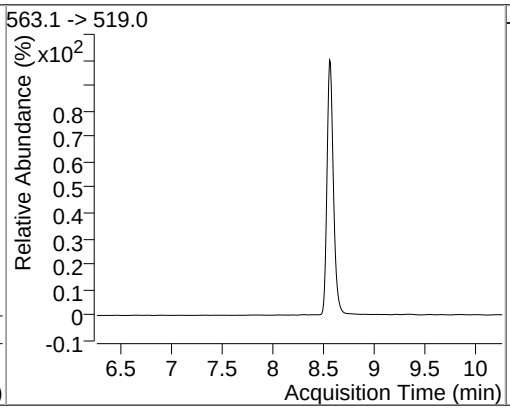


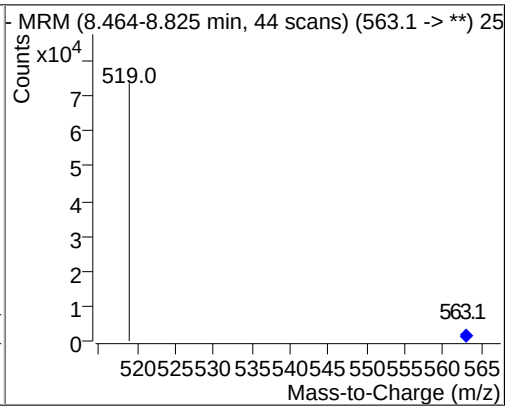




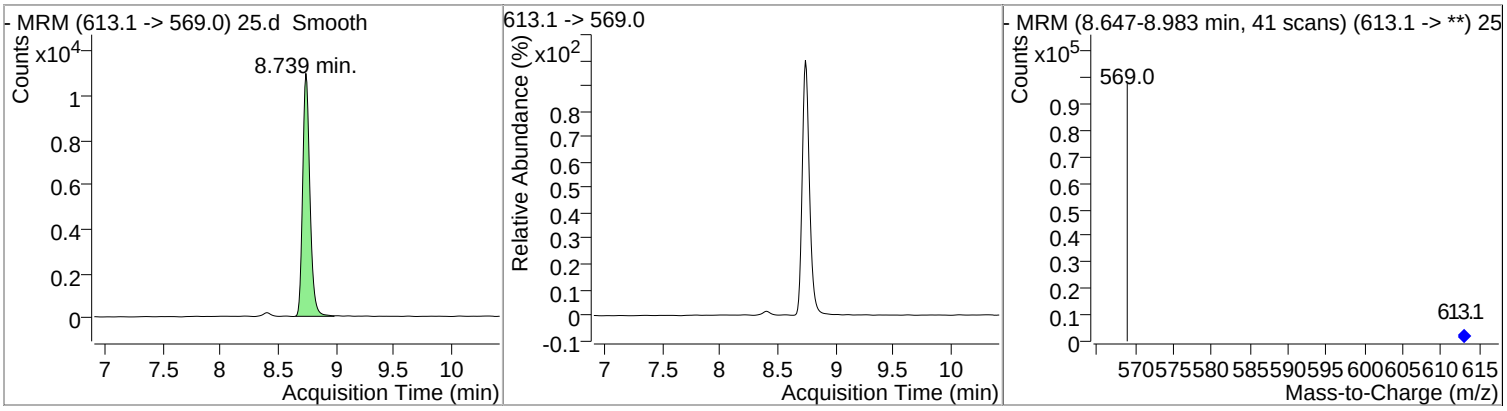
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	25145.2094	8.56	0.30	35726				



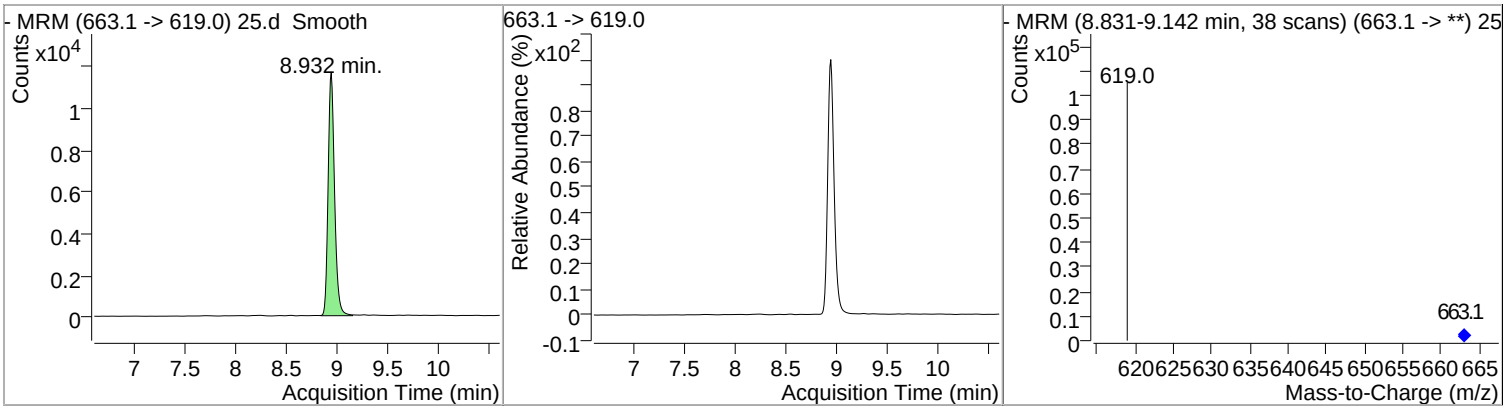




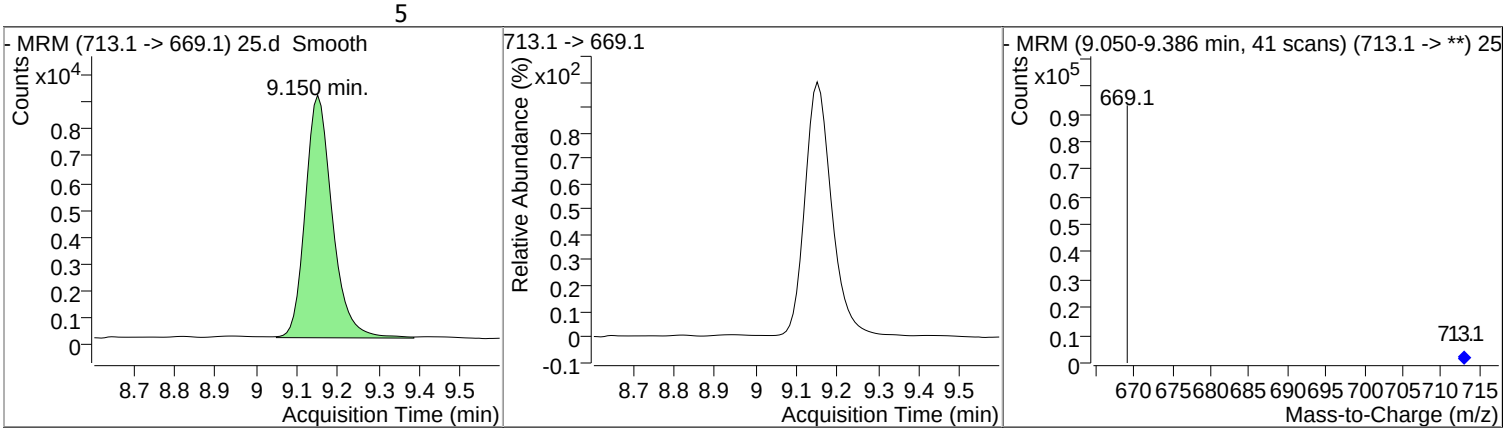
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	24817.7427	8.74	0.31	47703				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	24240.5352	8.93	0.34	51507				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	25222.5815	9.15	0.05	41362				

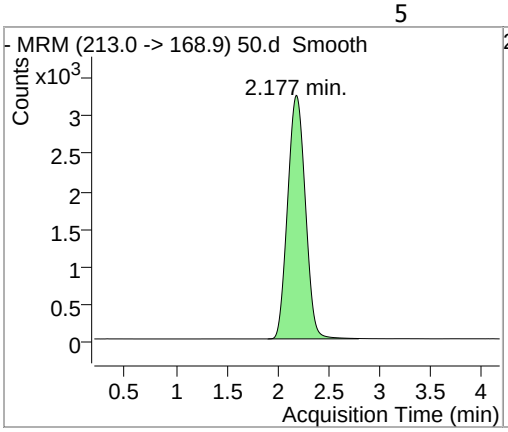


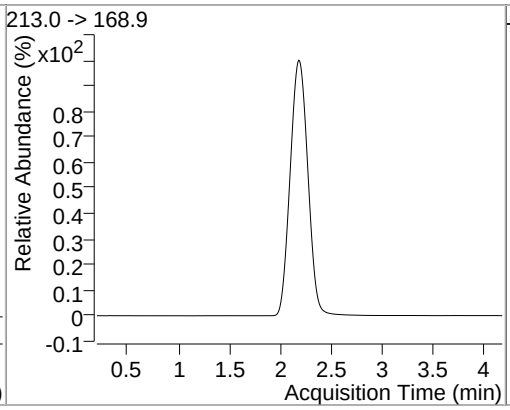
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Acq. Method	21List042718.m	Acq. Date-Time	12/20/2018 10:44:25 PM
Sample Name	50	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

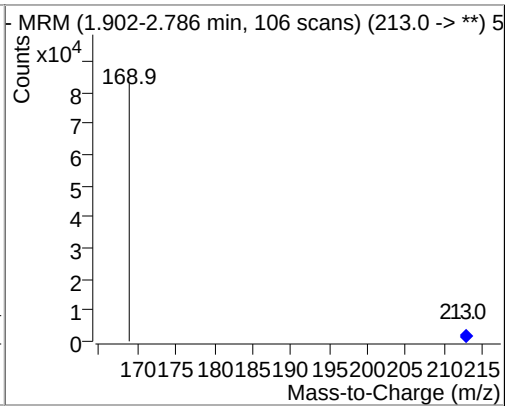
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	8.005	416.9 -> 371.9	13892	10000.0000	pg/ml		0.354
M PFOS C13	8.221	502.9 -> 80.0	11497	28700.0000	pg/ml		0.321
M d3-N-MeFOSAA	8.497	573.2 -> 419.0	11931	40000.0000	pg/ml		0.312
System Monitoring Compounds							
S PFHxA C13	7.350	314.9 -> 269.9	43527	25488.5598	pg/ml		0.413
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 254.89%		*	
S PFDA C13	8.406	514.9 -> 469.9	22574	25078.8607	pg/ml		0.313
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 250.79%		*	
S d5-N-MeFOSAA	8.580	589.2 -> 419.0	25913	99290.0940	pg/ml		0.313
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 248.23%		*	
Target Compounds							**QValue**
T PFBA	2.177	213.0 -> 168.9	38855	49857.5035	pg/ml		100
T PFPeA	6.510	263.0 -> 219.0	47993	48996.9078	pg/ml		100
T PFBS	6.880	298.9 -> 80.0	16005	43024.9202	pg/ml		100
T PFHxA	7.350	312.9 -> 268.9	78514	50031.7338	pg/ml		100
T PFHpA	7.737	362.9 -> 319.0	84676	50304.0995	pg/ml		100
T 6.2 FTS	7.996	427.0 -> 406.8	4067	48086.9640	pg/ml		100
T PFOA-Total	8.005	412.9 -> 368.9	78032	49021.4564	pg/ml		100
T PFHpS	8.012	449.0 -> 79.7	11535	48095.5619	pg/ml		100
T PFHxS-Total	7.762	398.9 -> 80.0	15365	45485.2302	pg/ml		100
T PFNA	8.223	462.9 -> 418.9	41520	51323.7026	pg/ml		100
T PFOS-Total	8.222	498.9 -> 80.0	22801	45106.0077	pg/ml		100
T PFDA	8.406	513.1 -> 469.0	67284	48929.9883	pg/ml		100
T 8.2 FTS	8.414	527.0 -> 81.0	4149	45829.6252	pg/ml		100
T N-MeFOSAA	8.497	570.2 -> 419.1	17101	50229.2476	pg/ml		100
T FOSA	8.550	497.9 -> 77.9	51782	48988.3206	pg/ml		100
T PFDS	8.563	599.0 -> 80.0	13707	45784.2022	pg/ml		100
T N-EtFOSAA	8.581	584.2 -> 419.0	13187	47588.2551	pg/ml		100
T PFUnA	8.573	563.1 -> 519.0	67783	49039.5016	pg/ml		100
T PFDoA	8.748	613.1 -> 569.0	94844	50719.8152	pg/ml		100
T PFTrDA	8.932	663.1 -> 619.0	104870	50730.9007	pg/ml		100
T PFTA	9.150	713.1 -> 669.1	79405	49771.7315	pg/ml		100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

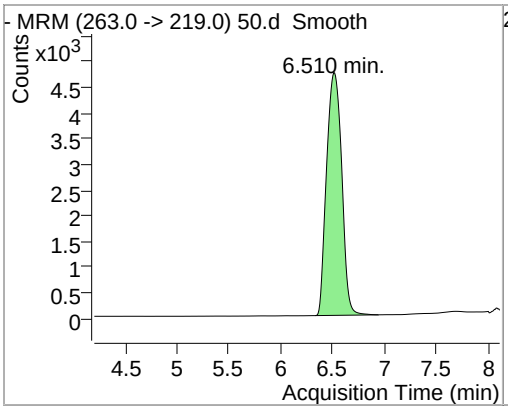
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	49857.5035	2.18	0.01	38855				

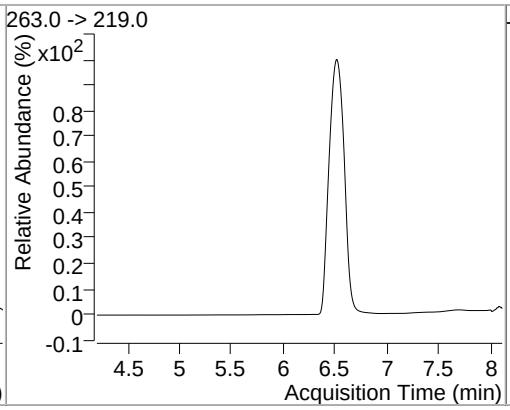


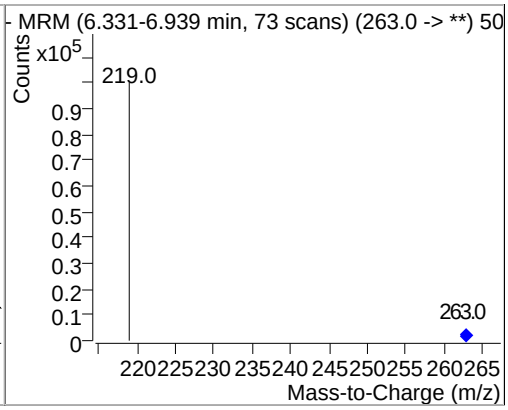




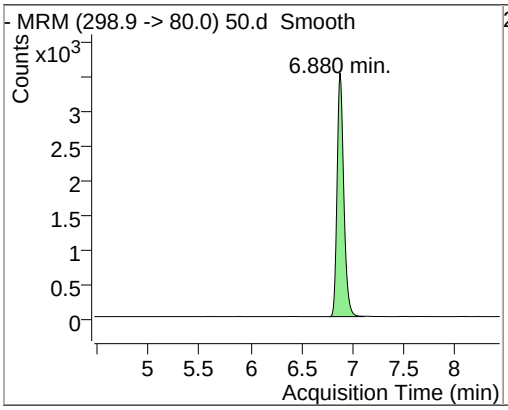
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	48996.9078	6.51	0.40	47993				

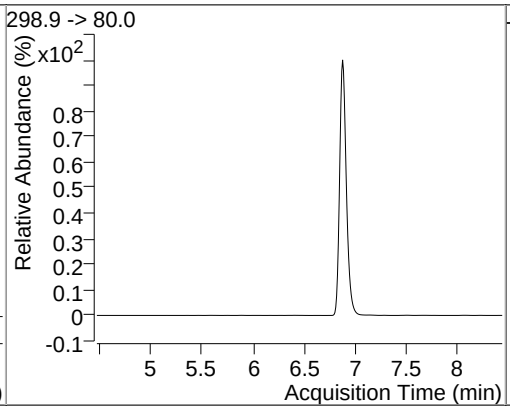


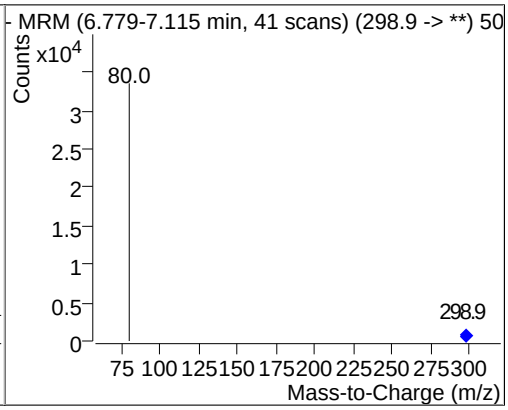




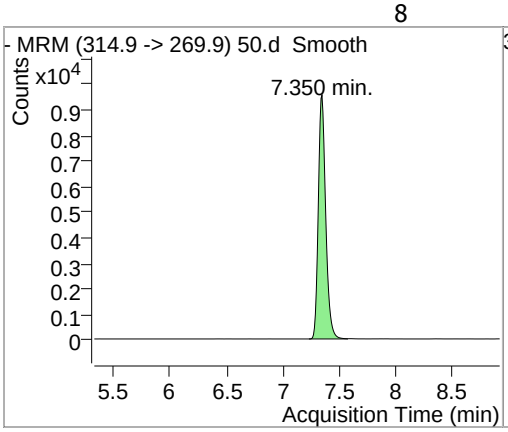
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	43024.9202	6.88	0.43	16005				

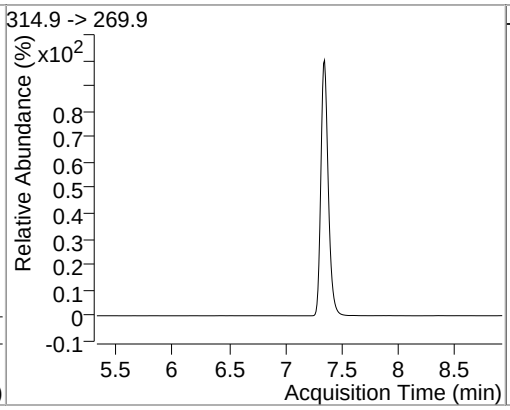


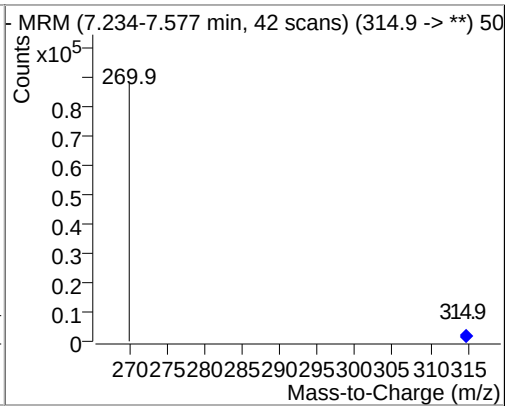




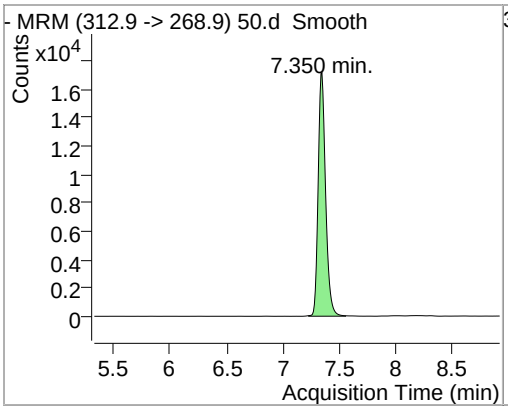
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	25488.5598	7.35	0.41	43527				

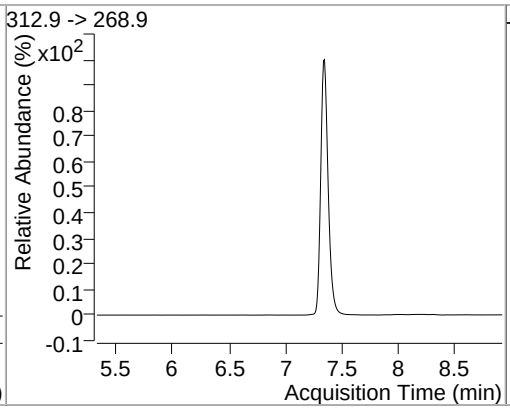


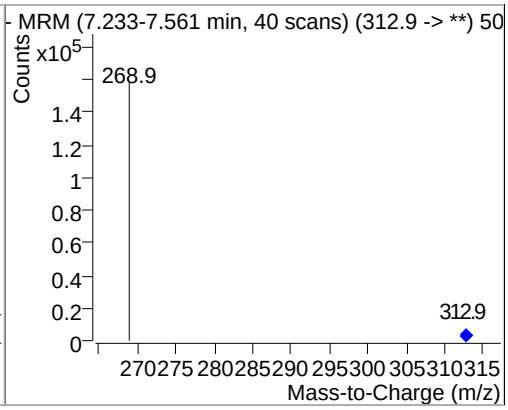




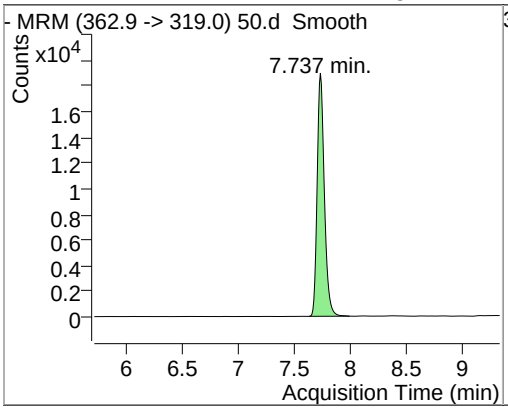
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	50031.7338	7.35	0.41	78514				

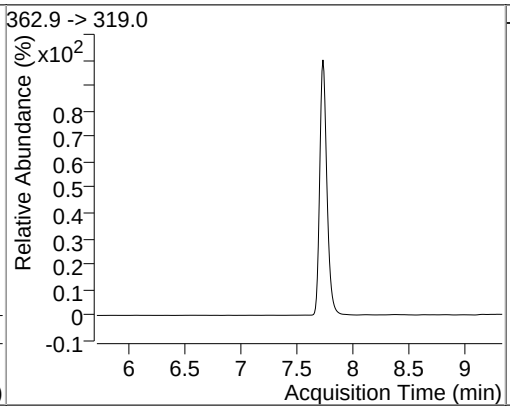


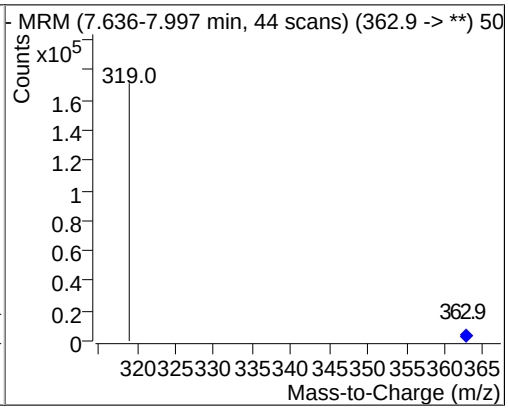




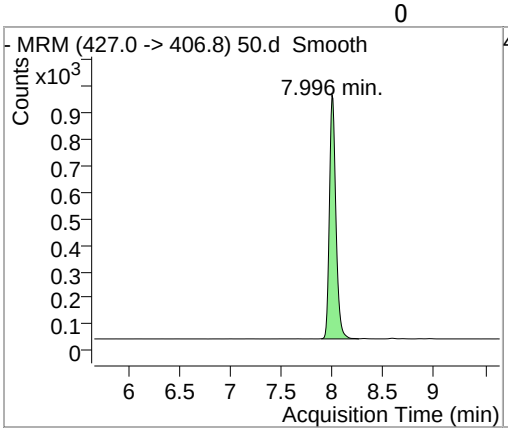
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	50304.0995	7.74	0.39	84676				

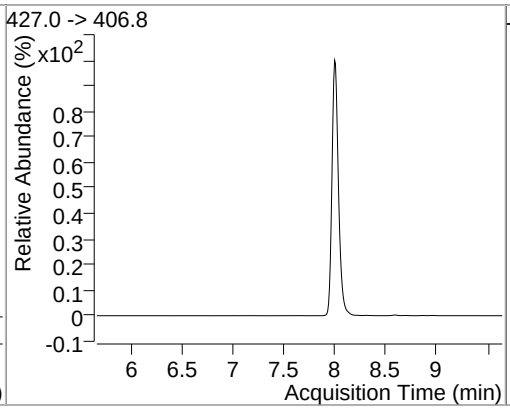


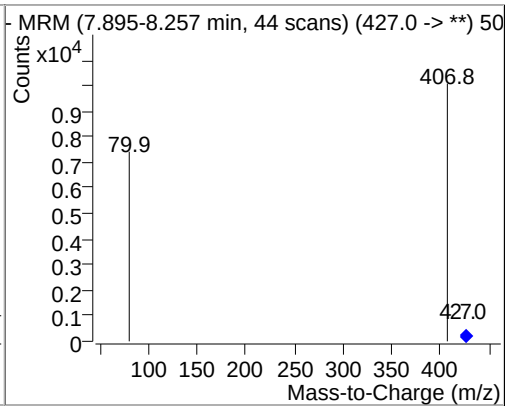




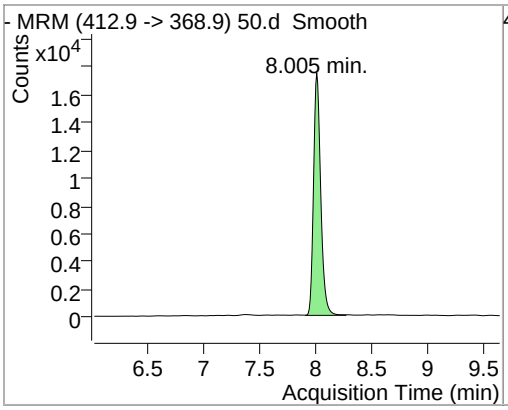
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	48086.9640	8.00	0.35	4067				

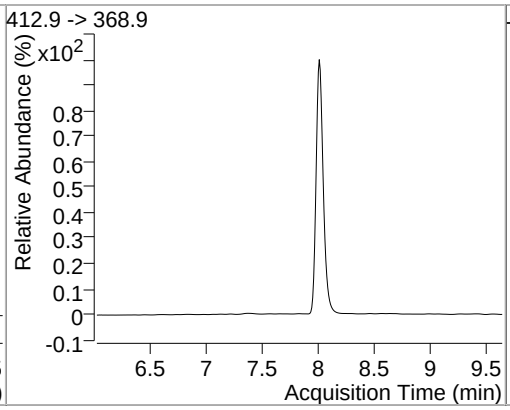


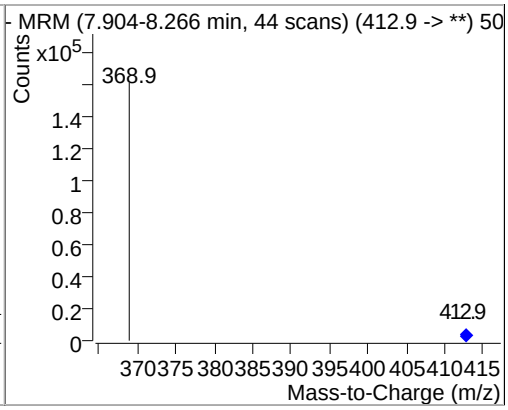




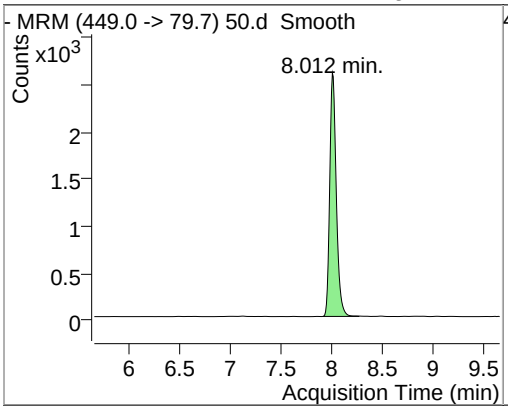
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	49021.4564	8.01	0.35	78032				

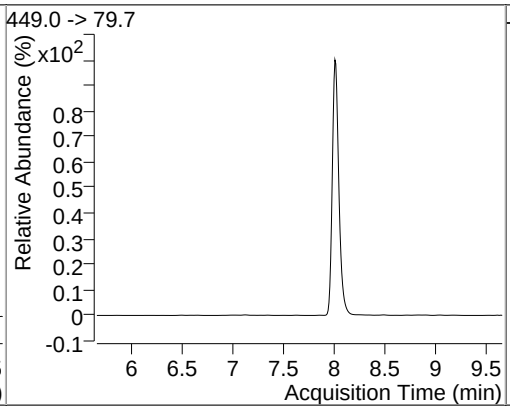


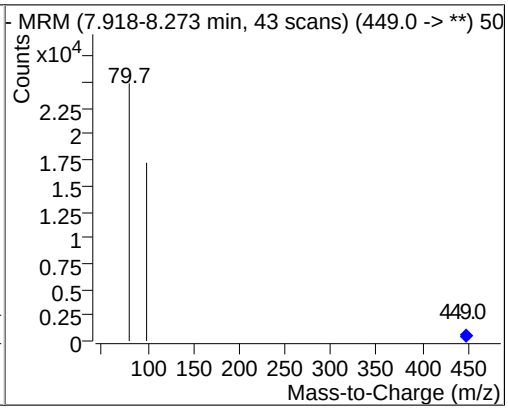




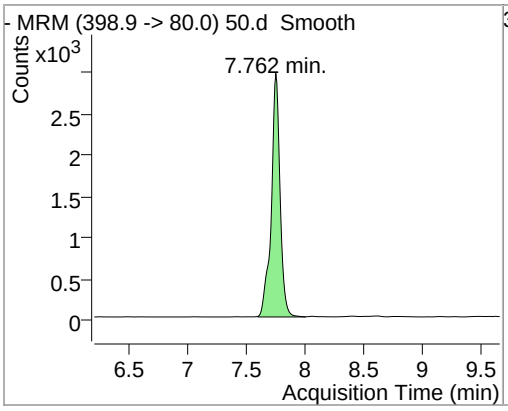
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	48095.5619	8.01	0.35	11535				

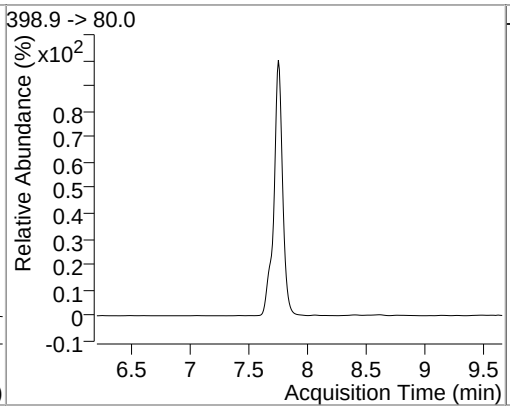


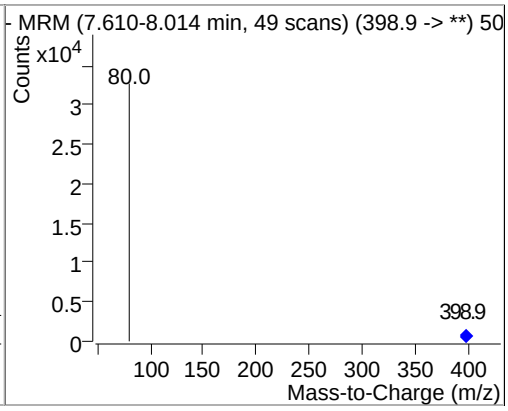




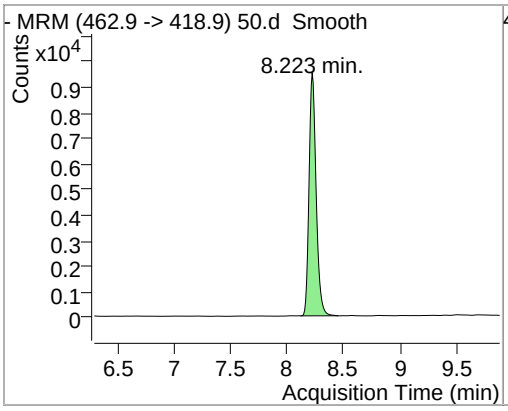
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	45485.2302	7.76	0.08	15365				

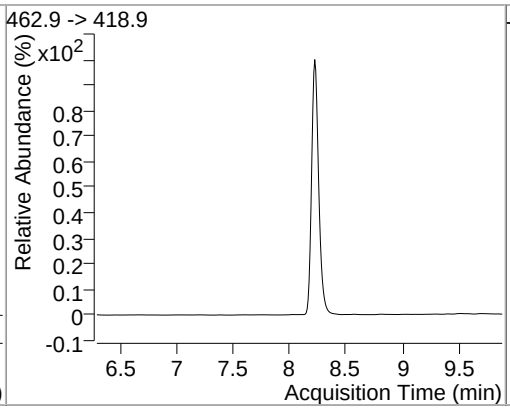


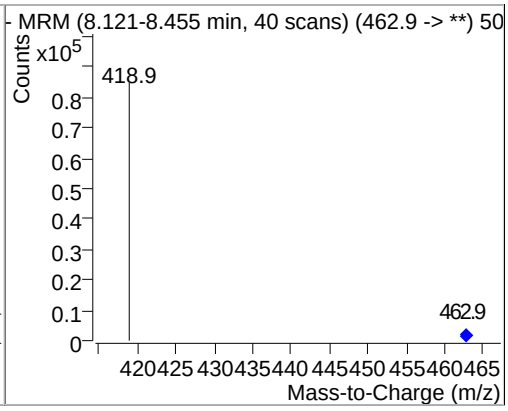




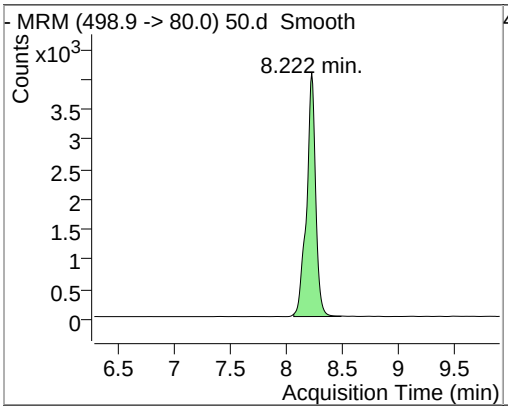
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	51323.7026	8.22	0.33	41520				

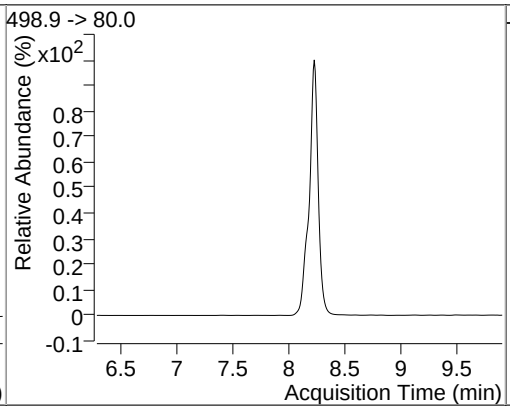


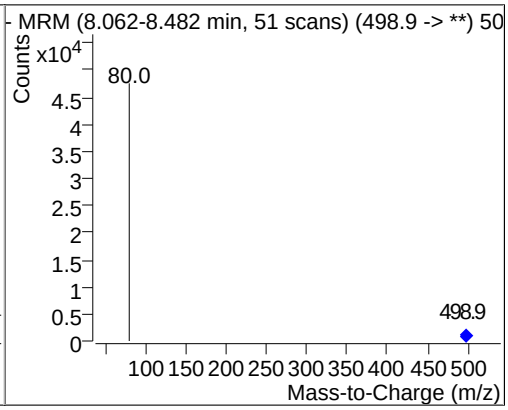




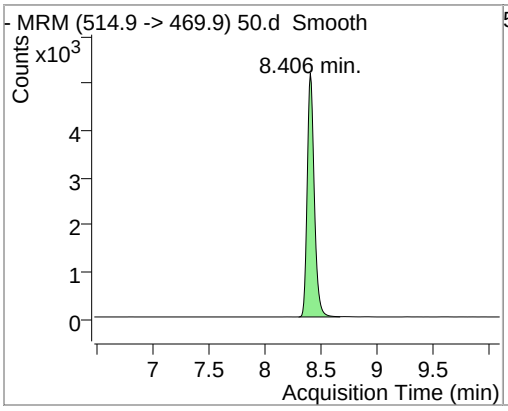
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	45106.0077	8.22	0.32	22801				

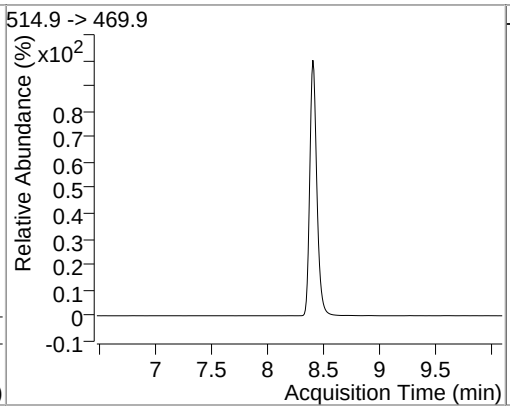


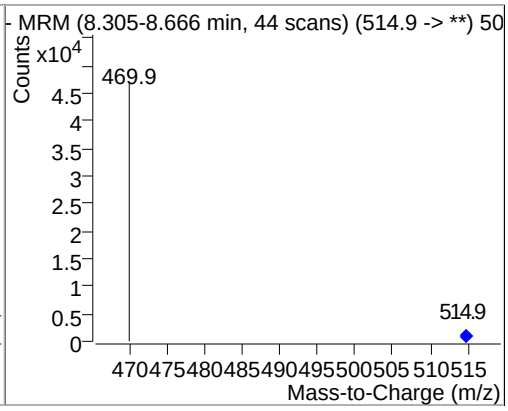




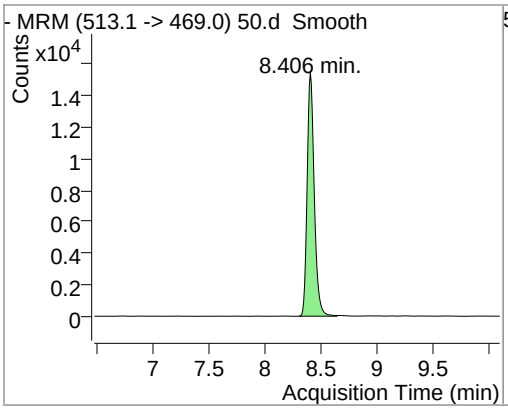
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	25078.8607	8.41	0.31	22574				

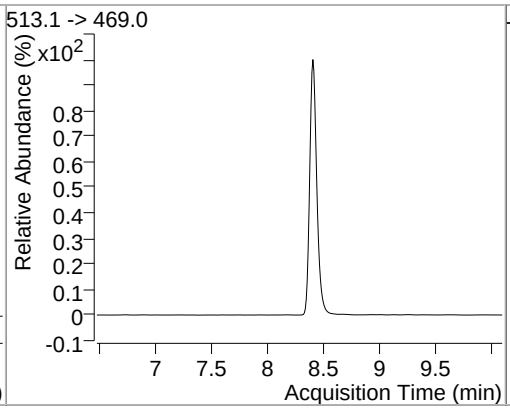


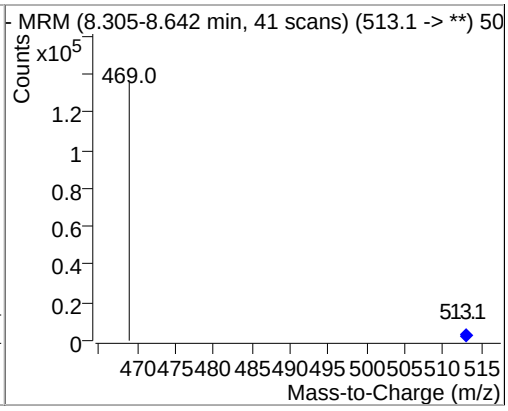




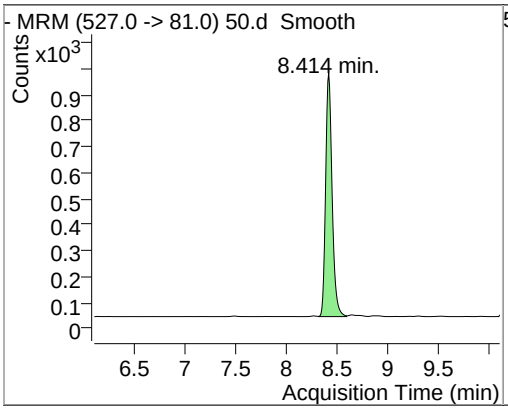
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	48929.9883	8.41	0.31	67284				

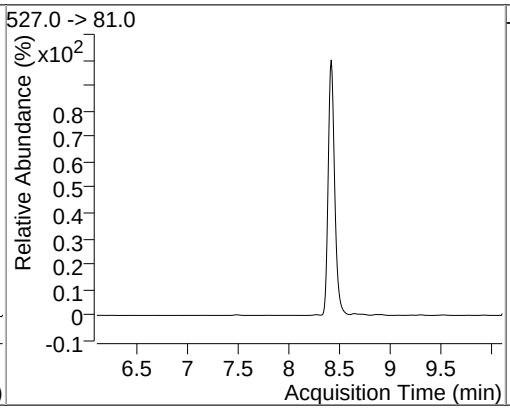


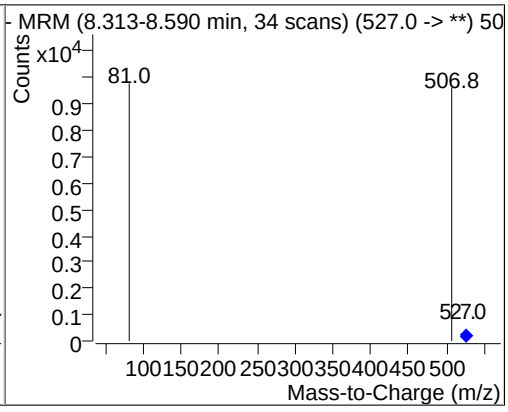




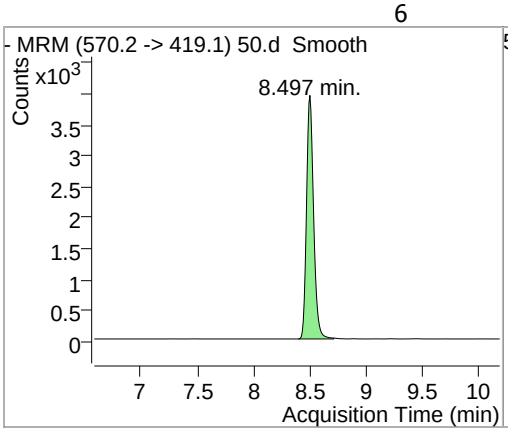
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	45829.6252	8.41	0.31	4149				

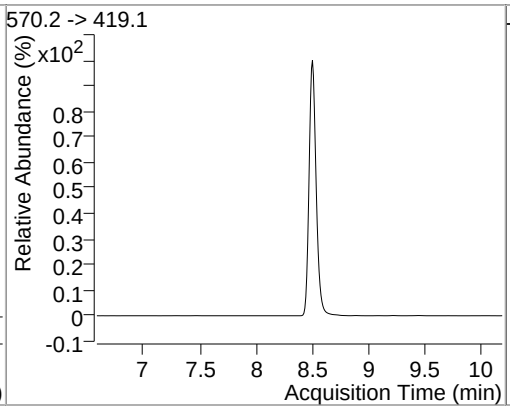


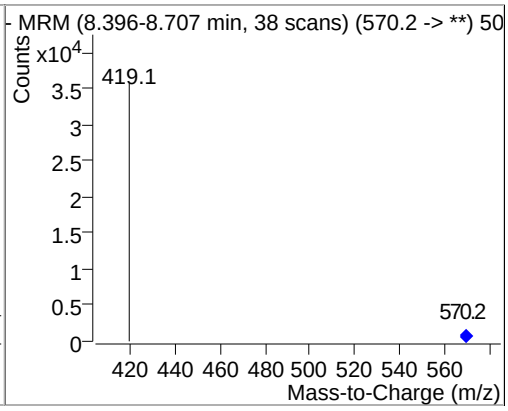




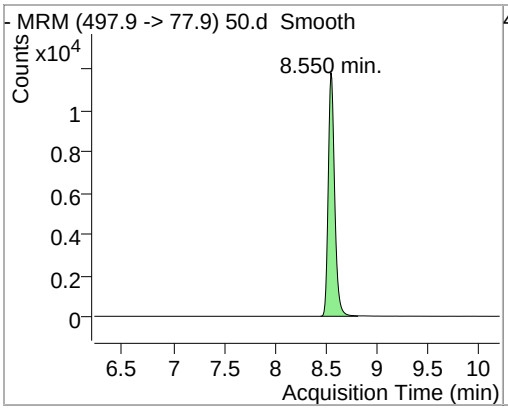
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	50229.2476	8.50	0.31	17101				

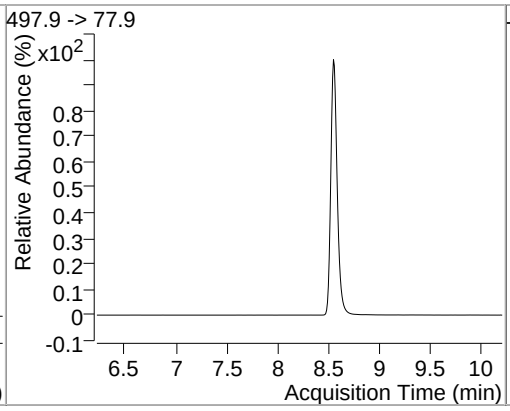


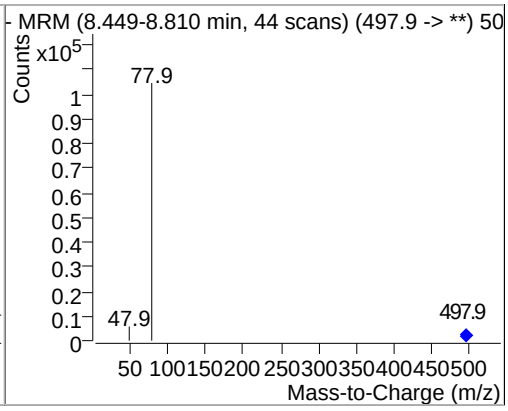




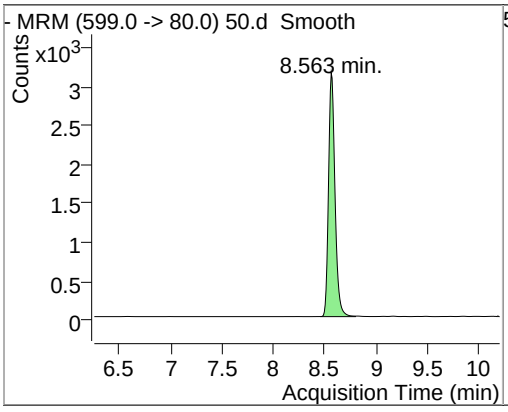
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FOSA	48988.3206	8.55	0.33	51782				

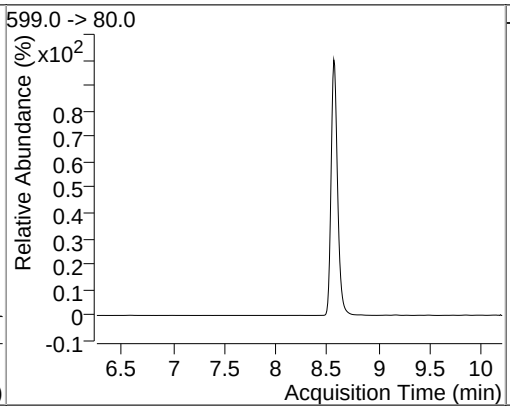


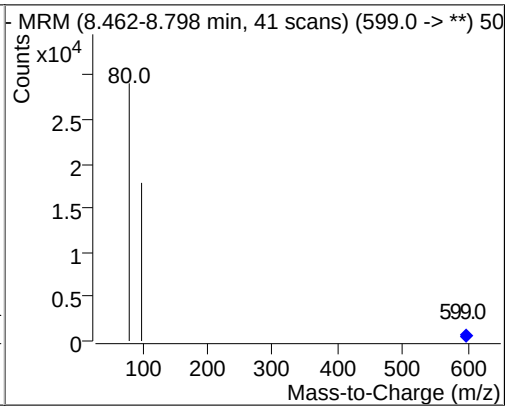




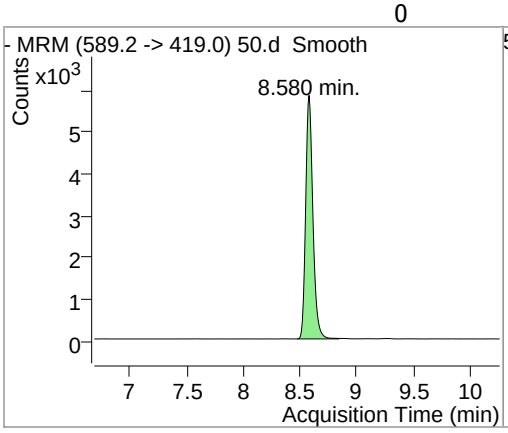
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PFDS	45784.2022	8.56	0.30	13707				

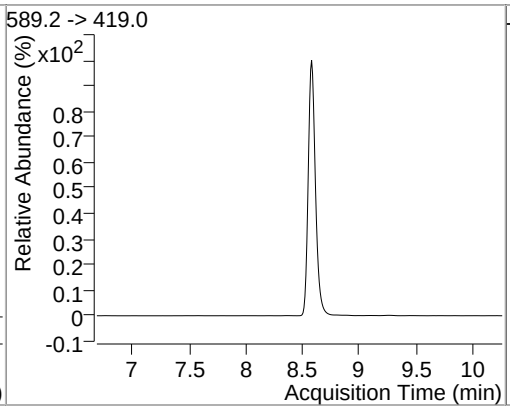


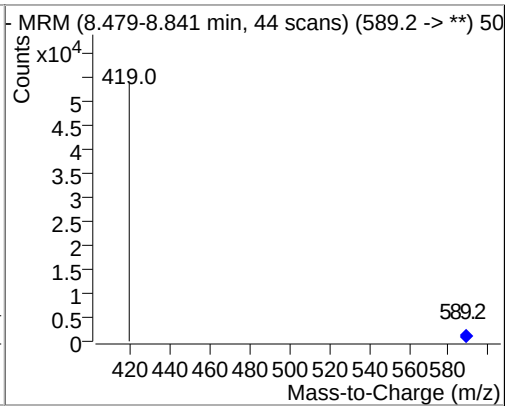




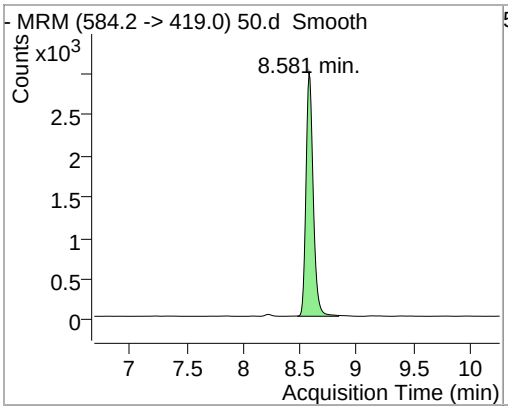
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d5-N-MeFOSAA	99290.0940	8.58	0.31	25913				

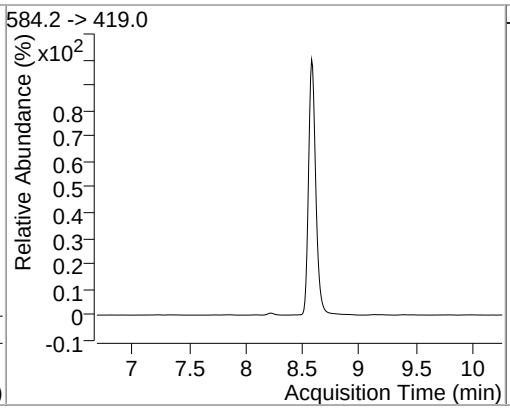


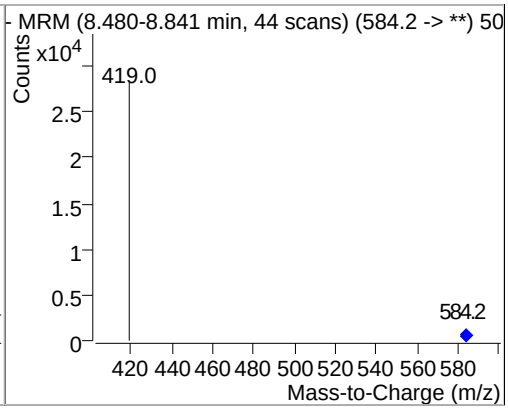




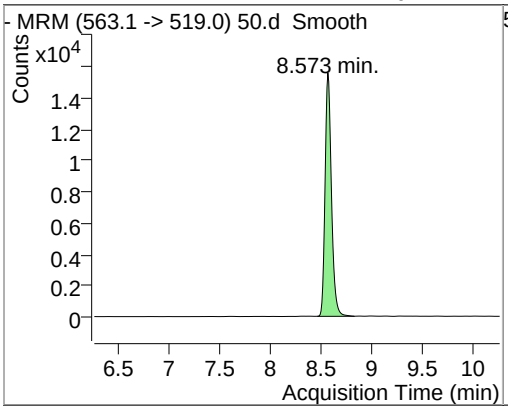
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	47588.2551	8.58	0.31	13187				

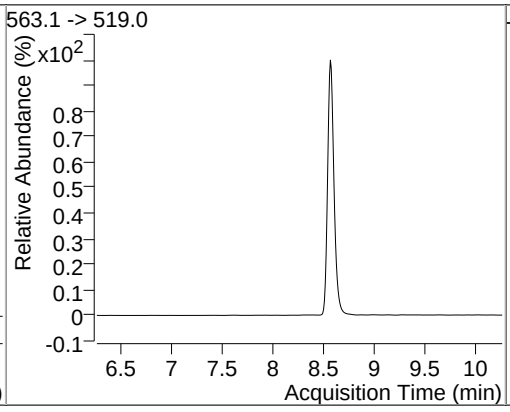


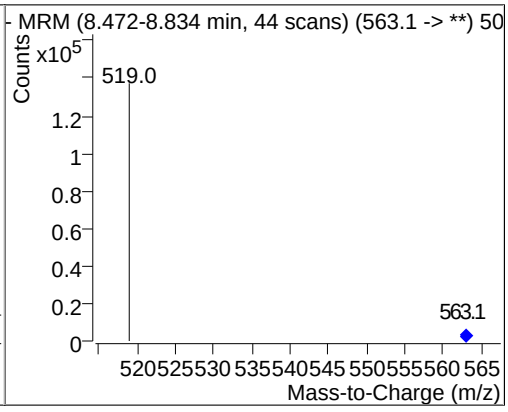




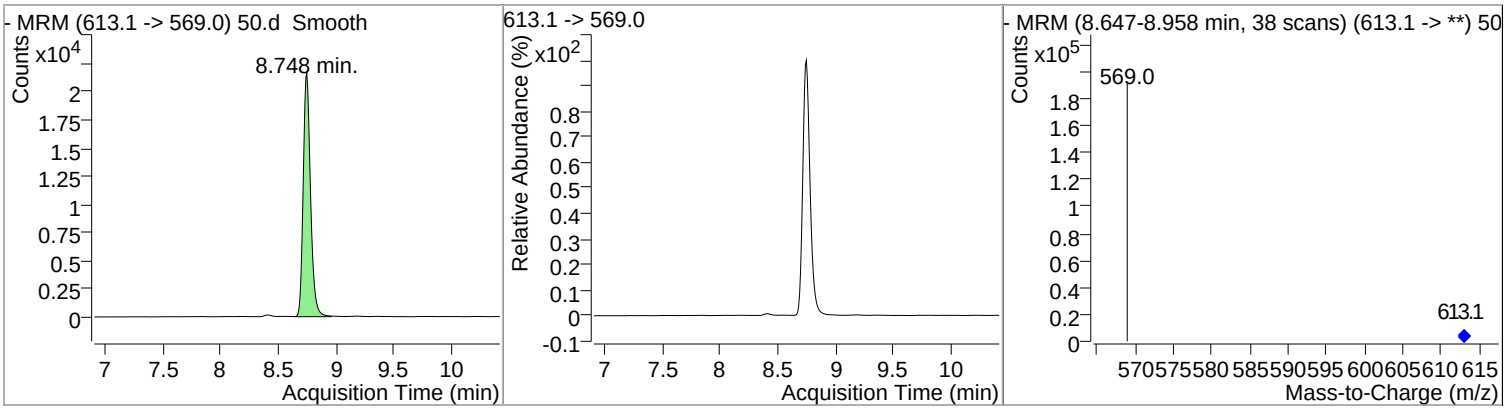
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	49039.5016	8.57	0.30	67783				



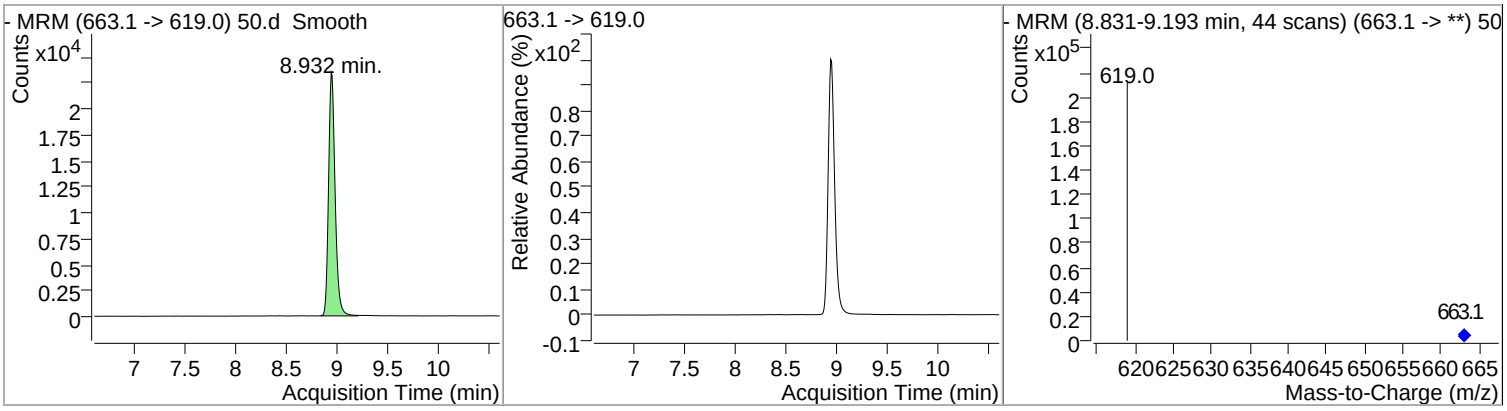




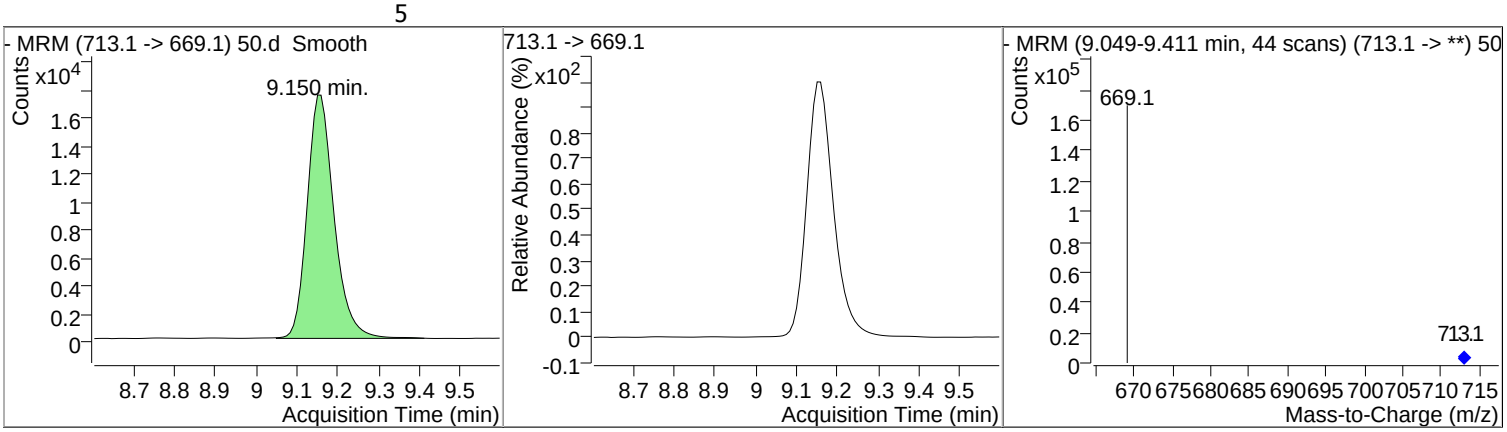
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	50719.8152	8.75	0.32	94844				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	50730.9007	8.93	0.34	104870				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	49771.7315	9.15	0.05	79405				

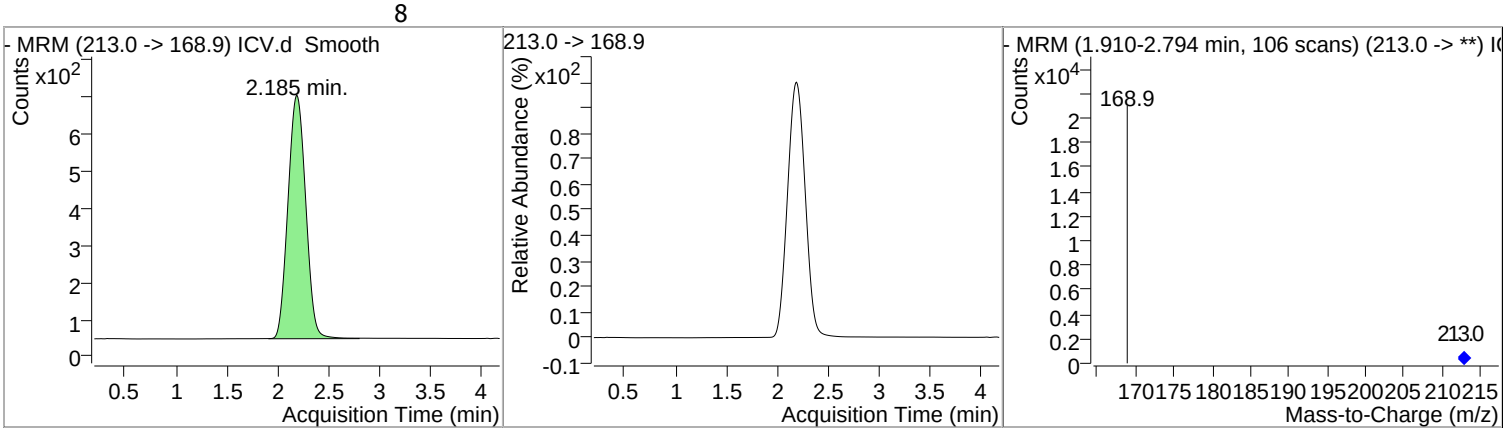


Data File	ICV.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/20/2018 10:57:08 PM
Sample Name	ICV	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

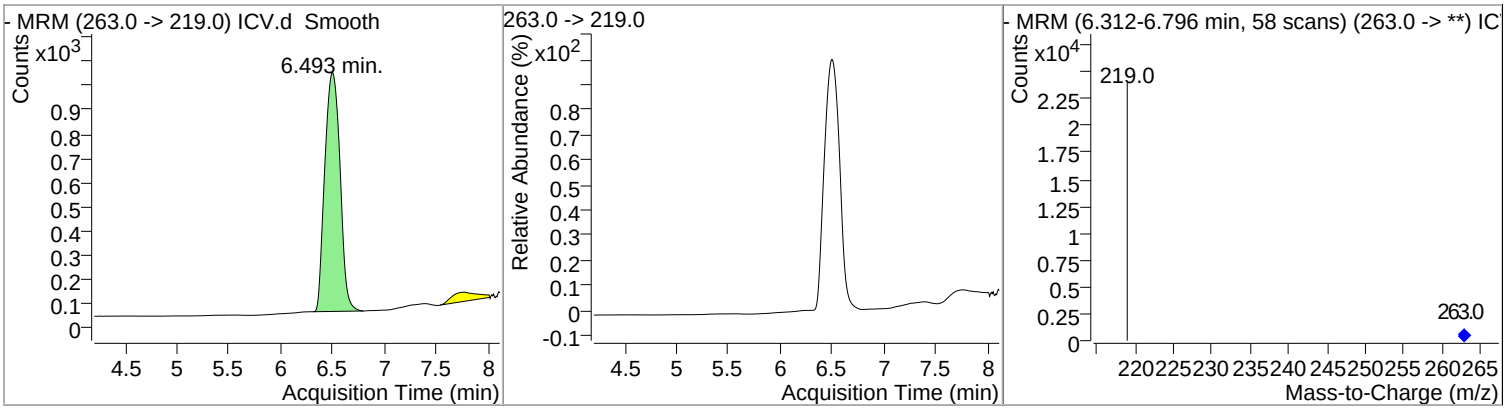
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	8.005	416.9 -> 371.9	13735	10000.0000	pg/ml		0.354
M PFOS C13	8.221	502.9 -> 80.0	11155	28700.0000	pg/ml		0.321
M d3-N-MeFOSAA	8.489	573.2 -> 419.0	10925	40000.0000	pg/ml		0.304
System Monitoring Compounds							
S PFHxA C13	7.342	314.9 -> 269.9	17066	10107.6871	pg/ml		0.404
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 101.08%			
S PFDA C13	8.406	514.9 -> 469.9	8813	9902.2067	pg/ml		0.313
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 99.02%			
S d5-N-MeFOSAA	8.580	589.2 -> 419.0	11015	46090.6571	pg/ml		0.313
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 115.23%			
Target Compounds							QValue
T PFBA	2.185	213.0 -> 168.9	7933	10295.7288	pg/ml		100
T PFPeA	6.493	263.0 -> 219.0	10113	10442.7698	pg/ml		100
T PFBS	6.863	298.9 -> 80.0	3245	8989.1108	pg/ml		100
T PFHxA	7.342	312.9 -> 268.9	15967	10291.0139	pg/ml		100
T PFHpA	7.728	362.9 -> 319.0	16995	10211.9558	pg/ml		100
T 6.2 FTS	7.996	427.0 -> 406.8	762	9281.9572	pg/ml		100
T PFOA-Total	8.005	412.9 -> 368.9	16058	10203.2306	pg/ml		100
T PFHpS	8.012	449.0 -> 79.7	2392	10279.0861	pg/ml		100
T PFHxS-Total	7.753	398.9 -> 80.0	2879	8782.8360	pg/ml		100
T PFNA	8.223	462.9 -> 418.9	8739	10925.8625	pg/ml		100
T PFOS-Total	8.222	498.9 -> 80.0	4670	9520.7142	pg/ml		100
T PFDA	8.406	513.1 -> 469.0	14393	10586.1450	pg/ml		100
T 8.2 FTS	8.414	527.0 -> 81.0	902	10273.3116	pg/ml		100
T N-MeFOSAA	8.497	570.2 -> 419.1	3234	10374.5202	pg/ml		100
T FOSA	8.550	497.9 -> 77.9	10996	11359.7956	pg/ml		100
T PFDS	8.563	599.0 -> 80.0	2926	10073.4505	pg/ml		100
T N-EtFOSAA	8.581	584.2 -> 419.0	3009	11857.9901	pg/ml		100
T PFUnA	8.573	563.1 -> 519.0	14743	10788.1223	pg/ml		100
T PFDoA	8.748	613.1 -> 569.0	17705	9576.1844	pg/ml		100
T PFTrDA	8.932	663.1 -> 619.0	20926	10238.4398	pg/ml		100
T PFTA	9.159	713.1 -> 669.1	16939	10738.9997	pg/ml	m	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

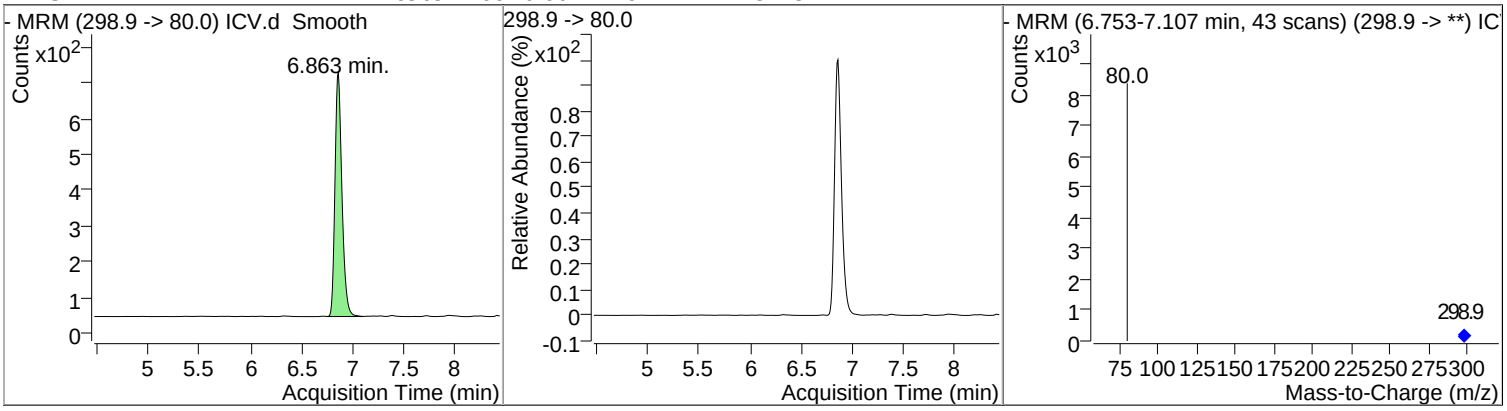
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	10295.7288	2.19	0.01	7933				



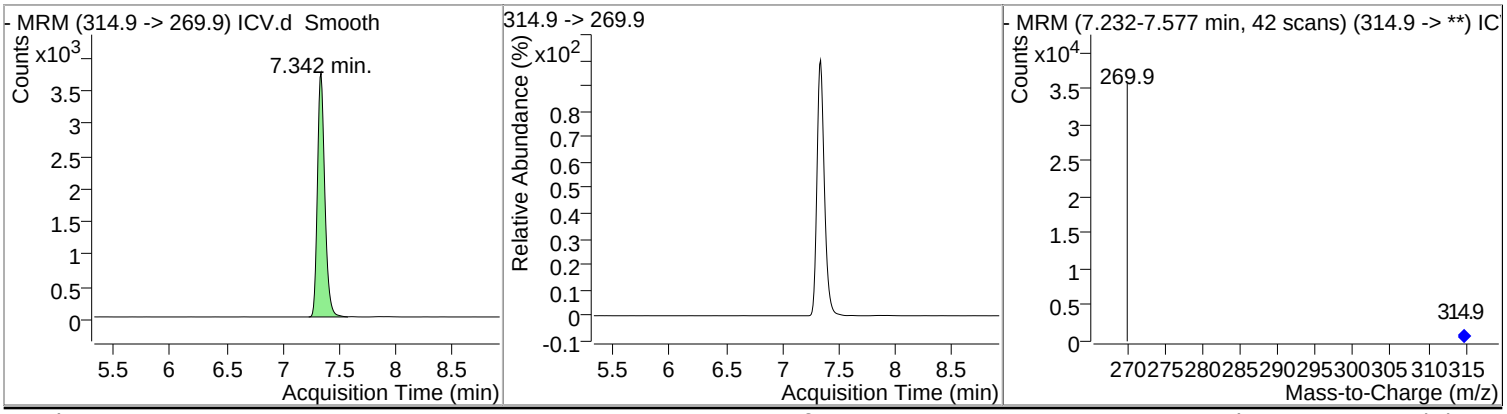
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	10442.7698	6.49	0.38	10113				



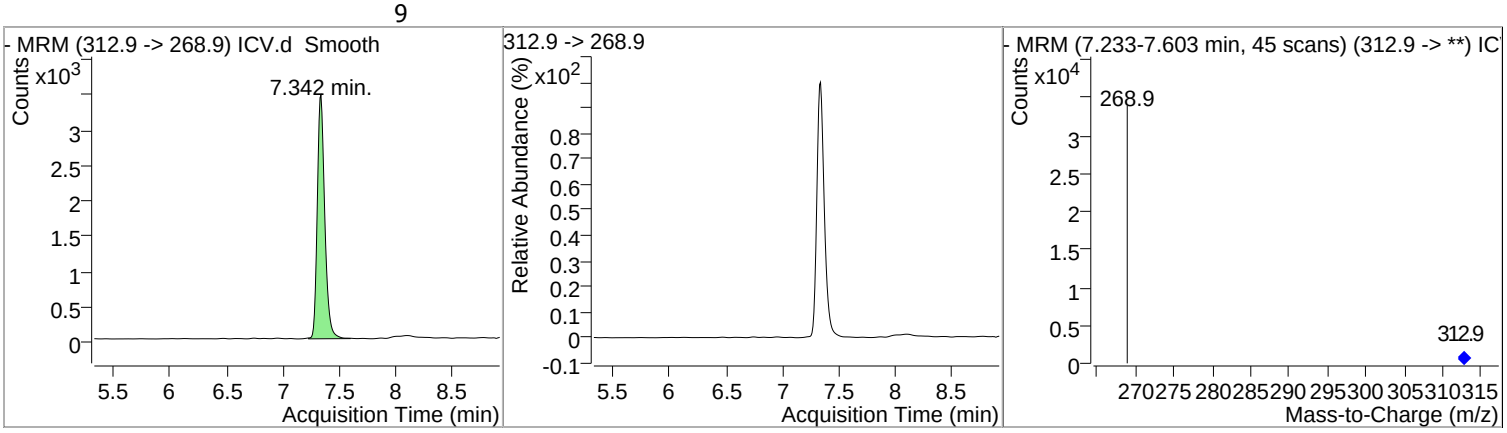
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	8989.1108	6.86	0.41	3245				



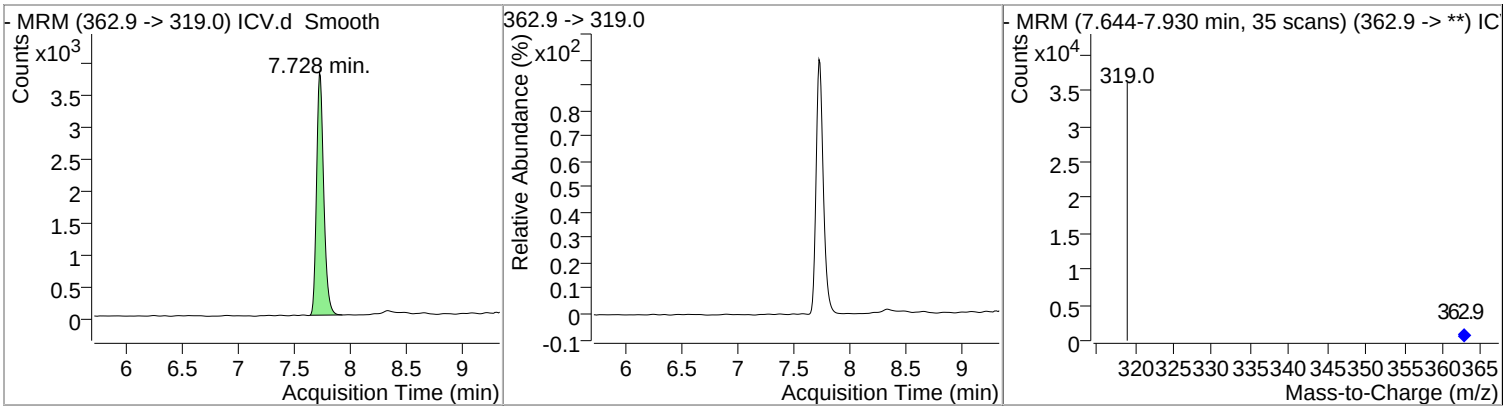
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	10107.6871	7.34	0.40	17066				



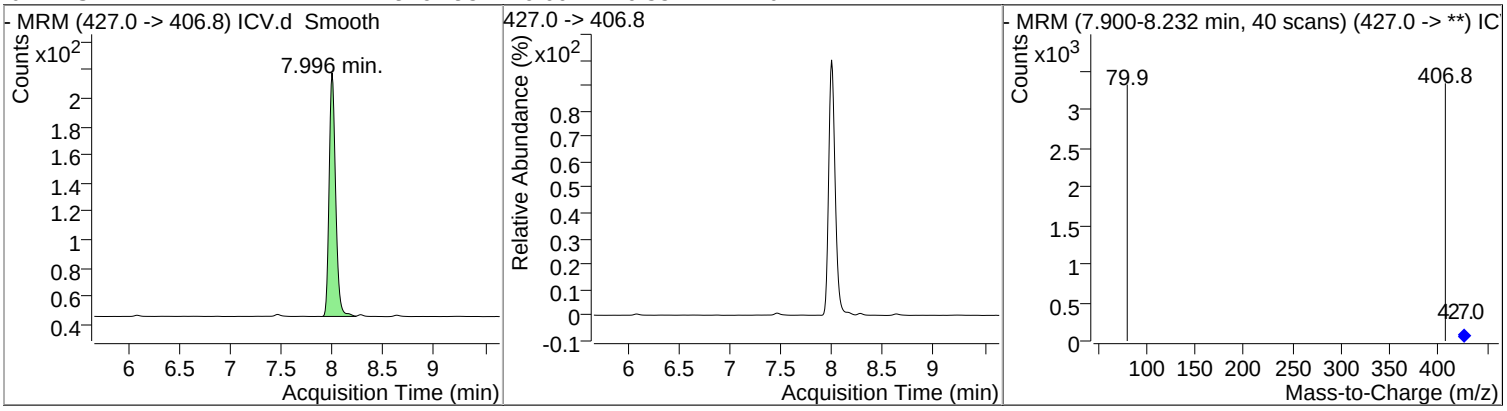
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PFHxA	10291.0139	7.34	0.40	15967				



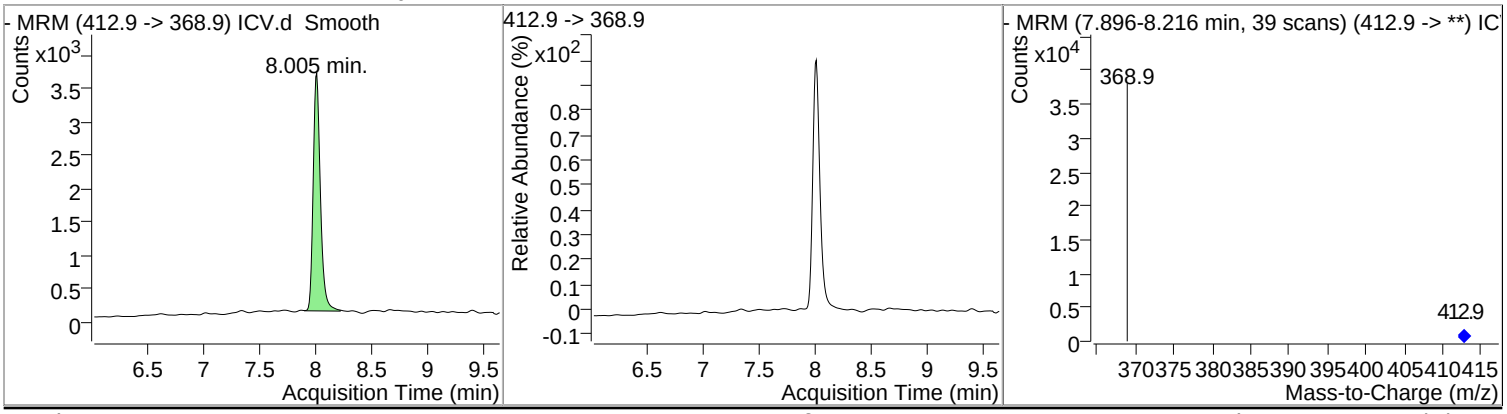
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	10211.9558	7.73	0.38	16995				



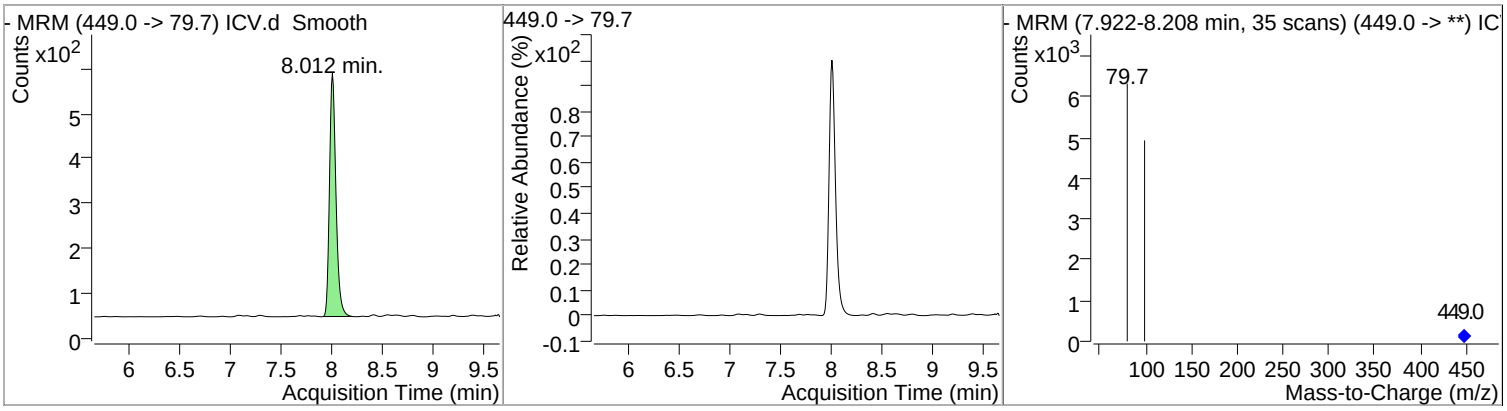
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	9281.9572	8.00	0.35	762				



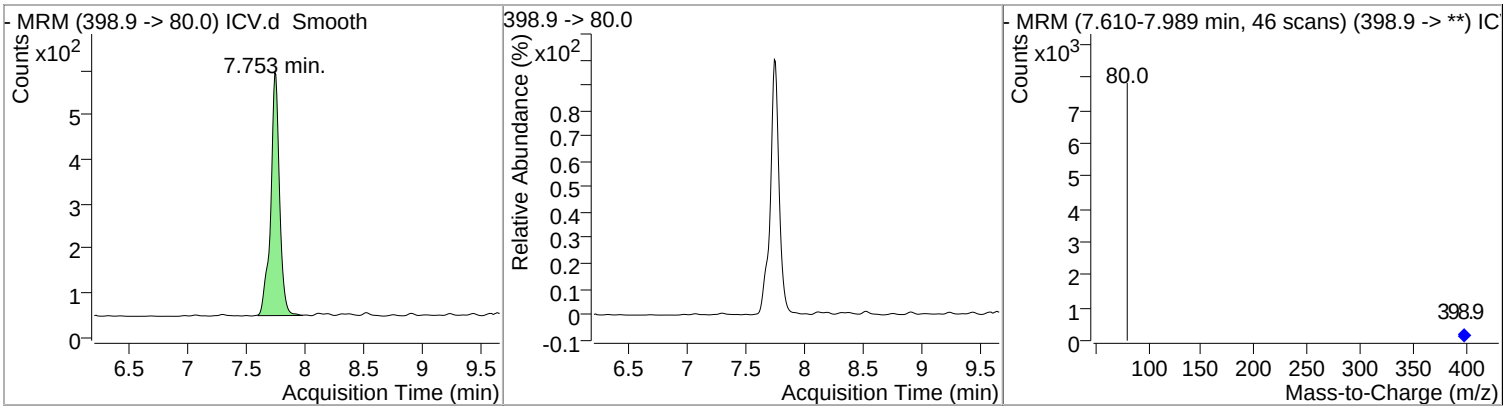
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	10203.2306	8.01	0.35	16058				



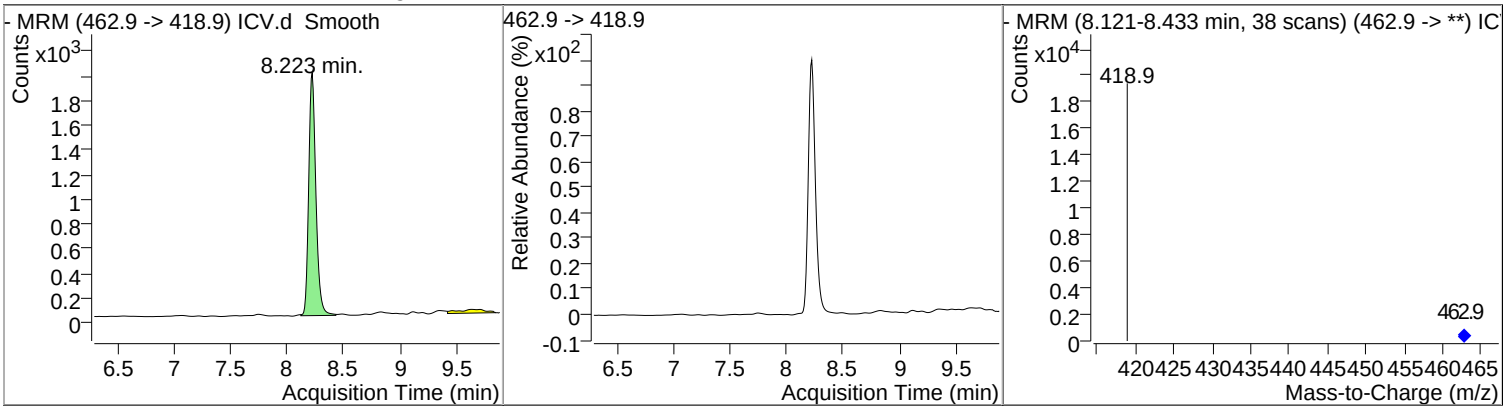
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	10279.0861	8.01	0.35	2392				



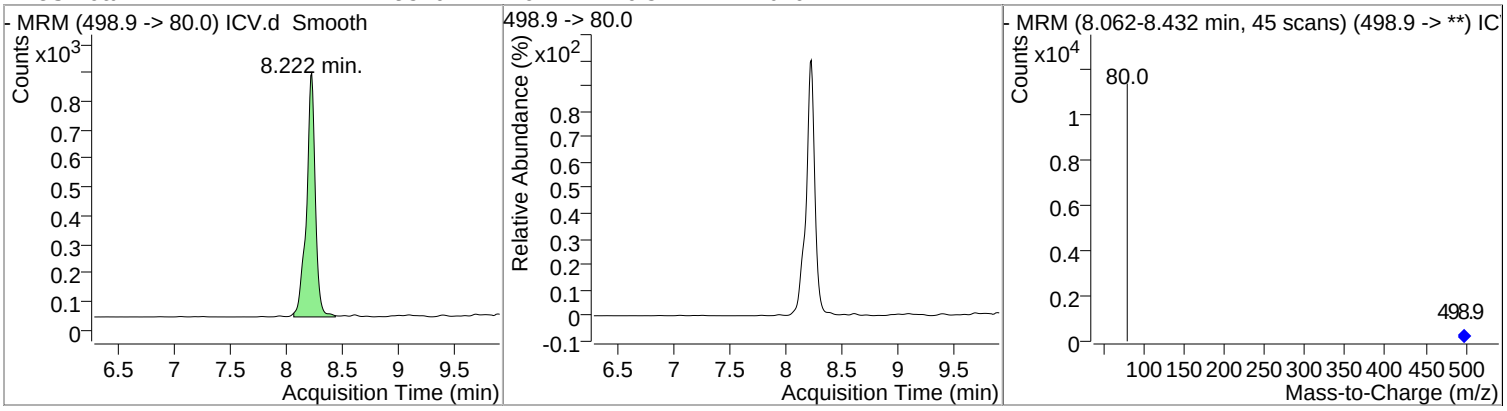
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	8782.8360	7.75	0.08	2879				



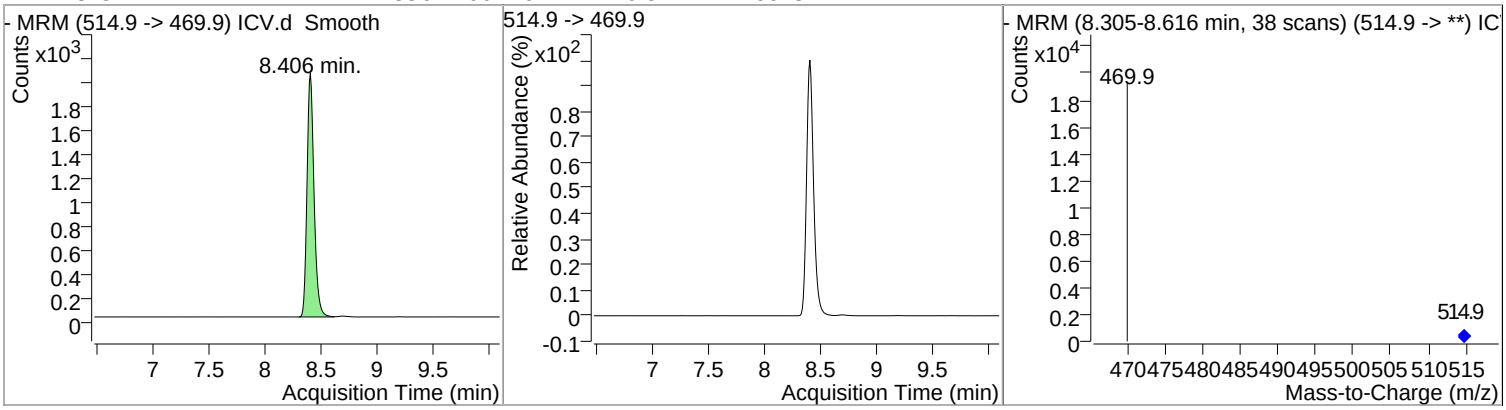
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	10925.8625	8.22	0.33	8739				



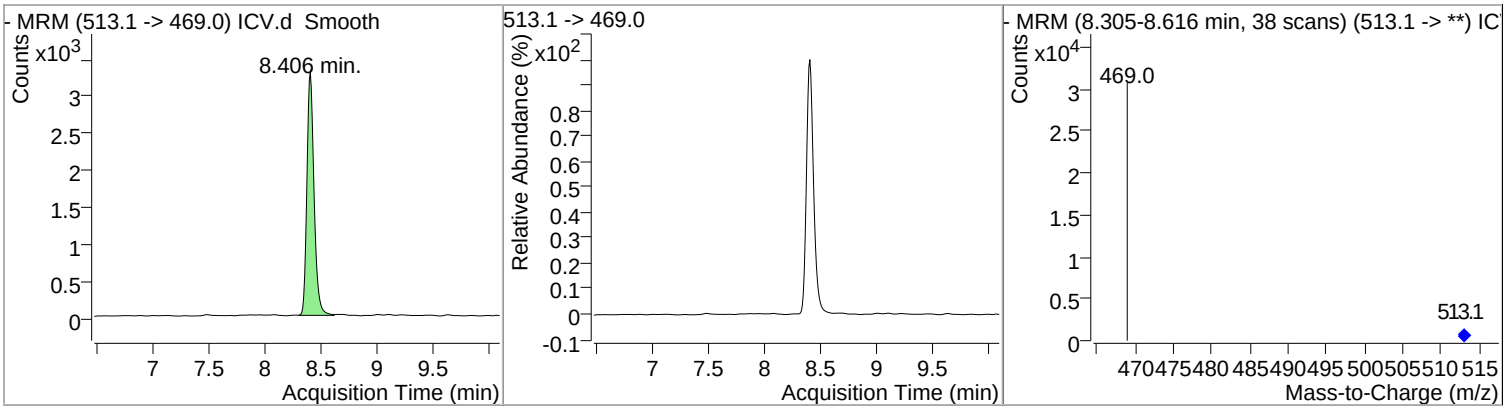
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	9520.7142	8.22	0.32	4670				



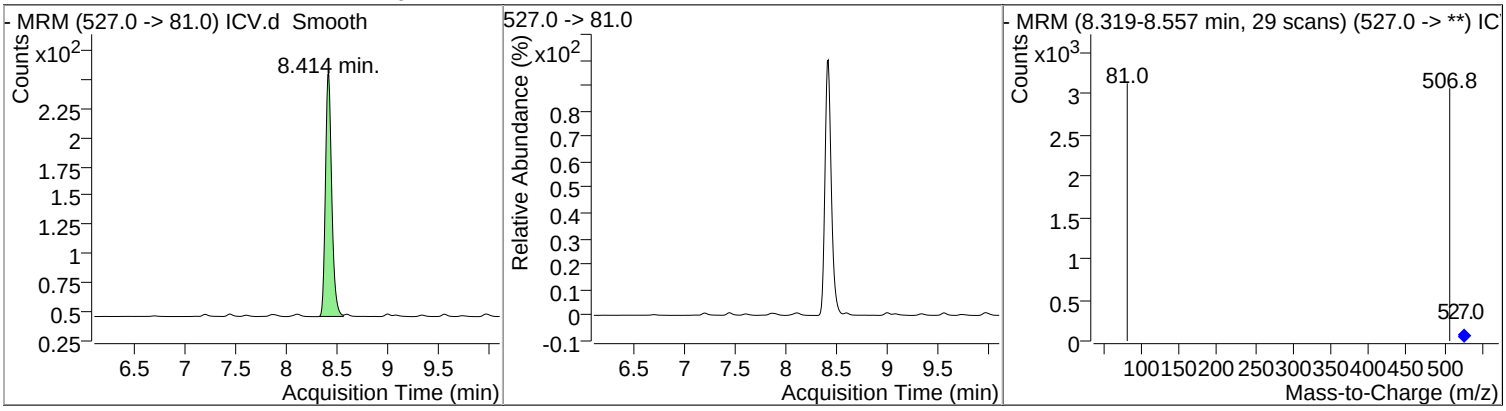
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	9902.2067	8.41	0.31	8813				



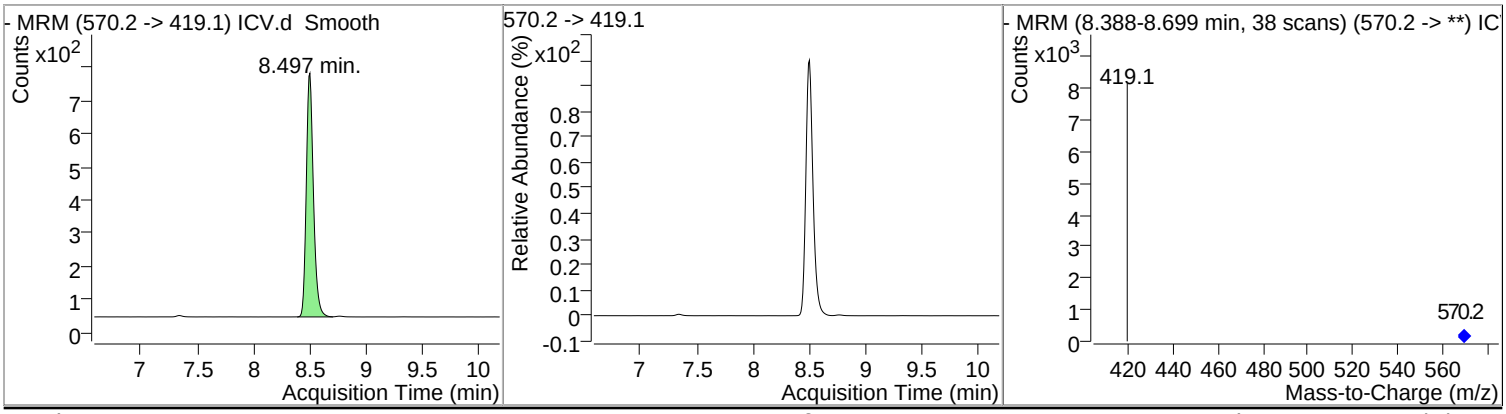
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	10586.1450	8.41	0.31	14393				



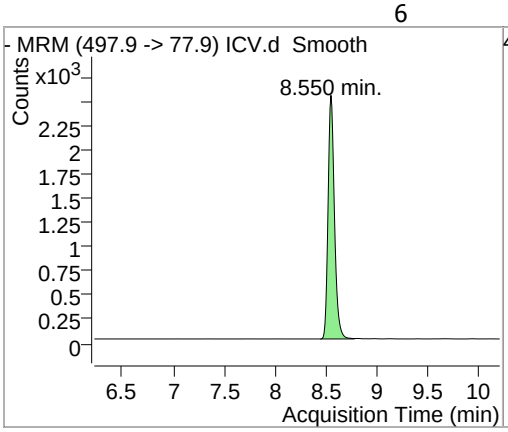
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	10273.3116	8.41	0.31	902				

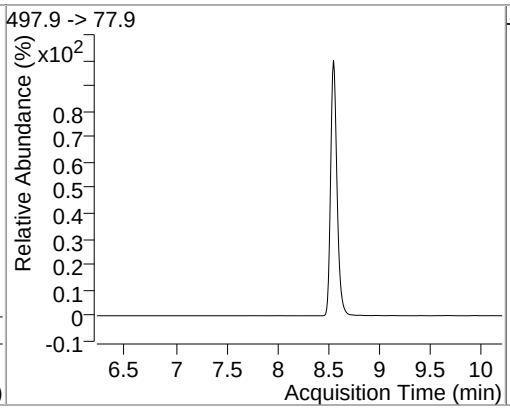


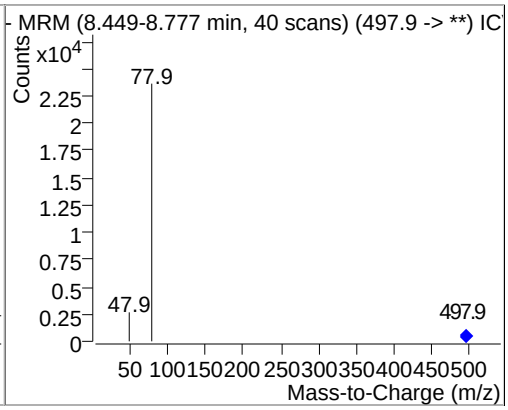
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	10374.5202	8.50	0.31	3234				



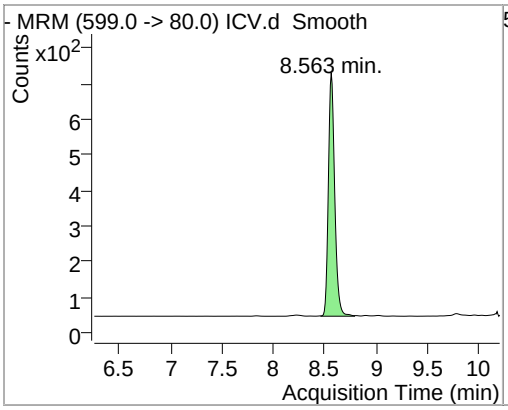
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	11359.7956	8.55	0.33	10996				

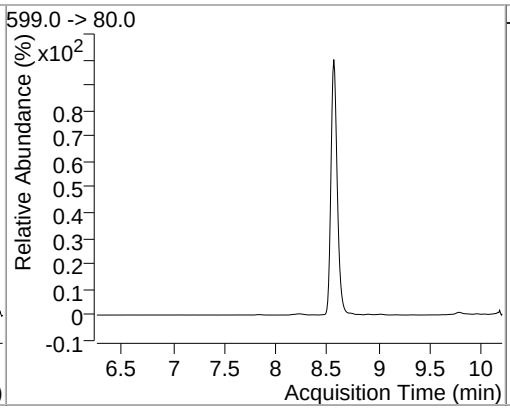


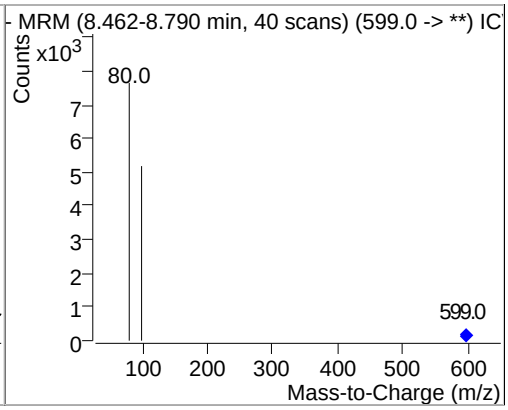




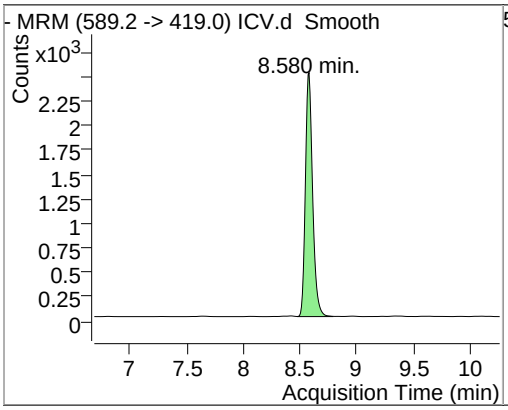
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	10073.4505	8.56	0.30	2926				

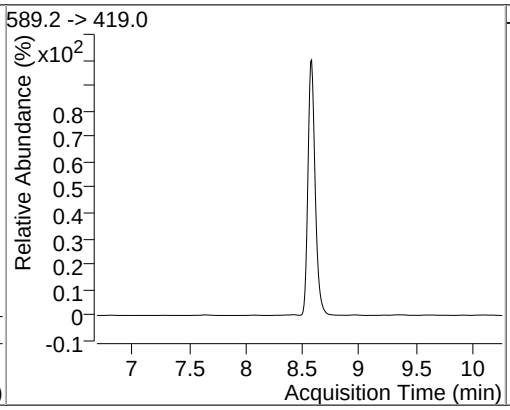


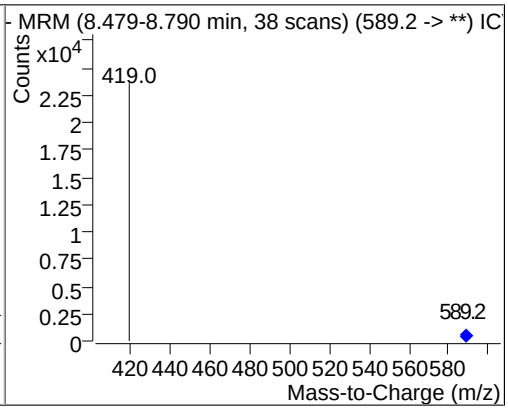




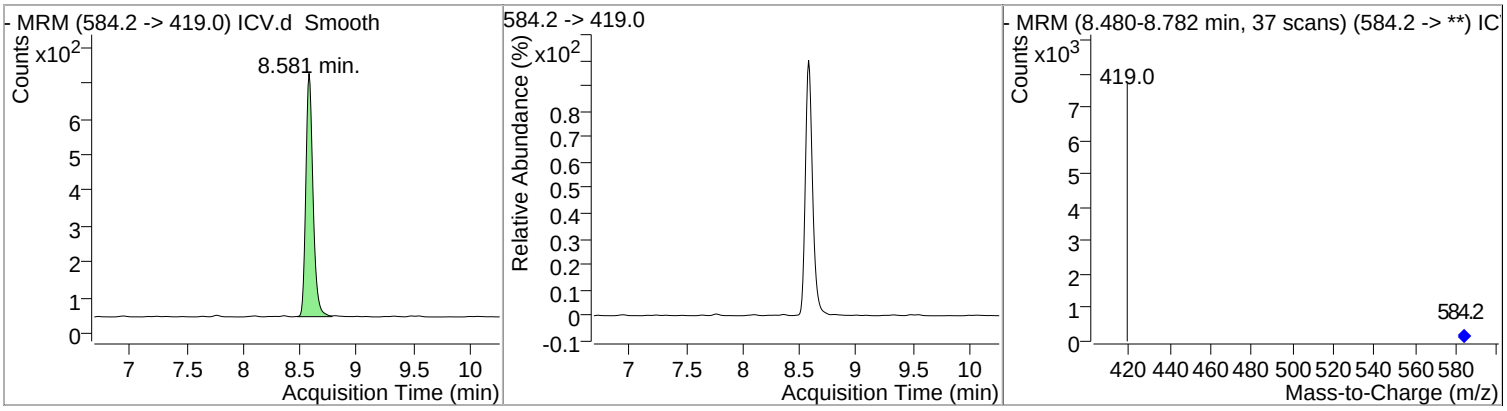
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	46090.6571	8.58	0.31	11015				



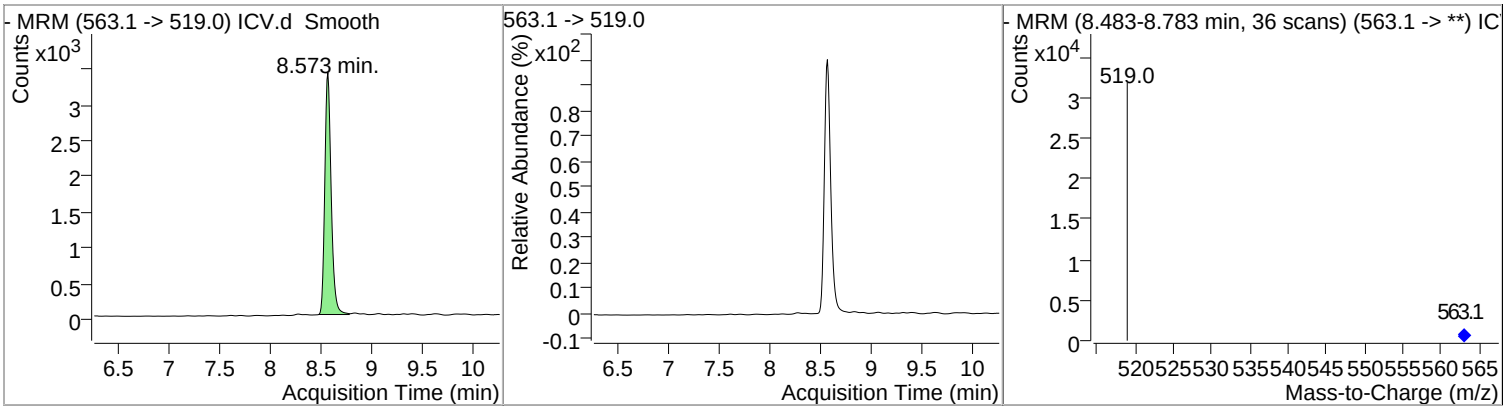




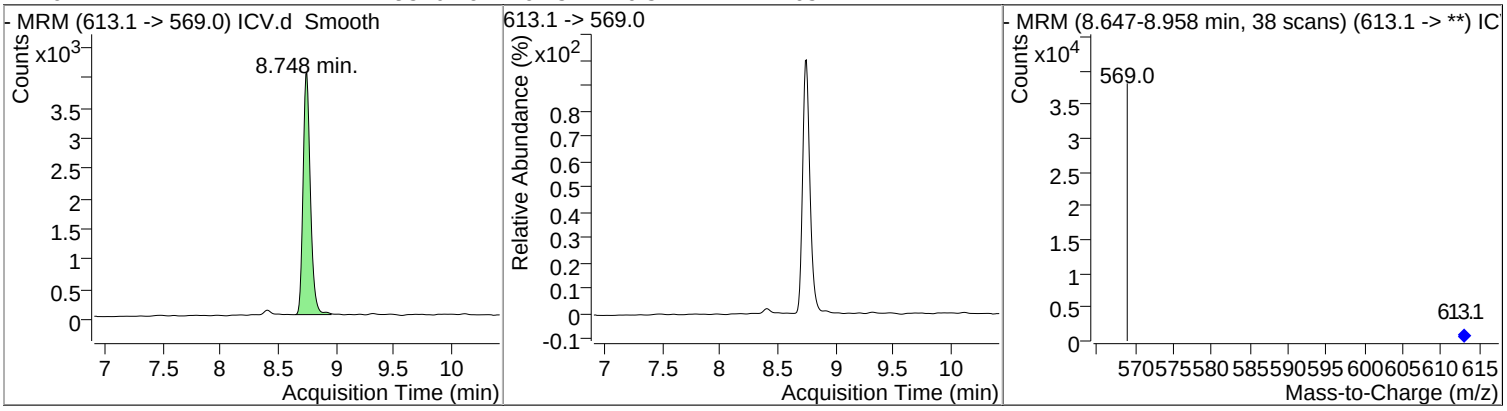
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	11857.9901	8.58	0.31	3009				



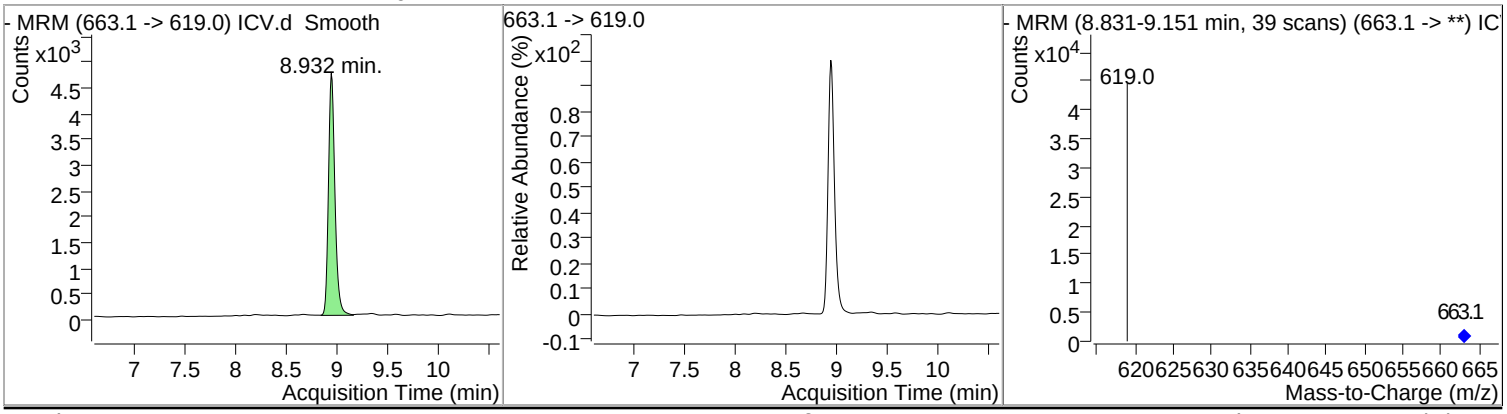
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	10788.1223	8.57	0.30	14743				



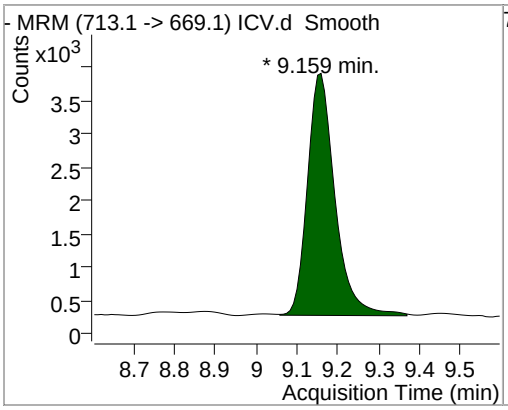
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	9576.1844	8.75	0.32	17705				

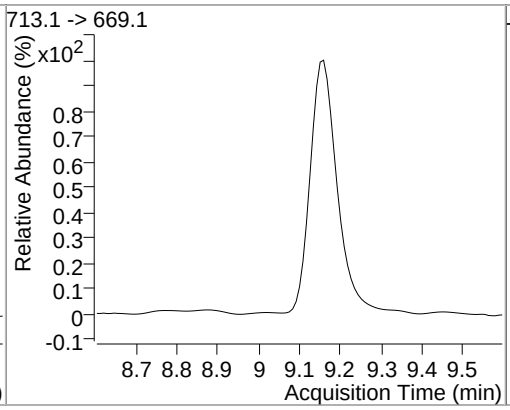


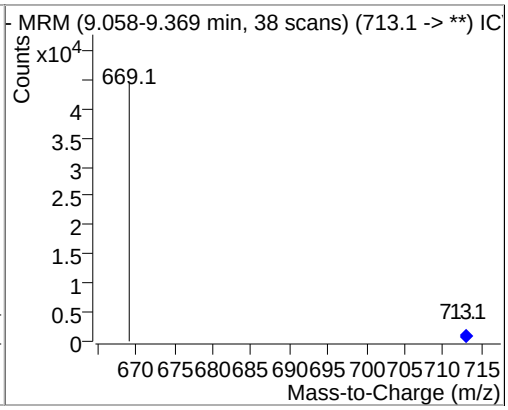
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	10238.4398	8.93	0.34	20926				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	10738.9997	9.16	0.06	16939 (m)				





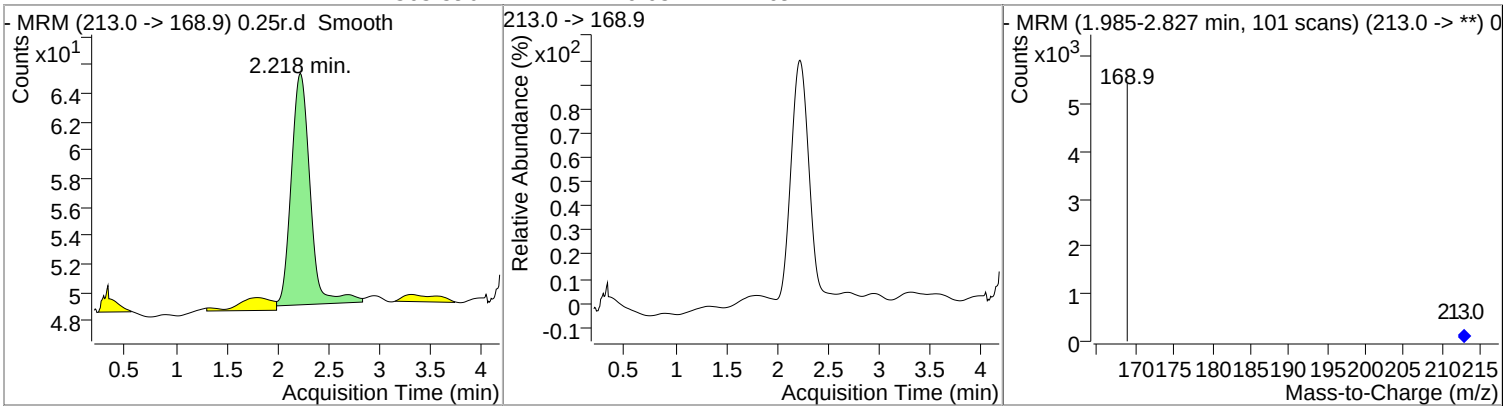


Data File	0.25r.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/21/2018 12:51:06 PM
Sample Name	0.25	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

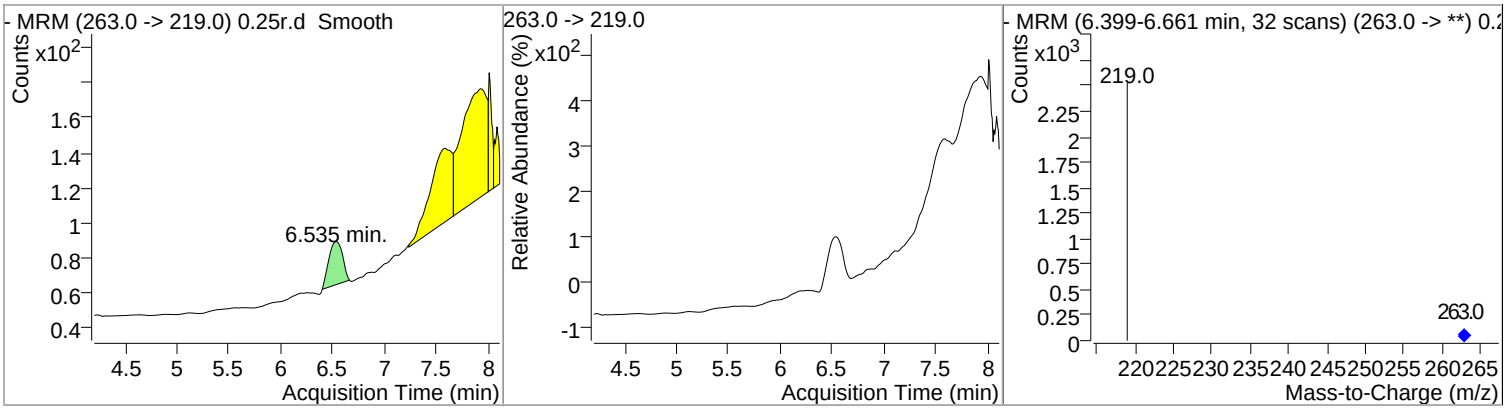
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	8.013	416.9 -> 371.9	12272	10000.0000	pg/ml		0.363
M PFOS C13	8.221	502.9 -> 80.0	9622	28700.0000	pg/ml		0.321
M d3-N-MeFOSAA	8.497	573.2 -> 419.0	11348	40000.0000	pg/ml		0.312
System Monitoring Compounds							
S PFHxA C13	7.358	314.9 -> 269.9	3165	2097.8431	pg/ml		0.421
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 20.98%		*	
S PFDA C13	8.406	514.9 -> 469.9	1432	1800.9644	pg/ml		0.313
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 18.01%		*	
S d5-N-MeFOSAA	8.580	589.2 -> 419.0	2174	8758.4592	pg/ml		0.313
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 21.90%		*	
Target Compounds							QValue
T PFBA	2.218	213.0 -> 168.9	209	303.5964	pg/ml		100
T PFPeA	6.535	263.0 -> 219.0	228	263.2689	pg/ml		100
T PFBS	6.888	298.9 -> 80.0	93	300.1391	pg/ml	m	100
T PFHxA	7.359	312.9 -> 268.9	344	248.0797	pg/ml	m	100
T PFHpA	7.745	362.9 -> 319.0	272	182.7124	pg/ml	m	100
T 6.2 FTS	8.005	427.0 -> 406.8	10	147.0428	pg/ml	m	100
T PFOA-Total	8.014	412.9 -> 368.9	567	403.4725	pg/ml	m	100
T PFHpS	8.021	449.0 -> 79.7	70	349.8785	pg/ml	m	100
T PFHxS-Total	7.779	398.9 -> 80.0	72	255.4219	pg/ml		100
T PFNA	7.911	462.9 -> 418.9	127	177.9285	pg/ml		100
T PFOS-Total	8.222	498.9 -> 80.0	178	419.7239	pg/ml	m	100
T PFDA	8.406	513.1 -> 469.0	334	275.2602	pg/ml	m	100
T 8.2 FTS	8.405	527.0 -> 81.0	27	352.2405	pg/ml	m	100
T N-MeFOSAA	8.497	570.2 -> 419.1	115	356.2082	pg/ml		100
T FOSA	8.558	497.9 -> 77.9	315	312.8164	pg/ml		100
T PFDS	8.571	599.0 -> 80.0	90	358.3236	pg/ml	m	100
T N-EtFOSAA	8.589	584.2 -> 419.0	90	342.0878	pg/ml	m	100
T PFUnA	8.573	563.1 -> 519.0	390	319.0792	pg/ml	m	100
T PFDoA	8.748	613.1 -> 569.0	585	353.9842	pg/ml	m	100
T PFTrDA	8.932	663.1 -> 619.0	426	233.1141	pg/ml	m	100
T PFTA	9.167	713.1 -> 669.1	533	378.2262	pg/ml	m	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

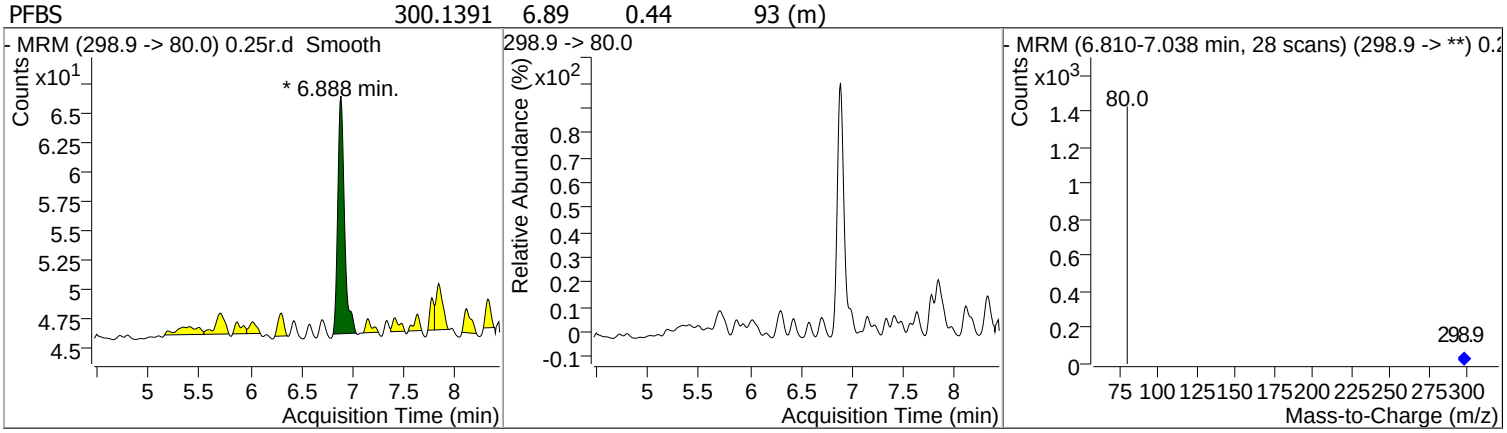
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	303.5964	2.22	0.05	209				



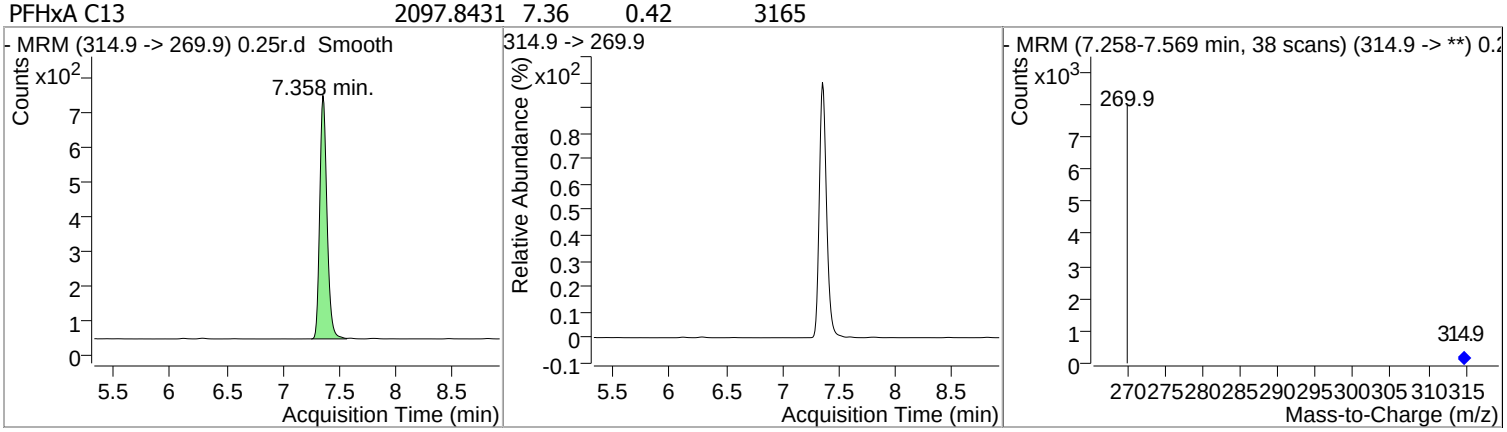
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	263.2689	6.54	0.43	228				



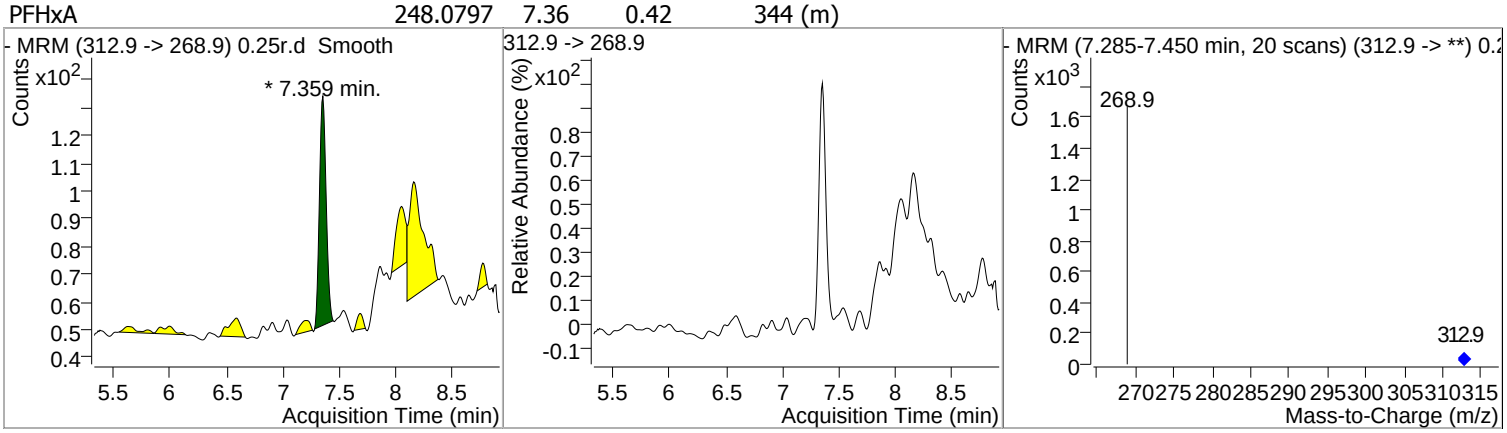
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	300.1391	6.89	0.44	93 (m)				



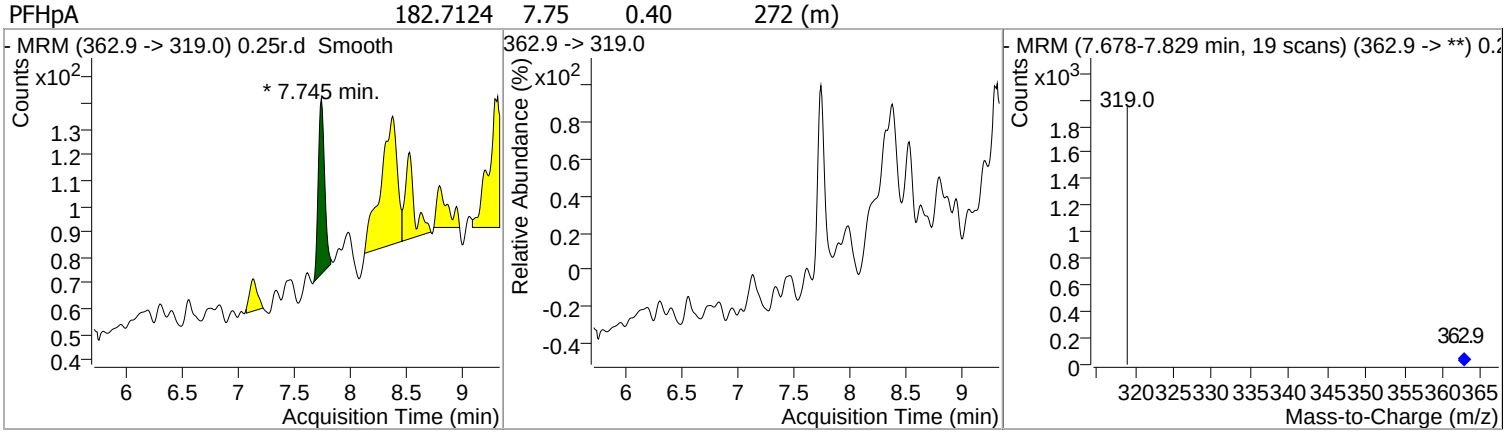
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	2097.8431	7.36	0.42	3165				



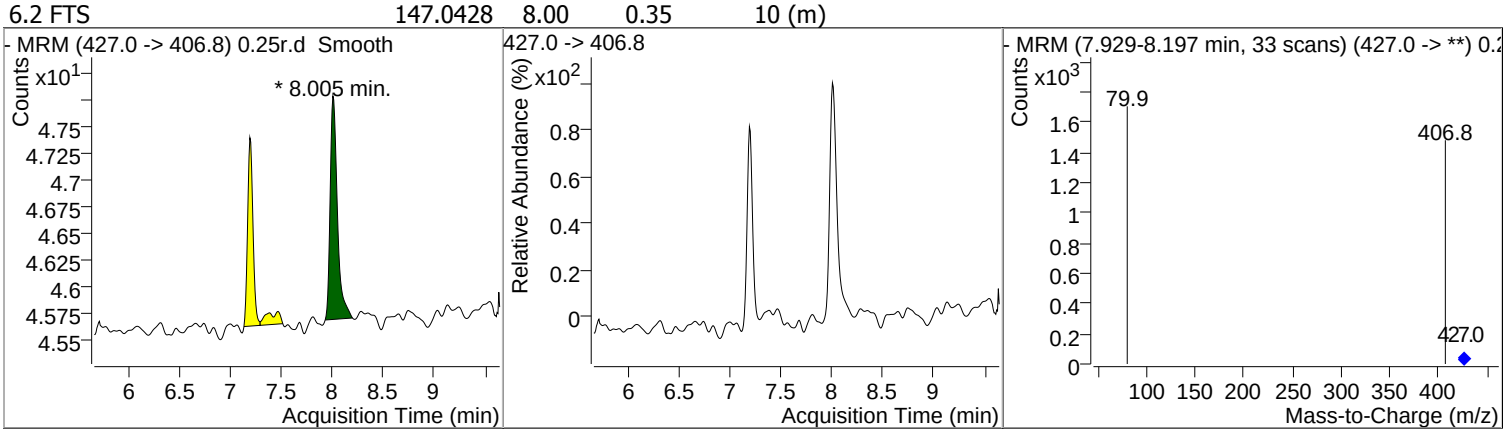
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	248.0797	7.36	0.42	344 (m)				



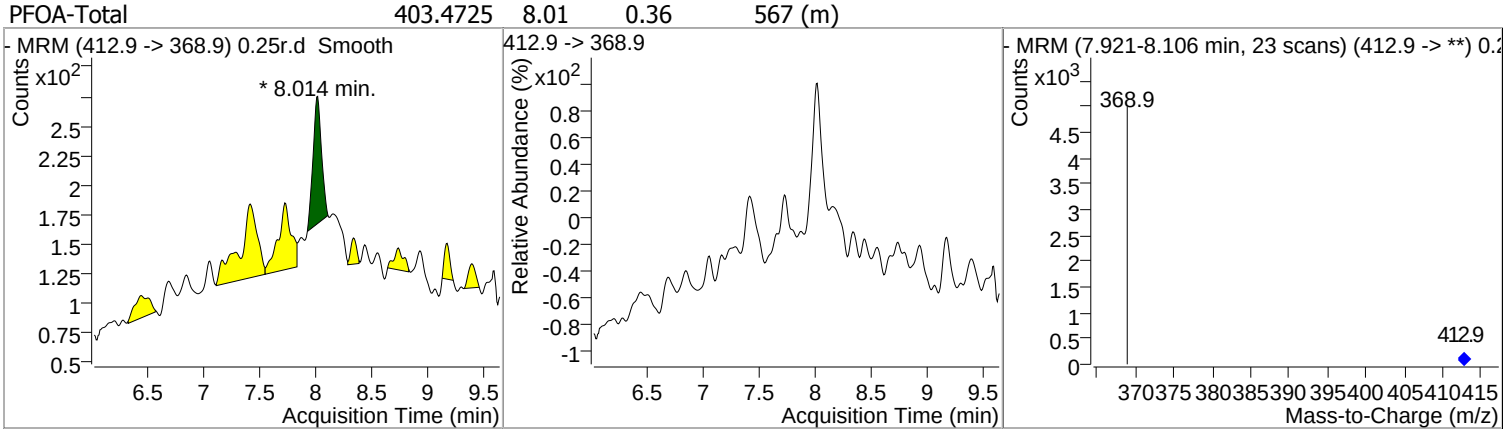
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	182.7124	7.75	0.40	272 (m)				



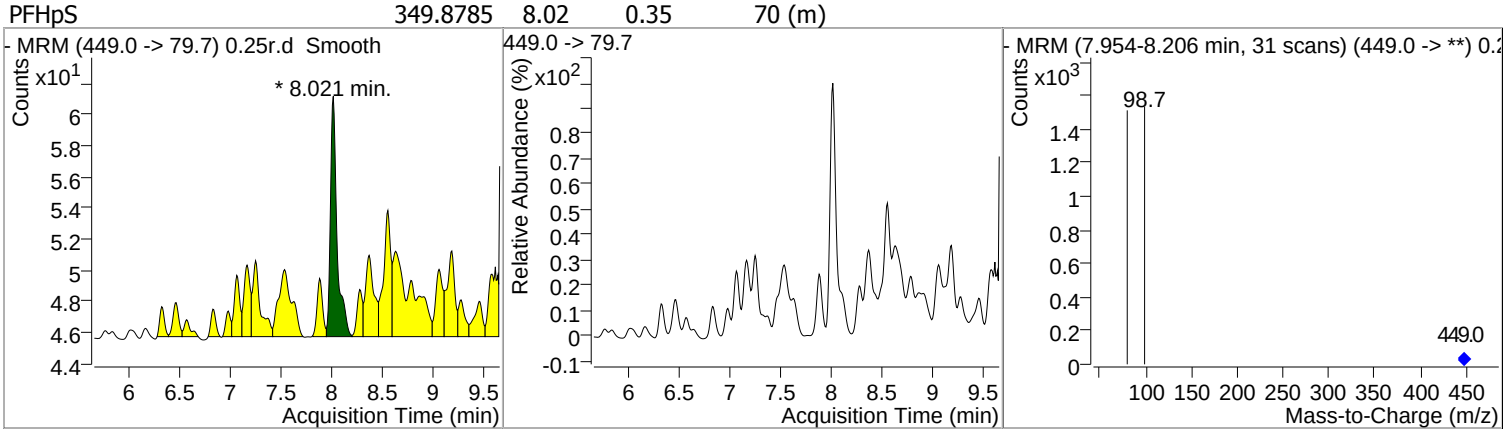
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	147.0428	8.00	0.35	10 (m)				



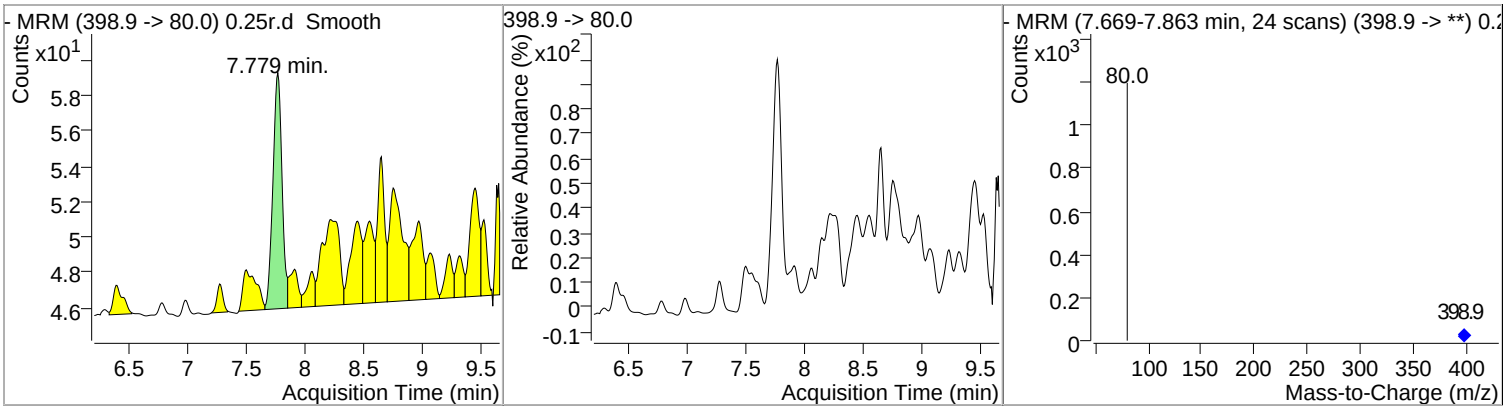
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	403.4725	8.01	0.36	567 (m)				



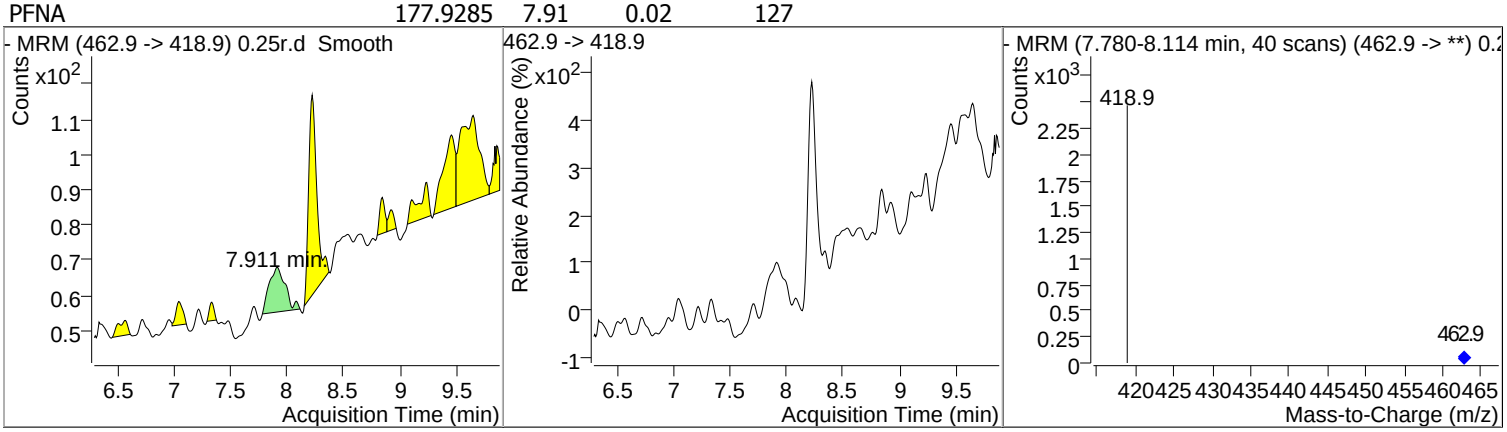
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	349.8785	8.02	0.35	70 (m)				



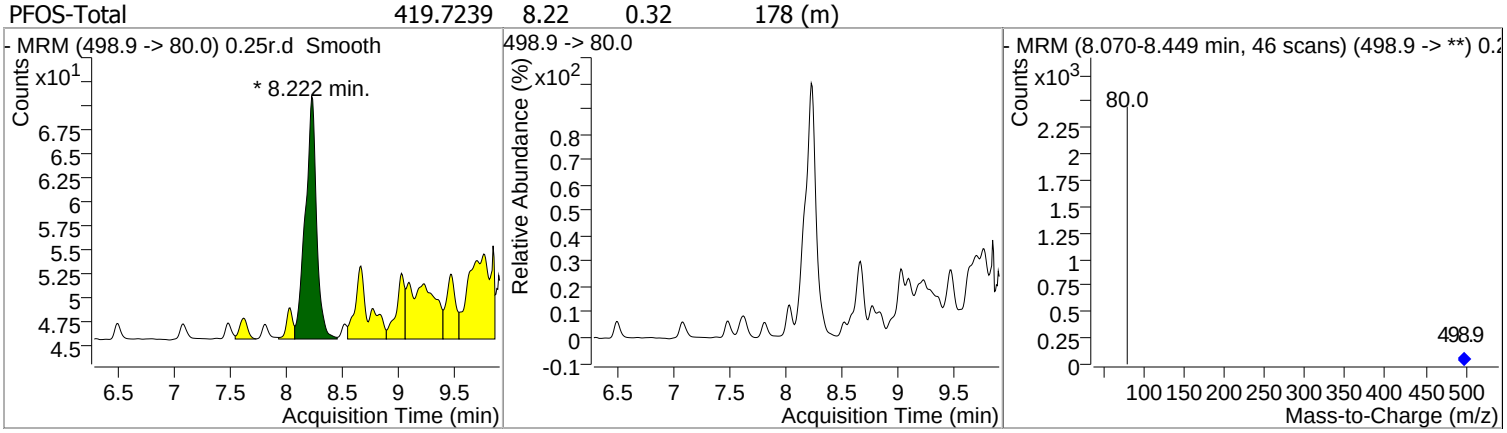
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	255.4219	7.78	0.10	72				



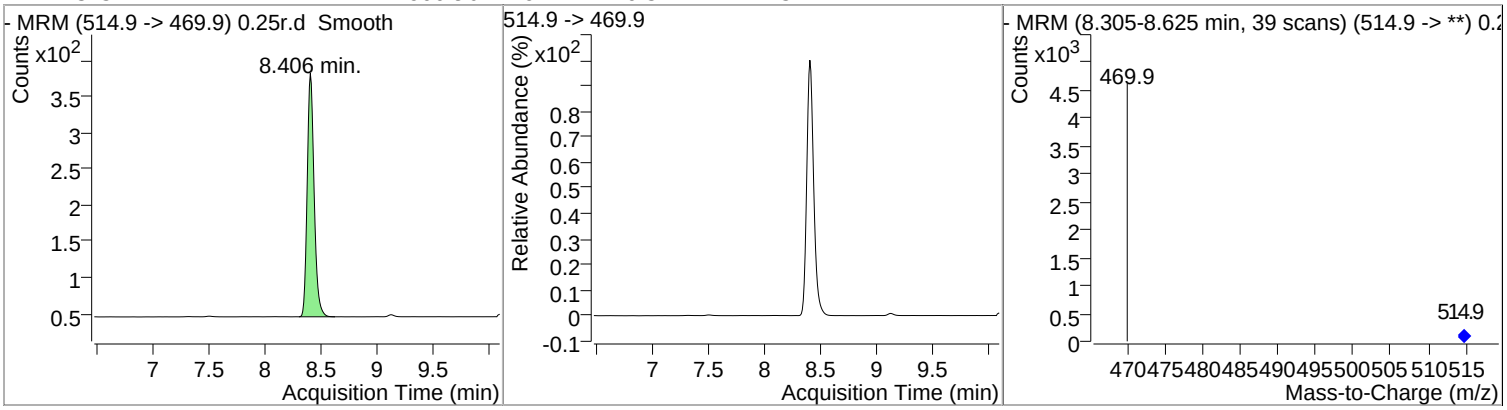
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	177.9285	7.91	0.02	127				



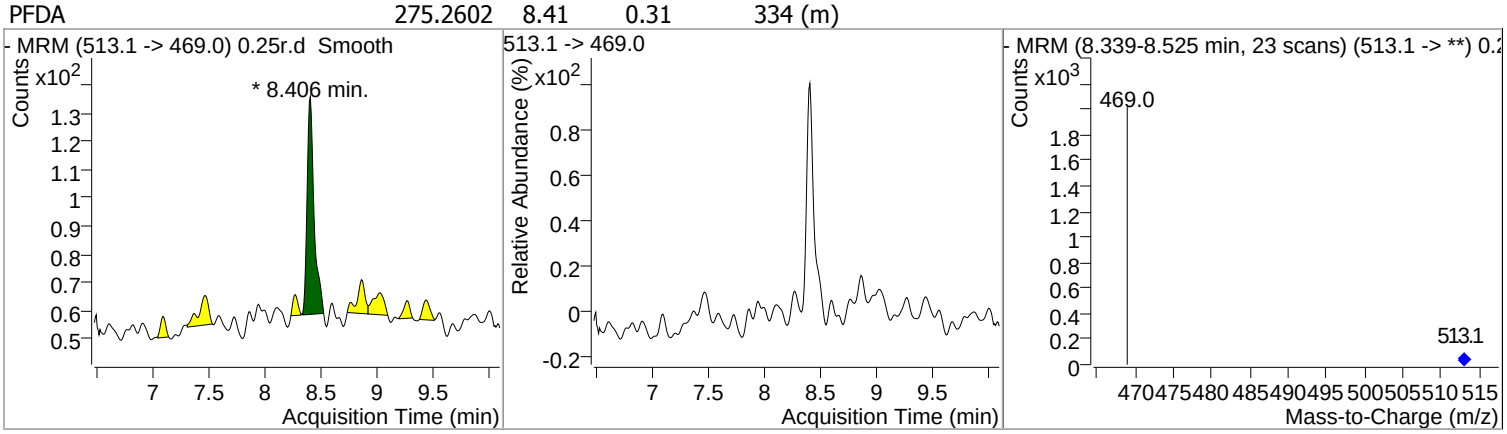
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	419.7239	8.22	0.32	178 (m)				



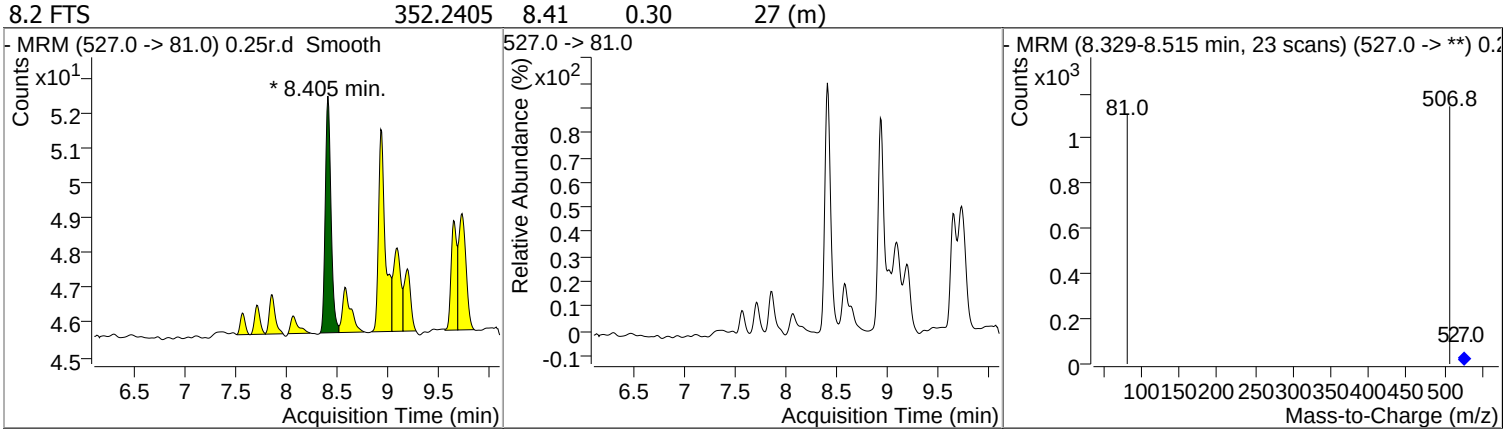
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	1800.9644	8.41	0.31	1432				



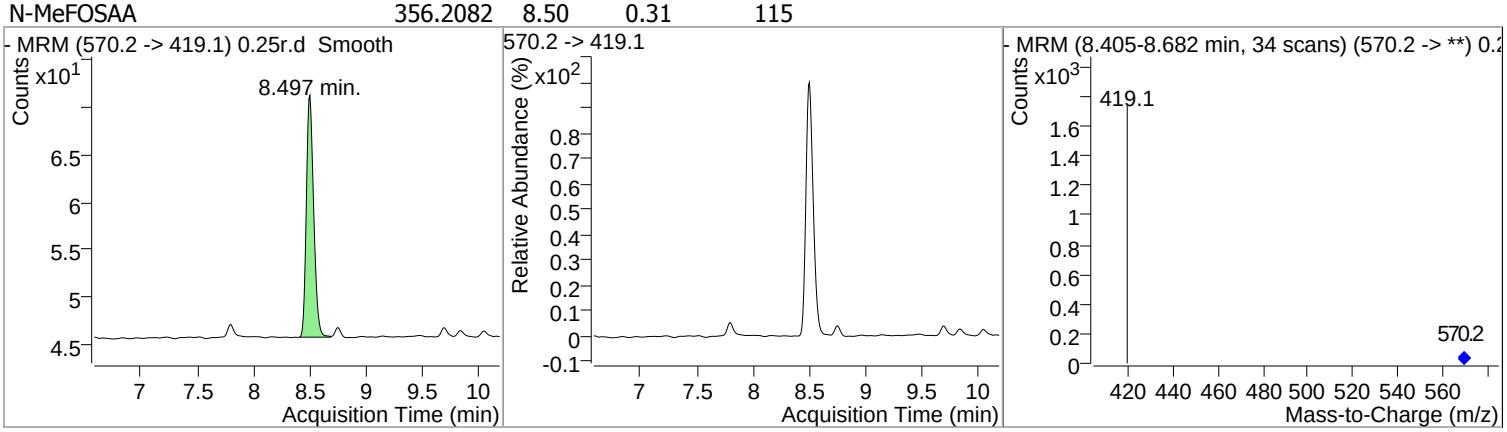
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	275.2602	8.41	0.31	334 (m)				



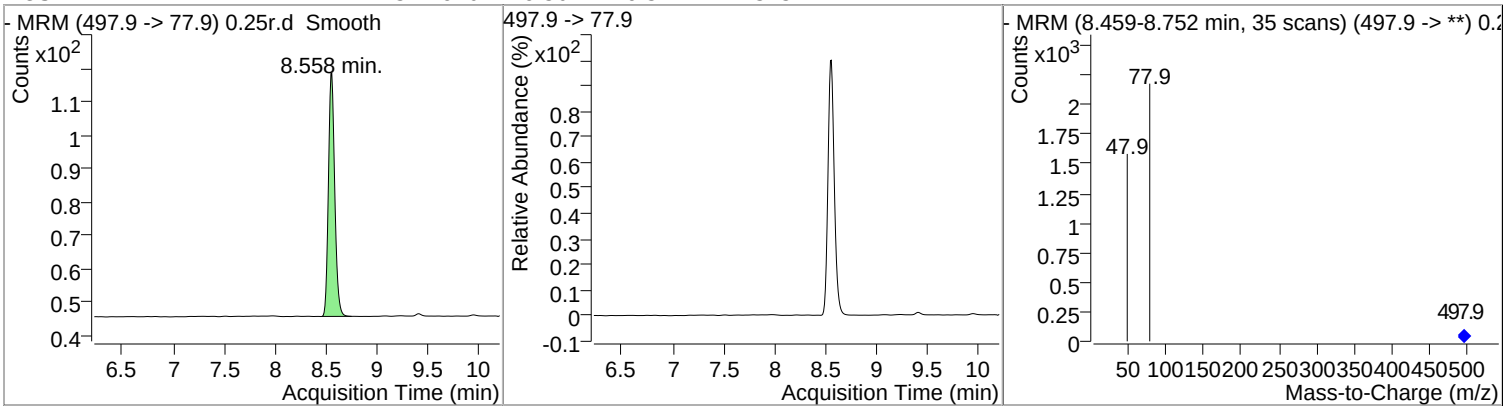
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	352.2405	8.41	0.30	27 (m)				



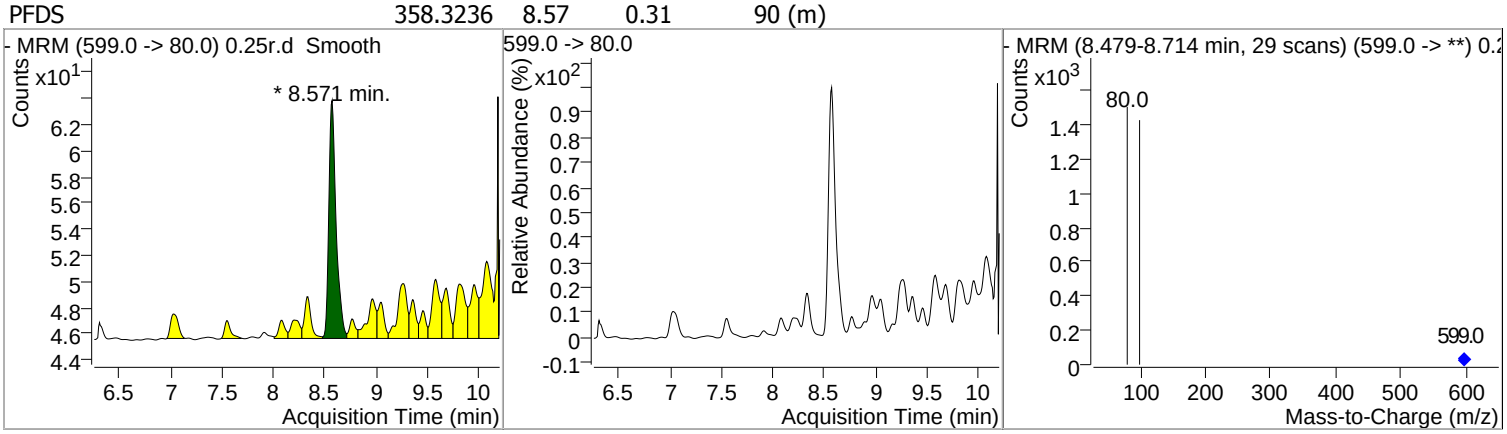
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	356.2082	8.50	0.31	115				



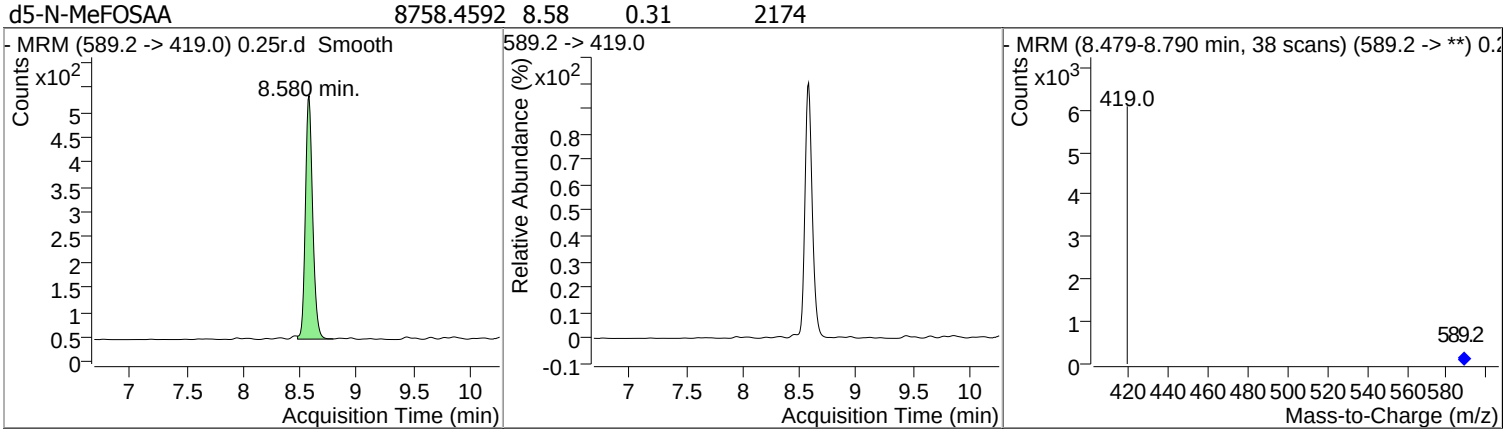
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	312.8164	8.56	0.34	315				



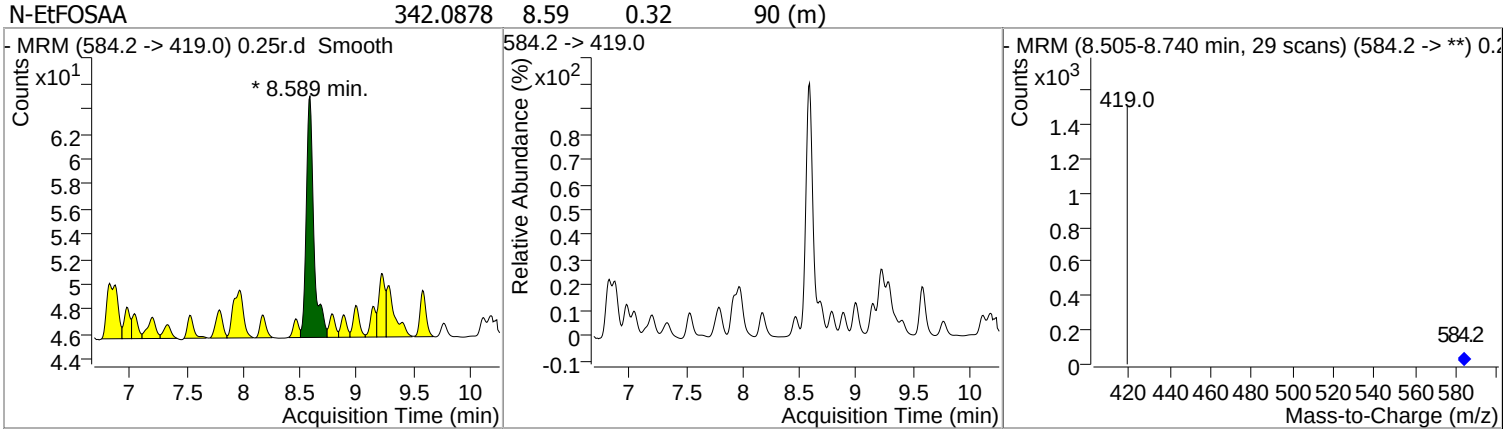
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	358.3236	8.57	0.31	90 (m)				



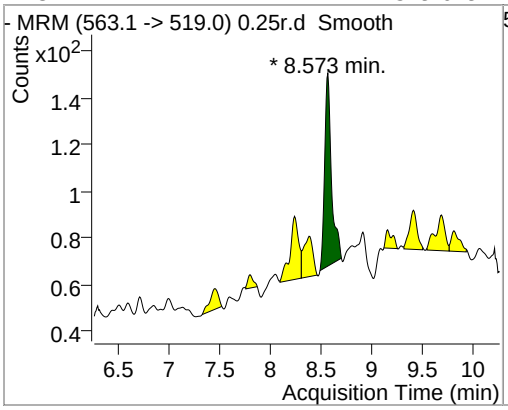
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	8758.4592	8.58	0.31	2174				

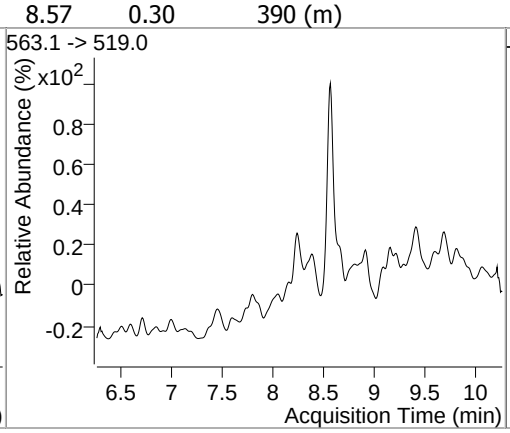


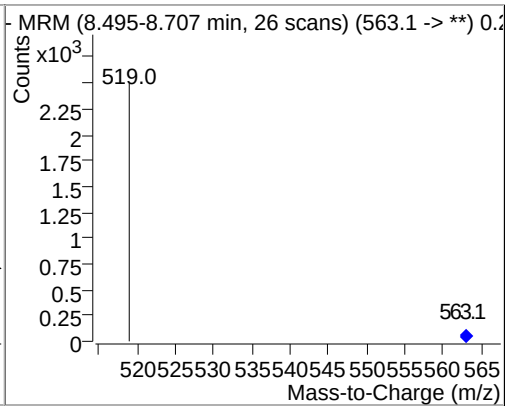
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	342.0878	8.59	0.32	90 (m)				



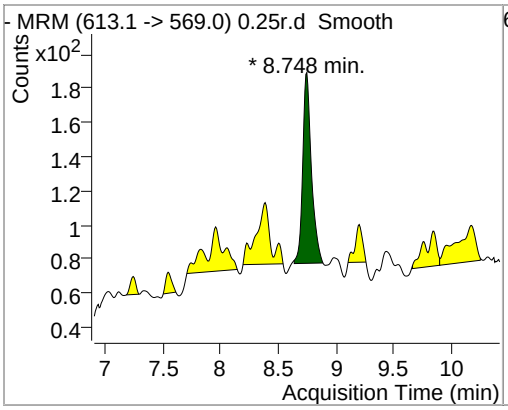
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	319.0792	8.57	0.30	390 (m)				

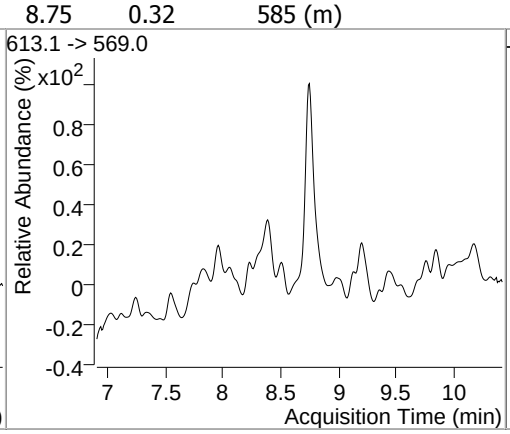


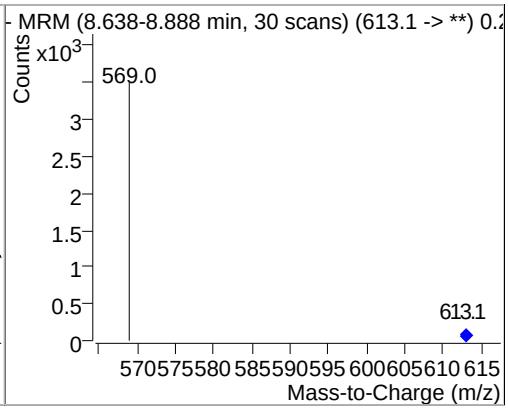




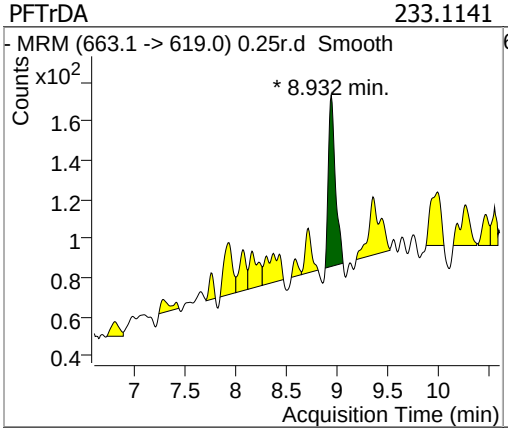
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	353.9842	8.75	0.32	585 (m)				

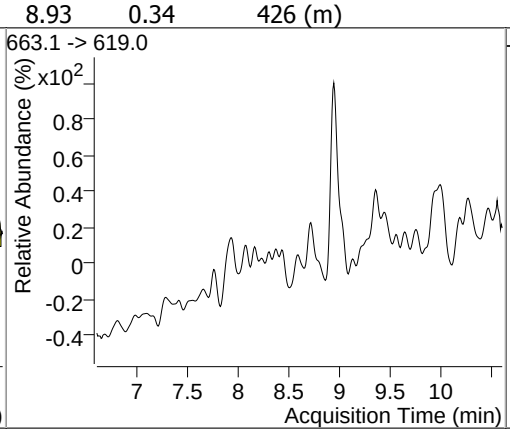


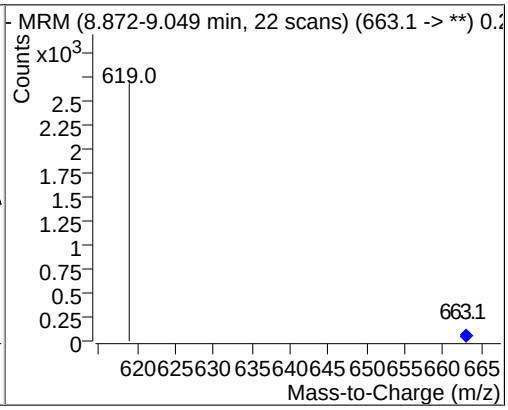




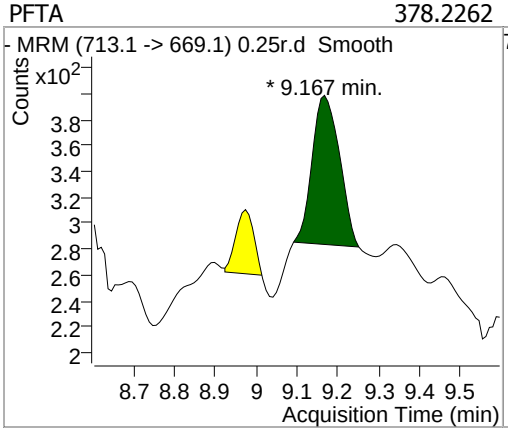
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	233.1141	8.93	0.34	426 (m)				

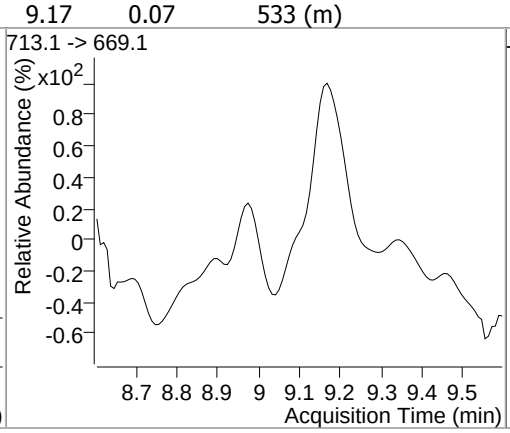


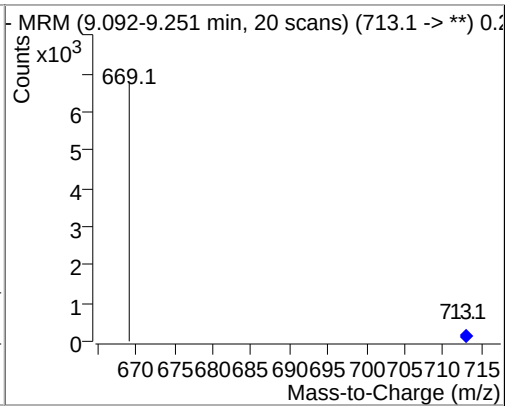




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	378.2262	9.17	0.07	533 (m)				





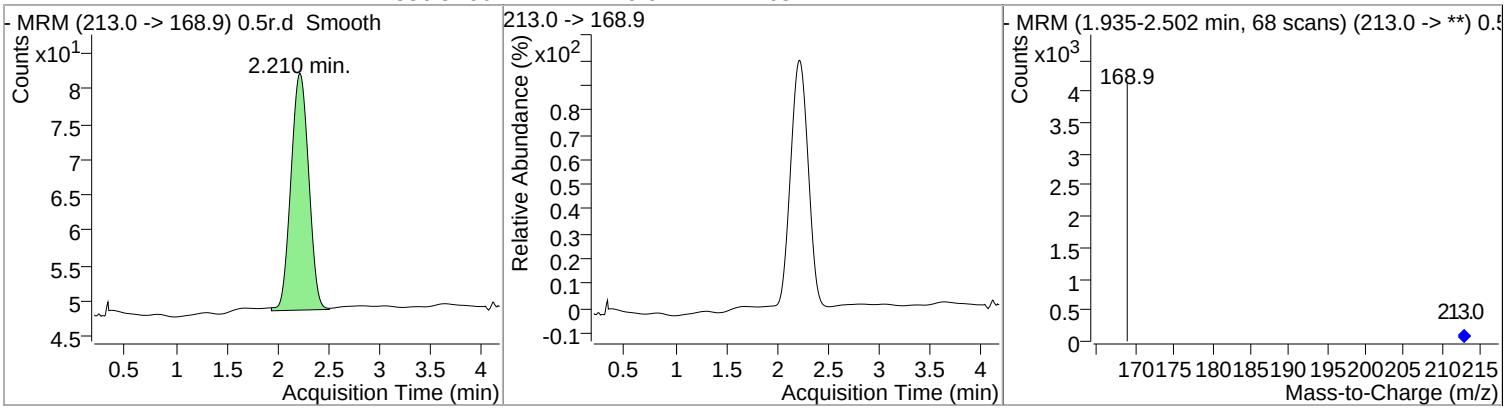


Data File	0.5r.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/21/2018 1:03:48 PM
Sample Name	0.5	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

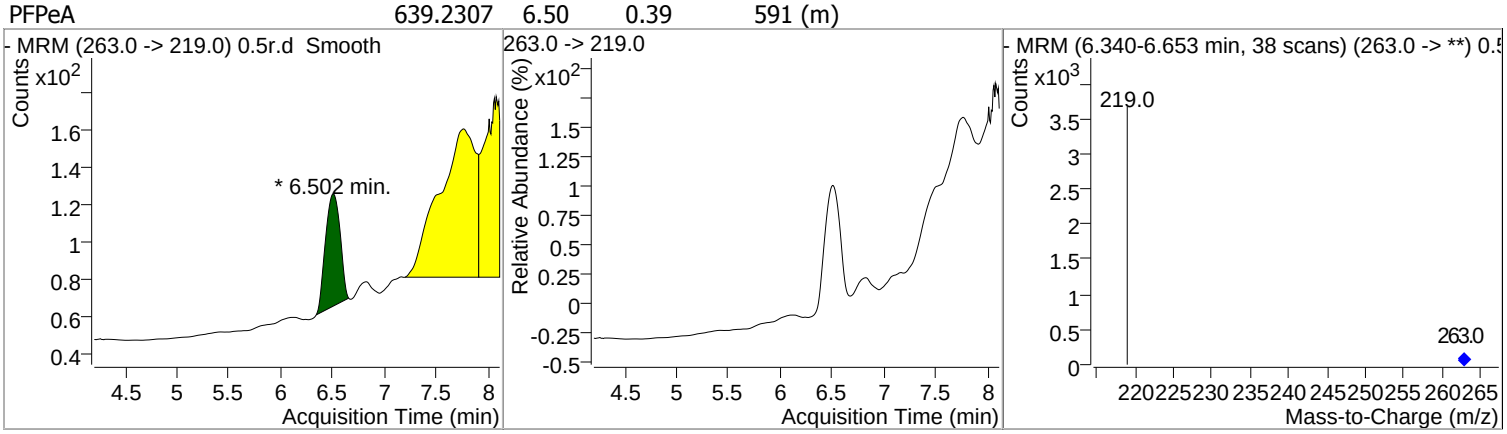
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	7.988	416.9 -> 371.9	13106	10000.0000	pg/ml		0.338
M PFOS C13	8.196	502.9 -> 80.0	11441	28700.0000	pg/ml		0.296
M d3-N-MeFOSAA	8.463	573.2 -> 419.0	12194	40000.0000	pg/ml		0.279
System Monitoring Compounds							
S PFHxA C13	7.333	314.9 -> 269.9	6902	4283.6967	pg/ml		0.396
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 42.84%		*	
S PFDA C13	8.381	514.9 -> 469.9	3731	4392.9633	pg/ml		0.287
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 43.93%		*	
S d5-N-MeFOSAA	8.555	589.2 -> 419.0	4833	18117.5827	pg/ml		0.287
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 45.29%		*	
Target Compounds							QValue
T PFBA	2.210	213.0 -> 168.9	405	550.9486	pg/ml		100
T PFPeA	6.502	263.0 -> 219.0	591	639.2307	pg/ml	m	100
T PFBS	6.863	298.9 -> 80.0	187	504.9225	pg/ml		100
T PFHxA	7.334	312.9 -> 268.9	933	630.1148	pg/ml	m	100
T PFHpA	7.720	362.9 -> 319.0	839	528.3872	pg/ml	m	100
T 6.2 FTS	7.971	427.0 -> 406.8	26	306.5574	pg/ml	m	100
T PFOA-Total	7.980	412.9 -> 368.9	569	378.9826	pg/ml	m	100
T PFHpS	7.996	449.0 -> 79.7	140	587.8235	pg/ml	m	100
T PFHxS-Total	7.745	398.9 -> 80.0	167	495.3621	pg/ml		100
T PFNA	8.197	462.9 -> 418.9	410	536.7203	pg/ml		100
T PFOS-Total	8.205	498.9 -> 80.0	214	425.3970	pg/ml	m	100
T PFDA	8.381	513.1 -> 469.0	746	574.8977	pg/ml	m	100
T 8.2 FTS	8.388	527.0 -> 81.0	34	376.9015	pg/ml		100
T N-MeFOSAA	8.464	570.2 -> 419.1	201	578.0834	pg/ml		100
T FOSA	8.525	497.9 -> 77.9	480	444.6120	pg/ml		100
T PFDS	8.538	599.0 -> 80.0	129	433.6952	pg/ml		100
T N-EtFOSAA	8.547	584.2 -> 419.0	196	691.4697	pg/ml	m	100
T PFUnA	8.548	563.1 -> 519.0	589	451.7216	pg/ml	m	100
T PFDoA	8.714	613.1 -> 569.0	927	525.6538	pg/ml	m	100
T PFTrDA	8.907	663.1 -> 619.0	1163	596.4716	pg/ml	m	100
T PFTA	9.125	713.1 -> 669.1	920	611.0691	pg/ml	m	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

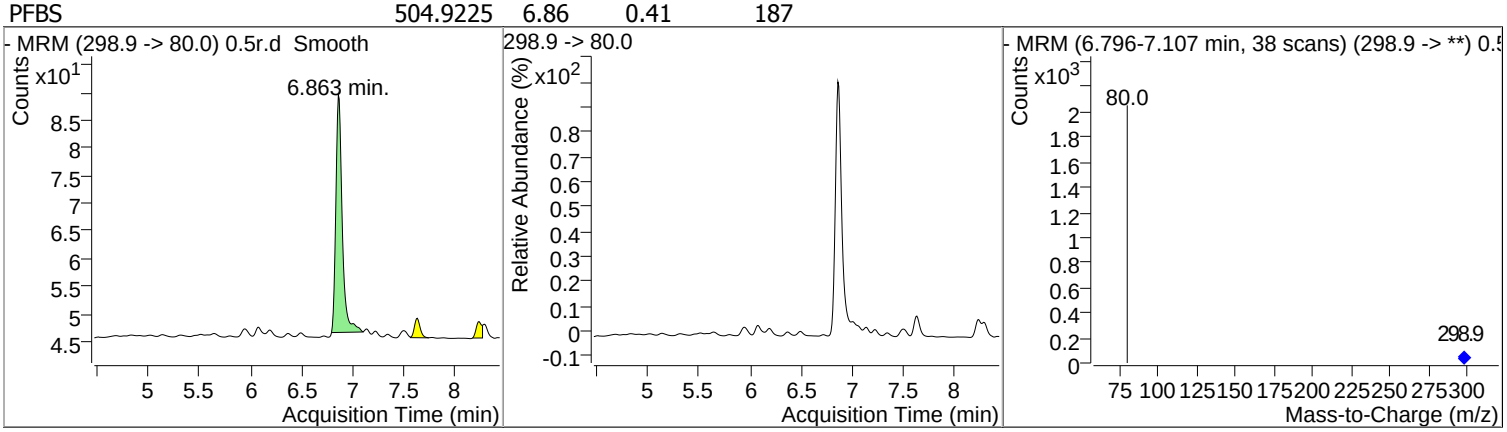
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	550.9486	2.21	0.04	405				



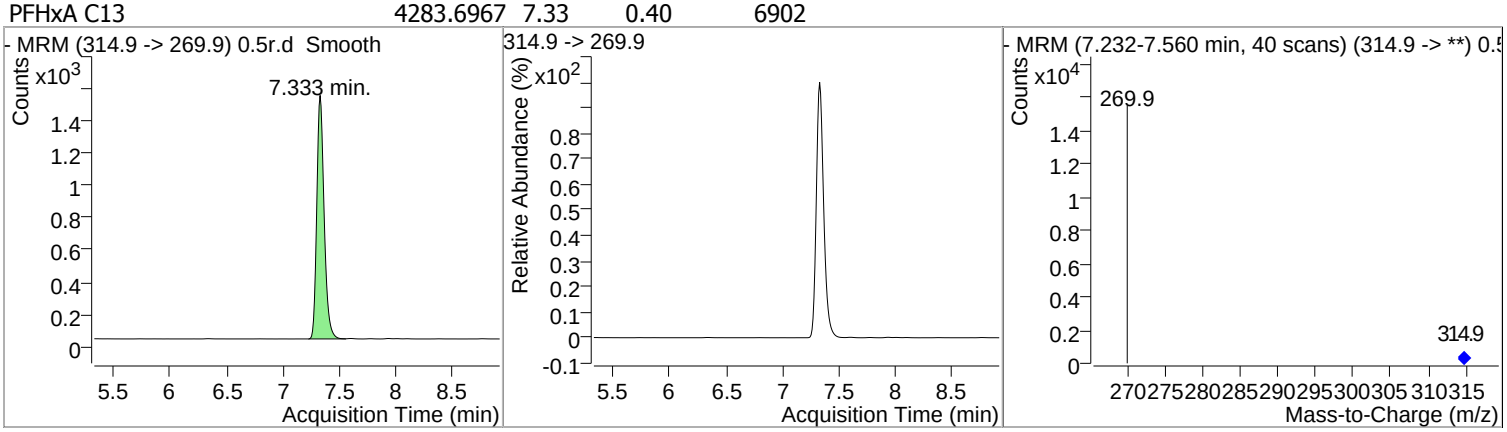
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	639.2307	6.50	0.39	591 (m)				



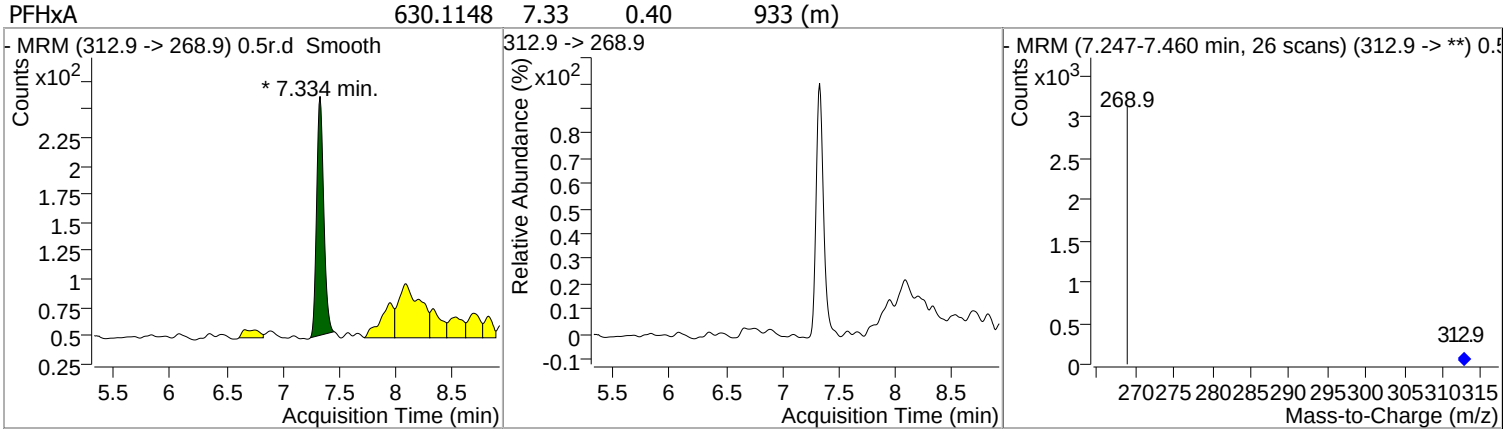
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	504.9225	6.86	0.41	187				



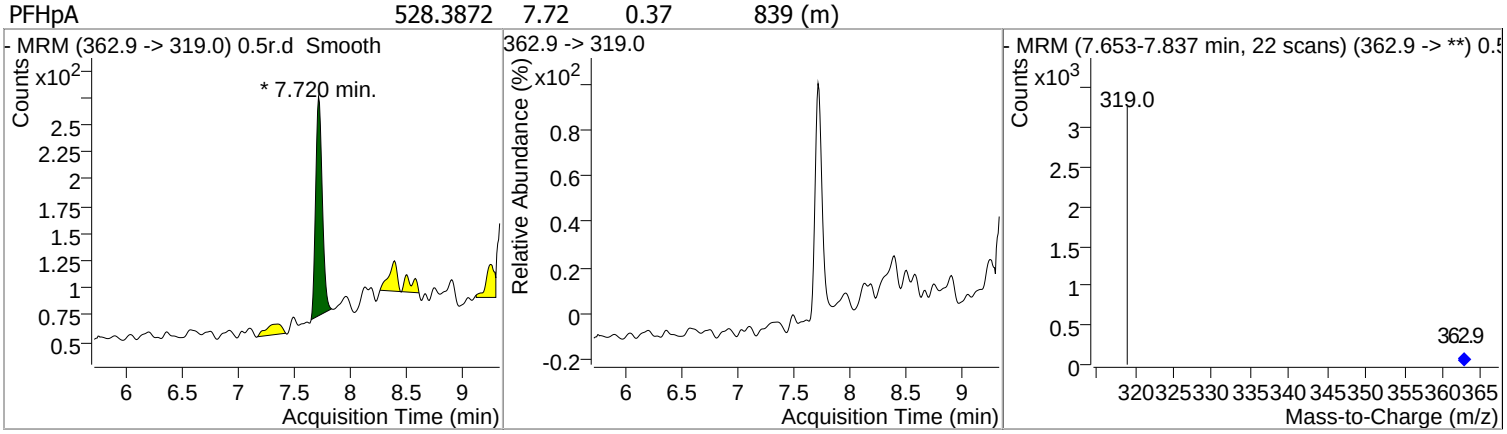
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	4283.6967	7.33	0.40	6902				



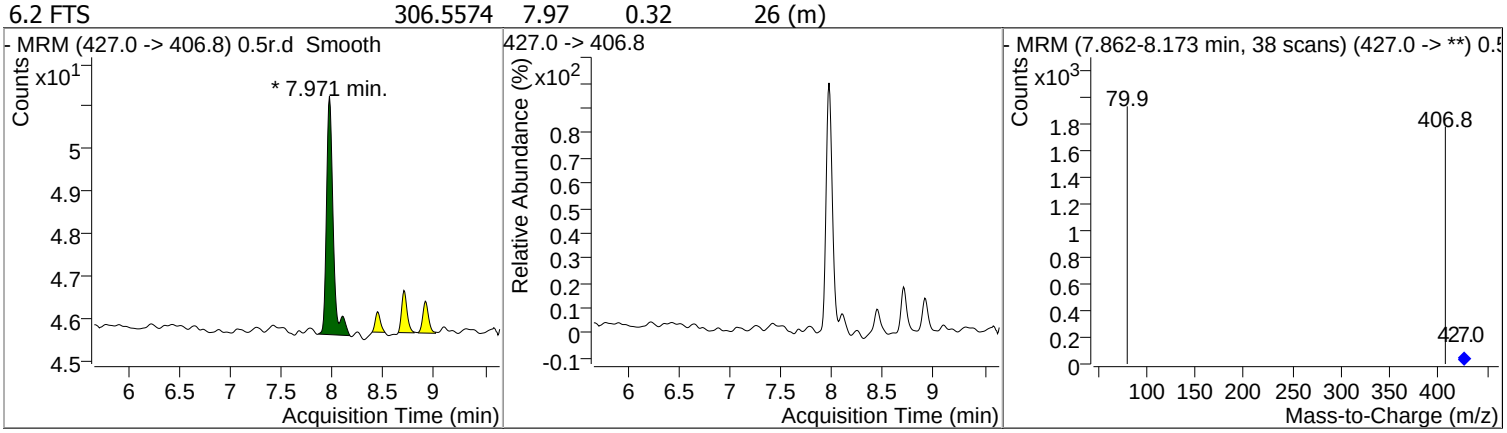
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	630.1148	7.33	0.40	933 (m)				



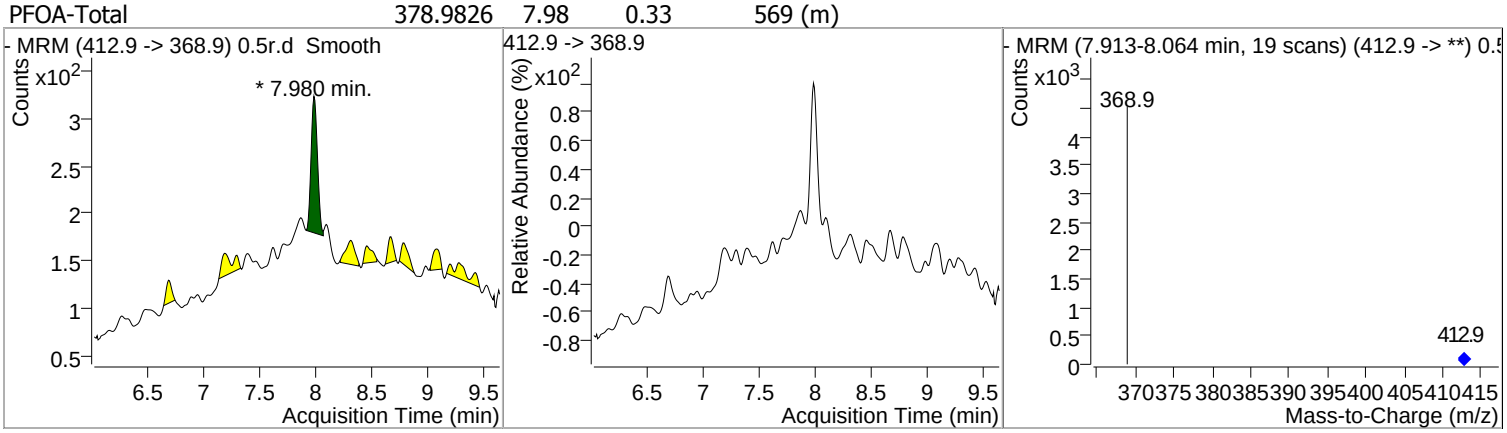
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	528.3872	7.72	0.37	839 (m)				



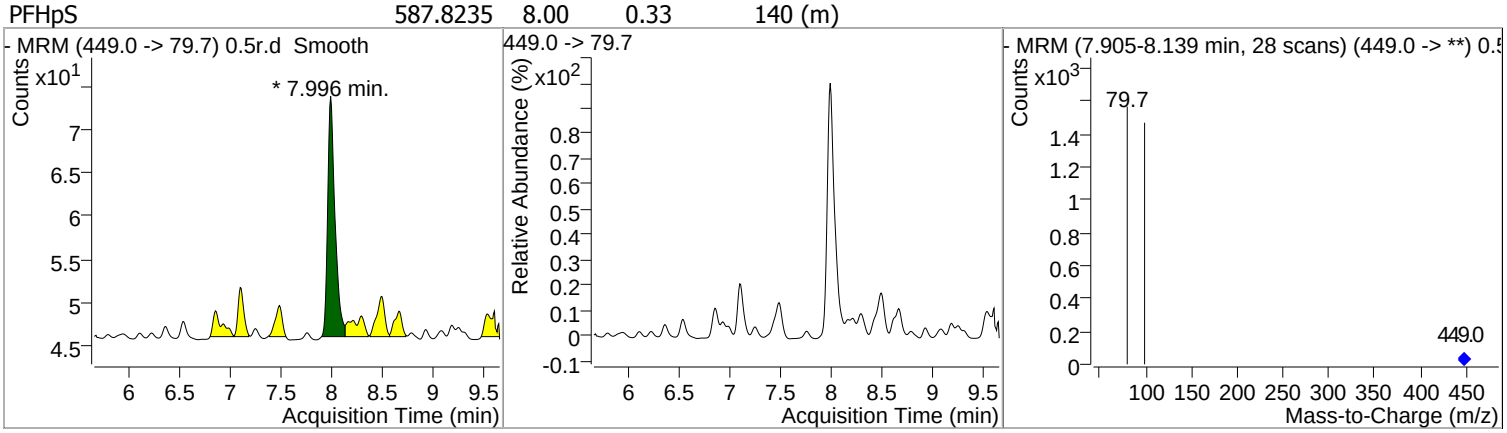
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	306.5574	7.97	0.32	26 (m)				



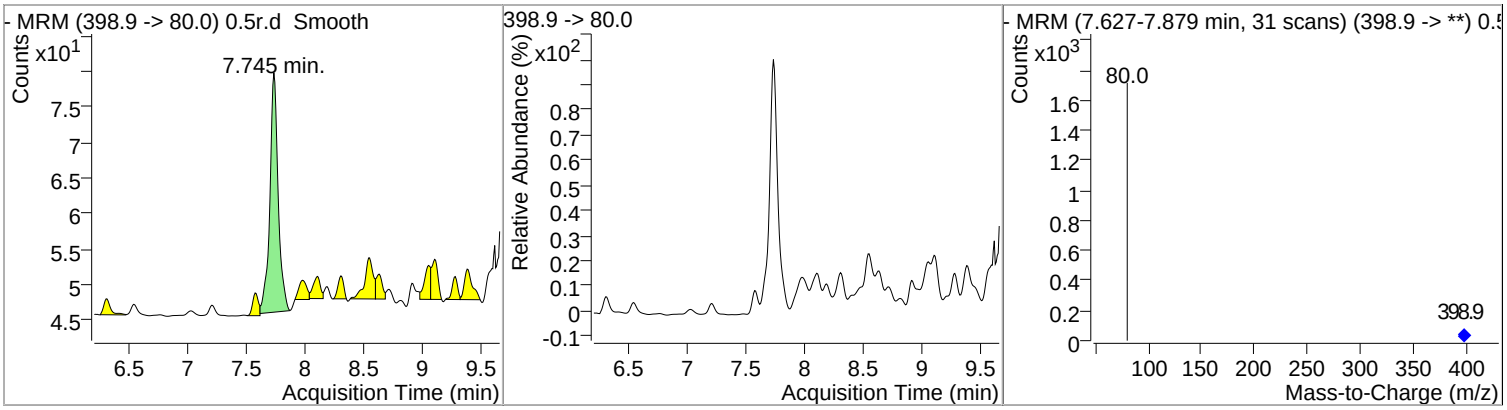
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	378.9826	7.98	0.33	569 (m)				



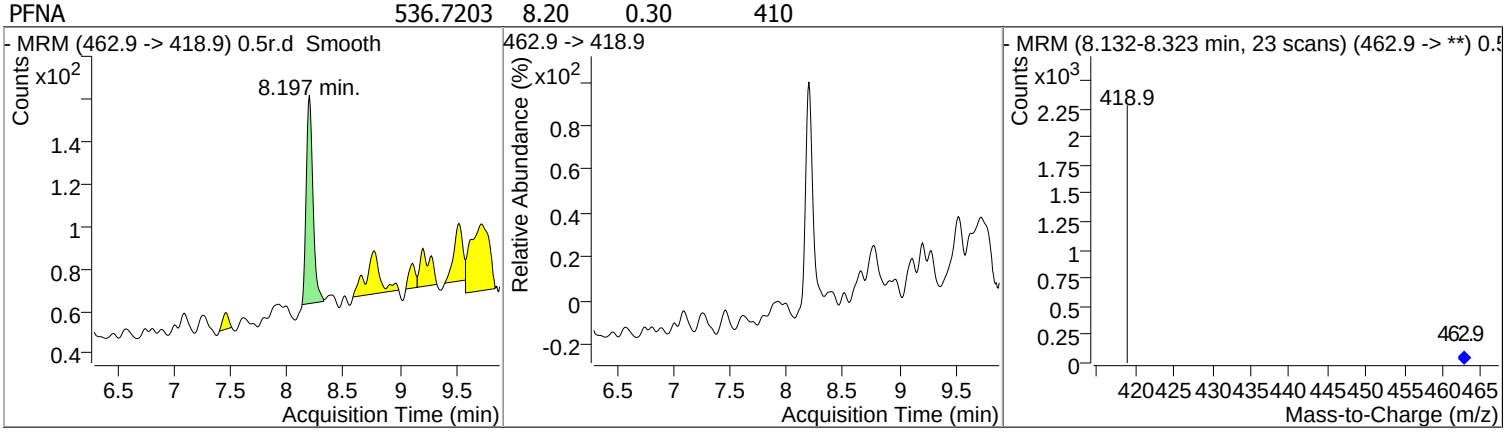
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	587.8235	8.00	0.33	140 (m)				



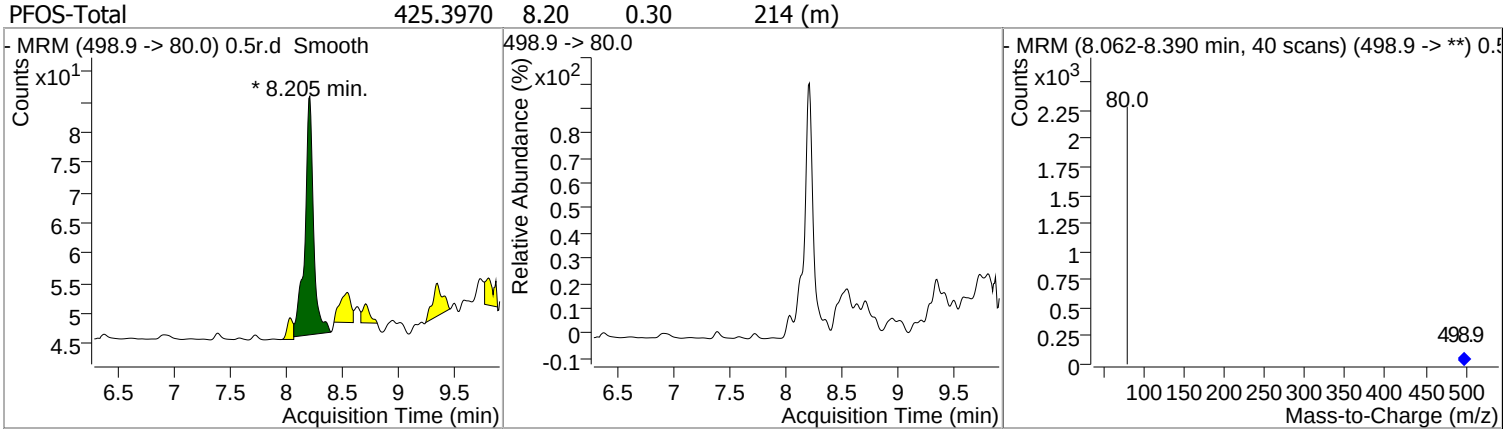
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	495.3621	7.74	0.07	167				



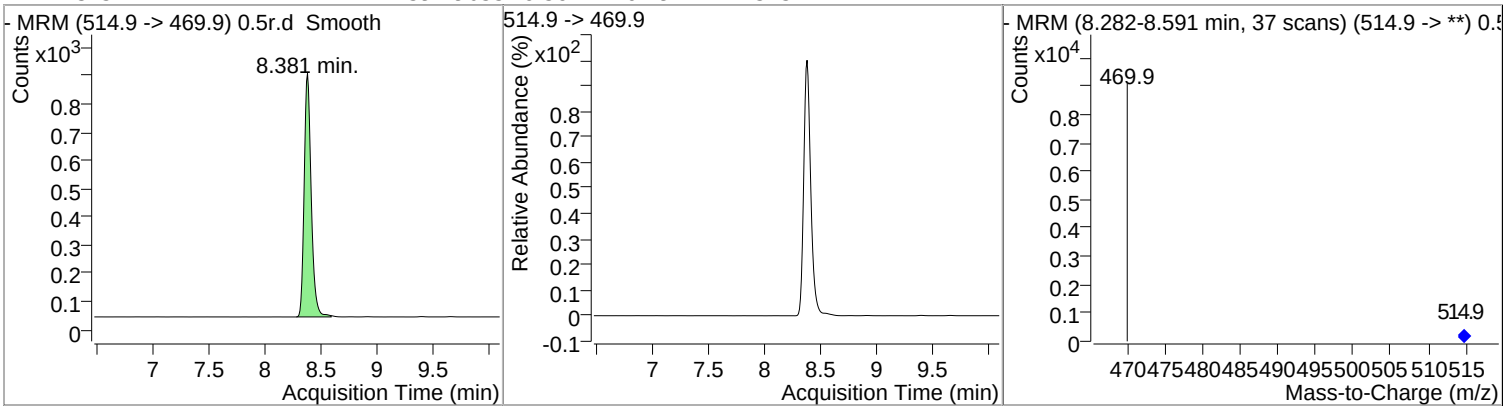
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	536.7203	8.20	0.30	410				



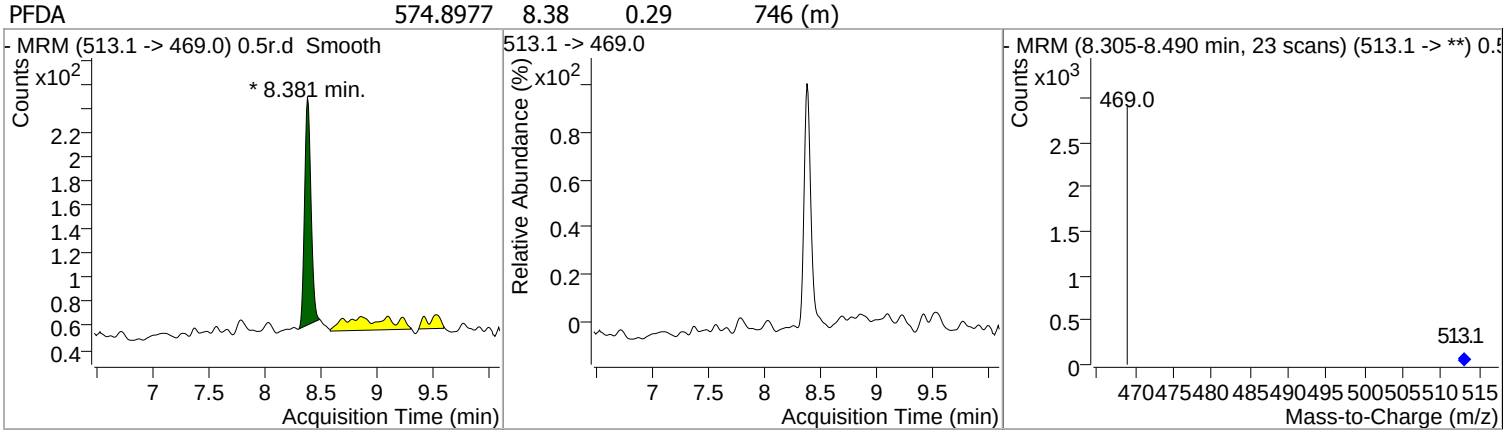
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	425.3970	8.20	0.30	214 (m)				



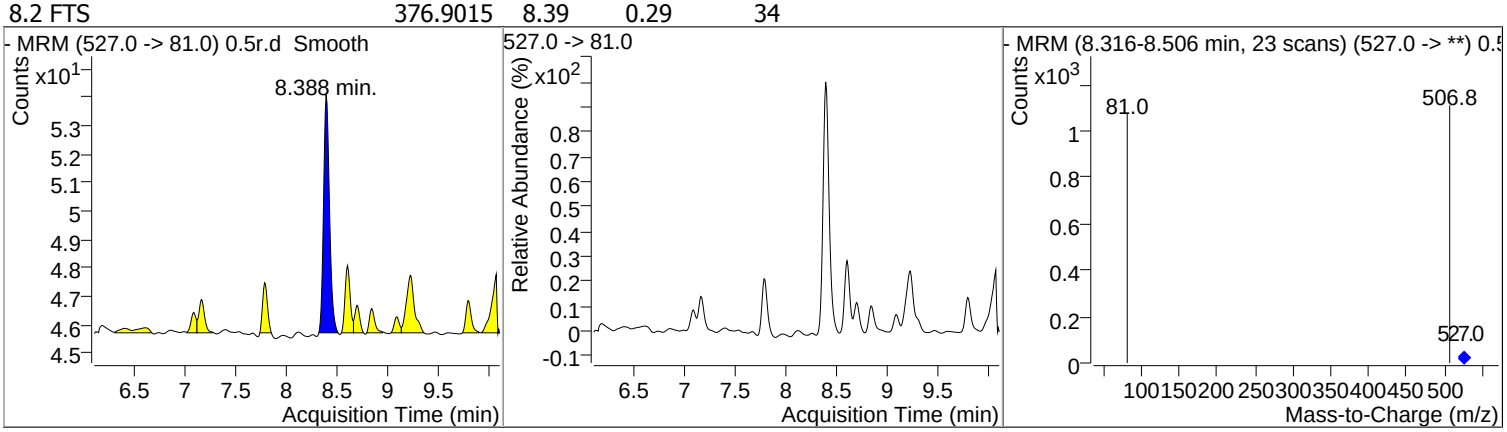
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	4392.9633	8.38	0.29	3731				



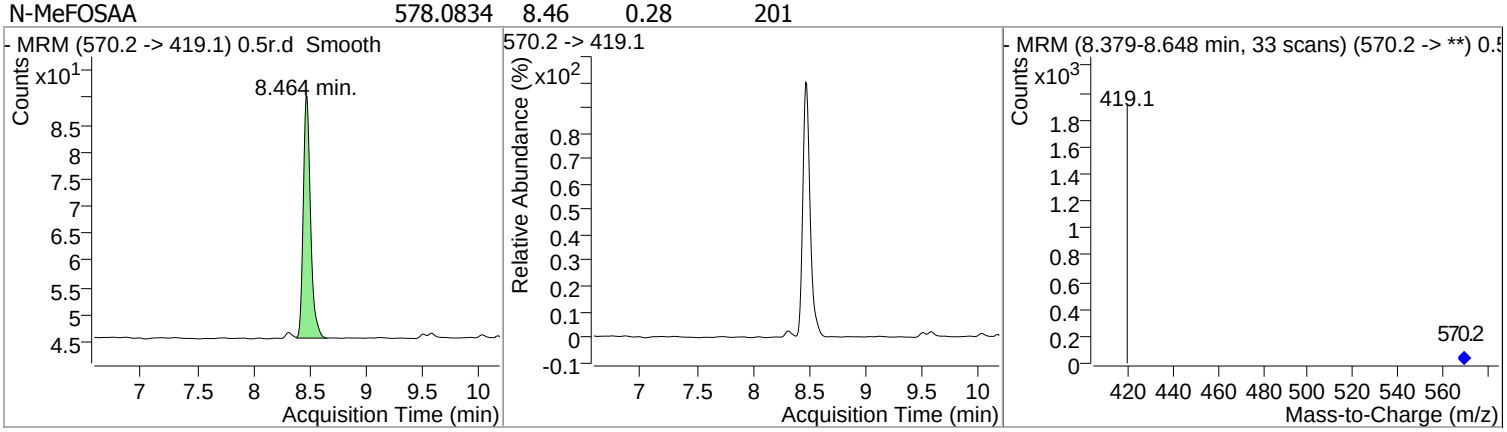
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	574.8977	8.38	0.29	746 (m)				



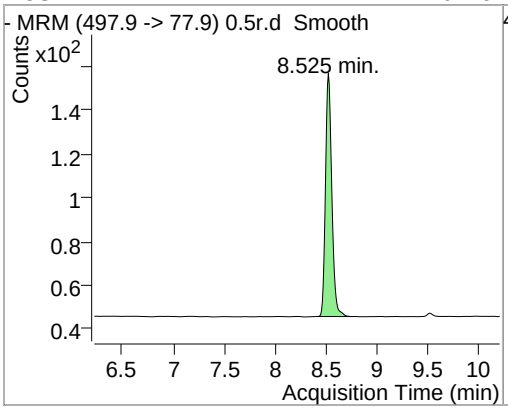
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	376.9015	8.39	0.29	34				

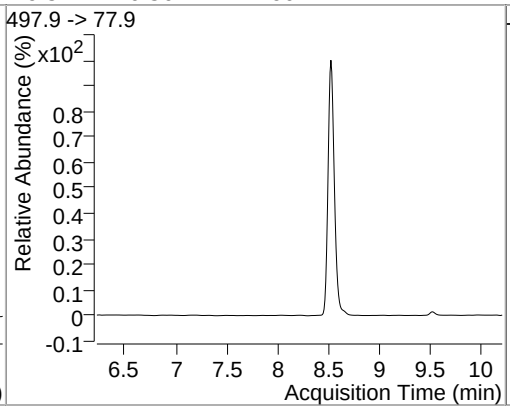


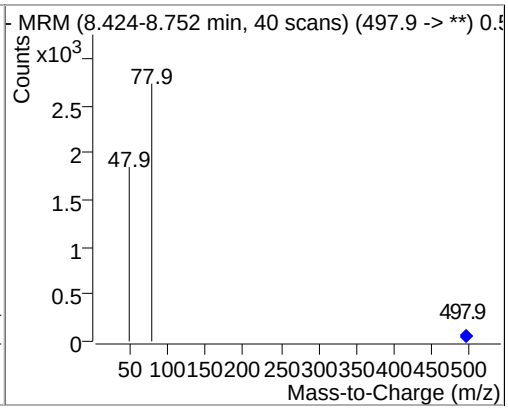
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	578.0834	8.46	0.28	201				



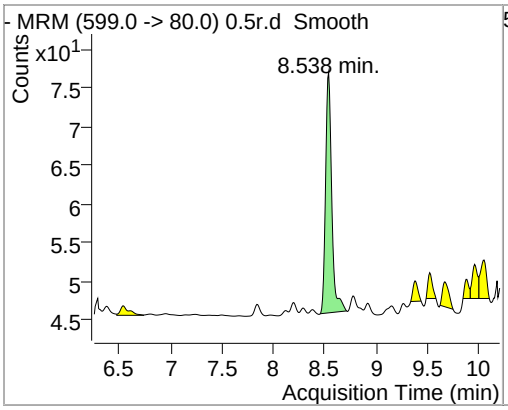
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	444.6120	8.52	0.30	480				

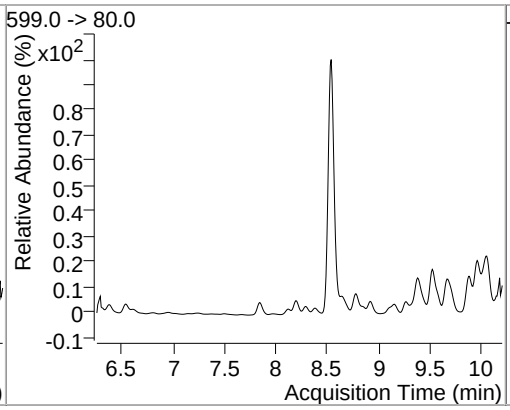


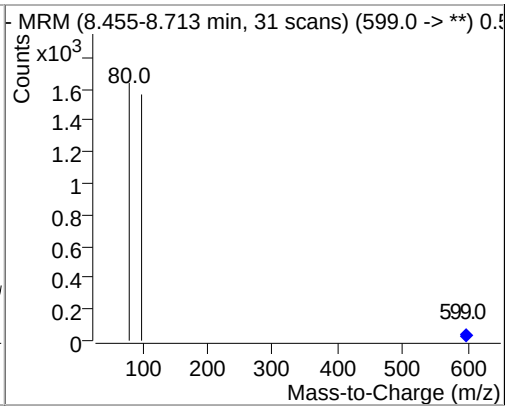




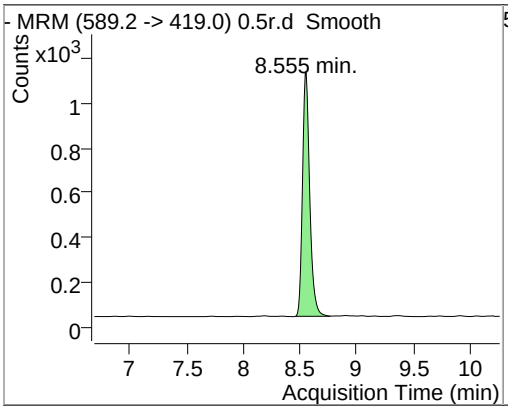
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	433.6952	8.54	0.28	129				

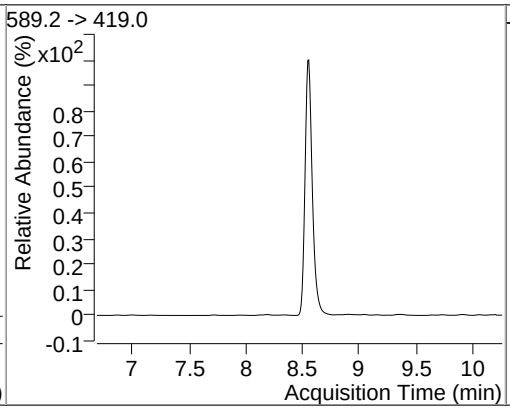


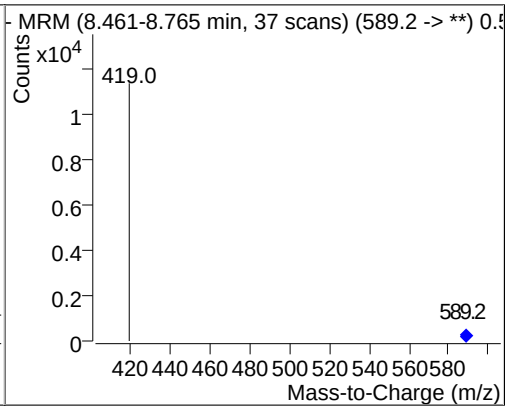




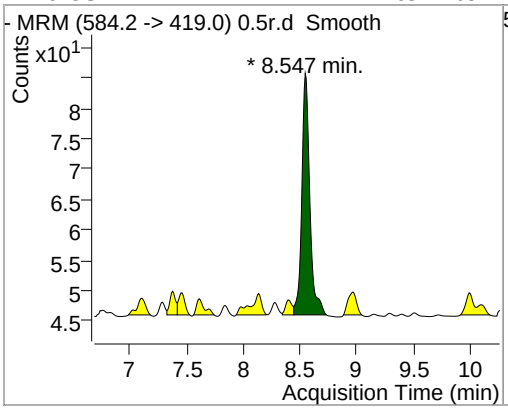
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	18117.5827	8.56	0.29	4833				

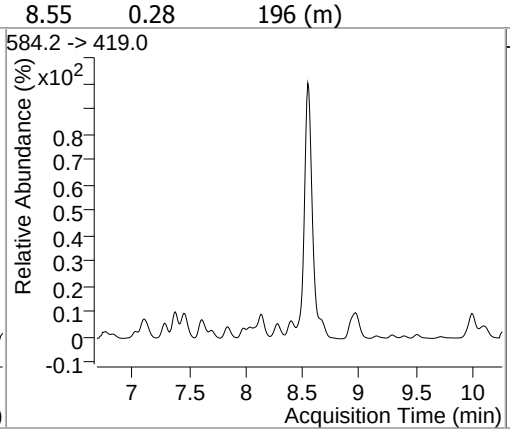


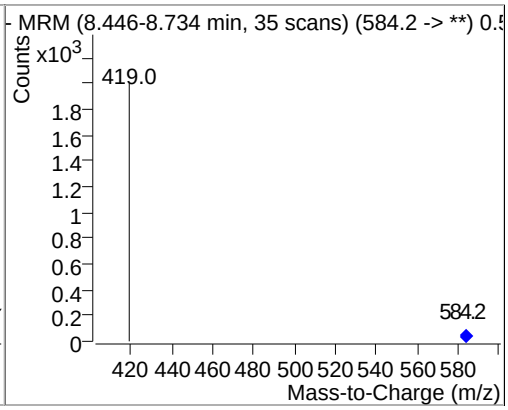




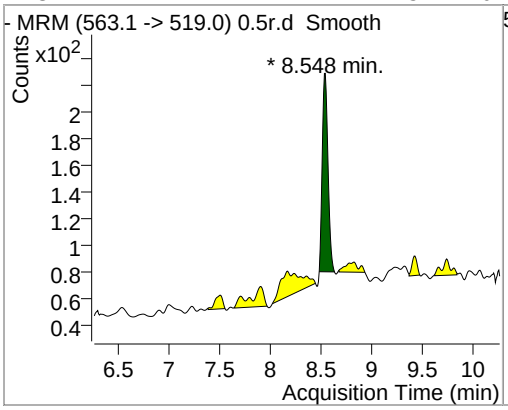
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	691.4697	8.55	0.28	196 (m)				

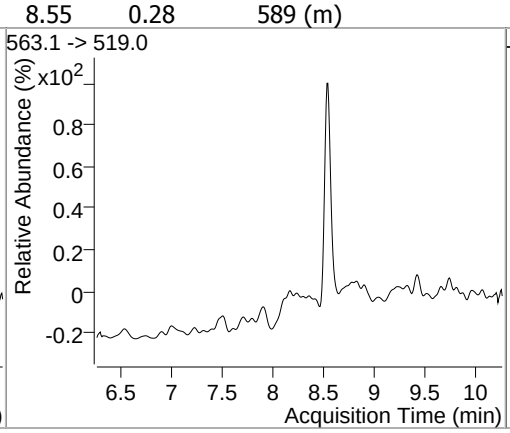


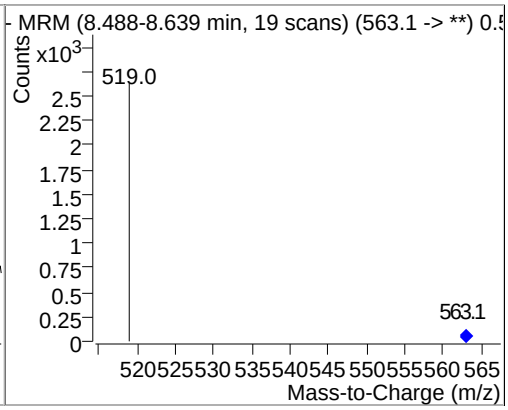




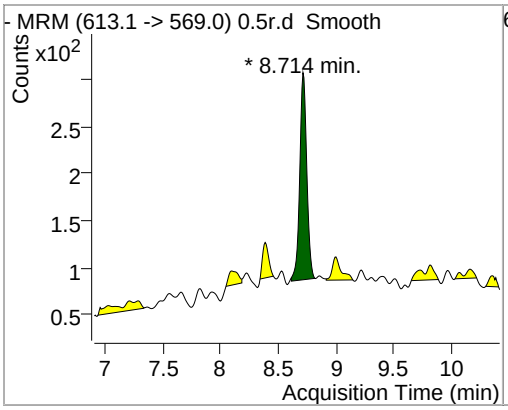
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	451.7216	8.55	0.28	589 (m)				

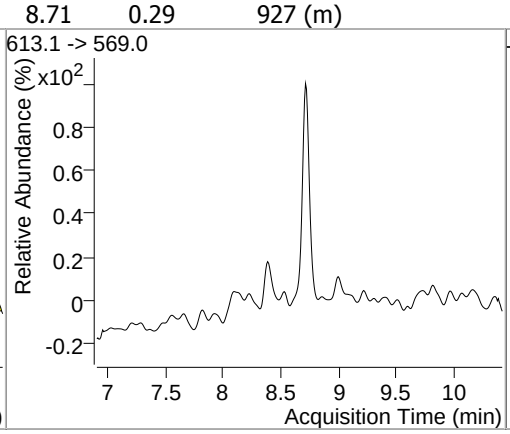


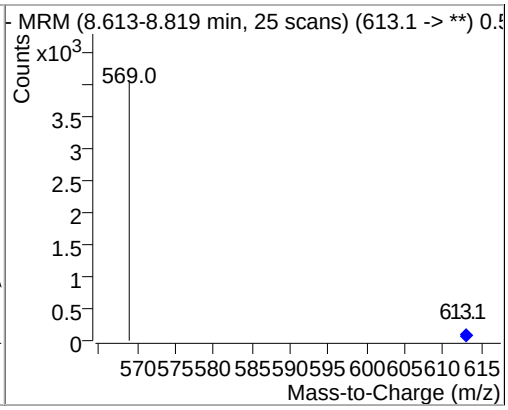




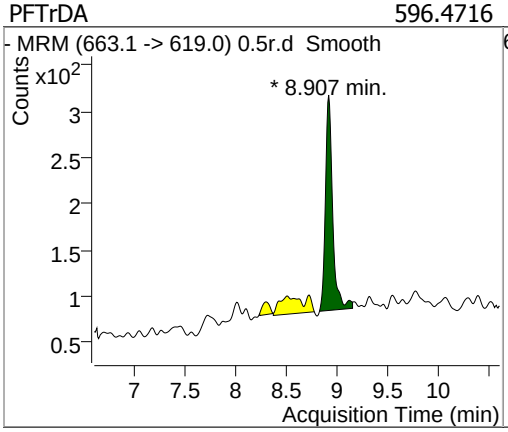
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	525.6538	8.71	0.29	927 (m)				

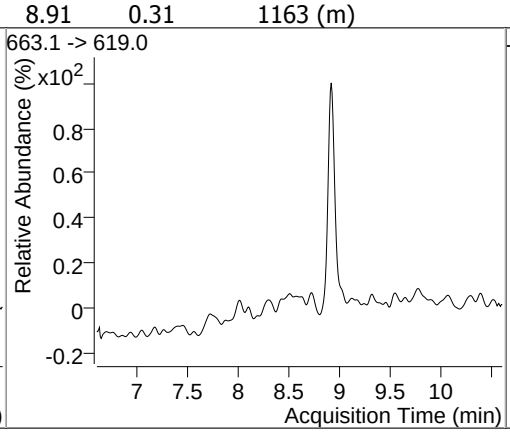


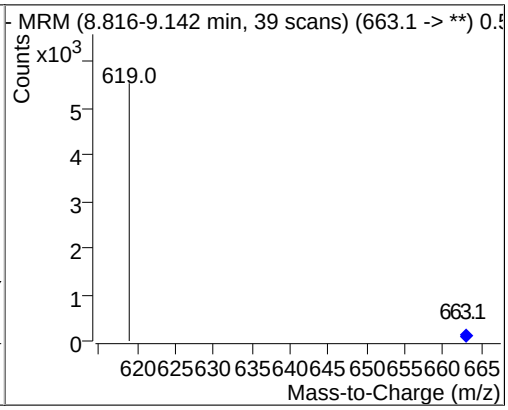




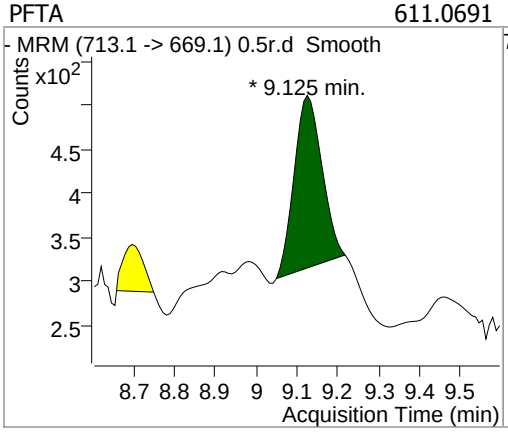
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	596.4716	8.91	0.31	1163 (m)				

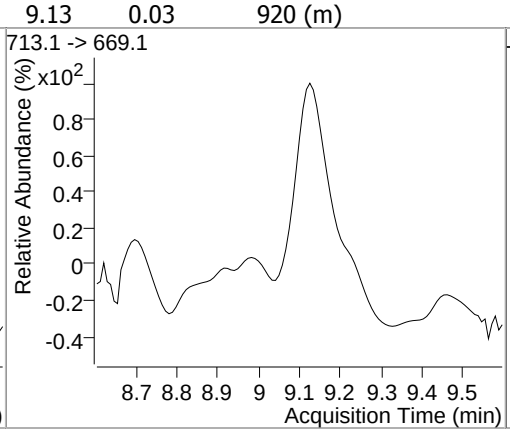


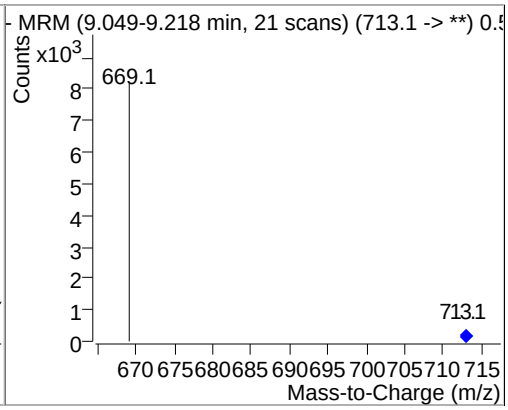




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	611.0691	9.13	0.03	920 (m)				







4 - FORM IV
METHOD BLANK SUMMARY

SOP 434-PFAAS

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Blank ID:	B219828-BLK1	Batch:	B219828
Prepared:	12/24/2018 08:00		

Client Sample ID	Laboratory Sample ID	Lab File ID	Time Analyzed
LCS	B219828-BS1	lims export files full-002	10:43
Matrix Spike	B219828-MS1	lims export files full-003	10:56
Matrix Spike Dup	B219828-MSD1	lims export files full-004	11:08
MW-15 121218	18L0603-01	lims export files full-006	11:34
MW-5 121218	18L0603-02	lims export files full-007	11:47
MW-18 121218	18L0603-03	lims export files full-008	11:59
MW-12 121218	18L0603-04	lims export files full-009	12:12
MW-1 121218	18L0603-05	lims export files full-010	12:25
field blank	18L0603-06	lims export files full-011	12:38
equipment blank	18L0603-07	lims export files full-012	12:50
DUP	18L0603-08	lims export files full-013	13:03

CALIBRATION DATA

6 - FORM VI
INITIAL CALIBRATION DATA SHEET

SOP 434-PFAAS

Client: AECOM Environment - Latham, NY SDG: 18L0603

Project: 60284002 - Utica, NY

Calibration: 1800396 Instrument: HPLC1

Calibration Date: 12/21/2018 2:04:32PM

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
		RF		RF		RF		RF		RF		RF
Perfluorobutanesulfonic acid (PI	221	1.26119	442	1.060847	885	1.015949	2210	1.022082	4420	0.8136181	8850	0.9508879
Perfluorohexanoic acid (PFHxA)	250	1.120991	500	1.423641	1000	1.098045	2500	1.156001	5000	1.087831	10000	1.194978
Perfluoroheptanoic acid (PFHpA	250	0.8855916	500	1.280524	1000	1.357458	2500	1.209389	5000	1.125009	10000	1.266988
Perfluorobutanoic acid (PFBA)	250	0.6812797	500	0.6181729	1000	0.5936575	2500	0.5592556	5000	0.5313473	10000	0.5913291
Perfluorodecanesulfonic acid (P	241	1.111165	482	0.6724464	965	0.8011748	2410	0.8000584	4820	0.7950606	9650	0.7969535
Perfluoroheptanesulfonic acid (F	238	0.8801643	475	0.7409292	950	0.5132621	2380	0.5851902	4750	0.623038	9500	0.5325765
Perfluorooctanesulfonamide (FC	250	4.434401	500	3.151351	1000	3.726656	2500	3.592047	5000	3.718628	10000	3.780591
Perfluoropentanoic acid (PFPeA	250	0.7425384	500	0.9014609	1000	0.6980493	2500	0.717049	5000	0.6745152	10000	0.7666747
6:2 Fluorotelomersulfonate (6:2	238	~~0.1304428~~	475	0.1362609	950	0.3096085	2380	0.2399355	4750	0.272688	9500	0.2149403
8:2 Fluorotelomersulfonate (8:2	240	0.3316856	480	0.1774538	960	0.1842982	2400	0.293139	4800	0.2418324	9600	0.262128
Perfluorohexanesulfonic acid (P	228	0.944663	455	0.9180468	910	0.8039238	2280	0.8297083	4550	0.8396148	9100	0.8729115
Perfluorooctanoic acid (PFOA)	250	~~1.849307~~	500	0.8685287	1000	1.090719	2500	1.357516	5000	1.145355	10000	1.173882
Perfluorooctanesulfonic acid (PI	231	~~2.292796~~	462	1.161893	925	1.216291	2310	1.452334	4620	1.383572	9250	1.315231
Perfluorononanoic acid (PFNA)	250	0.4144713	500	0.6251253	1000	0.5938381	2500	0.4905068	5000	0.509537	10000	0.5796983
Perfluorodecanoic acid (PFDA)	250	1.089898	500	1.138159	1000	0.9864382	2500	1.016396	5000	0.9616341	10000	1.071626
NMeFOSAA	250	1.626442	500	1.319761	1000	0.9617701	2500	1.04903	5000	1.075666	10000	1.183556
Perfluoroundecanoic acid (PFUI	250	1.269934	500	0.8989251	1000	1.025512	2500	1.13886	5000	0.9898542	10000	1.037607
NEtFOSAA	250	~~1.271259~~	500	1.284813	1000	0.9270999	2500	0.8888949	5000	0.9762878	10000	1.080993
Perfluorododecanoic acid (PFD	250	1.906006	500	1.415175	1000	1.224296	2500	1.283836	5000	1.229481	10000	1.342362
Perfluorotridecanoic acid (PFTrI	250	1.387563	500	1.775186	1000	1.470729	2500	1.606464	5000	1.373638	10000	1.509834
Perfluorotetradecanoic acid (PF	250	~~1.737492~~	500	1.403562	1000	1.277034	2500	1.091109	5000	1.117253	10000	1.153418
13C-PFHxA	2000	1.289448	4000	1.316496	6000	1.330236	8000	1.224187	10000	1.242506	15000	1.172812
13C-PFDA	2000	0.583481	4000	0.7116219	6000	0.6756062	8000	0.698991	10000	0.6360243	15000	0.6275624
d5-NEtFOSAA	8000	0.9579768	16000	0.9908267	24000	0.8710198	32000	0.8773343	40000	0.9458127	60000	0.884214

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SOP 434-PFAAS

Client: AECOM Environment - Latham, NY SDG: 18L0603

Project: 60284002 - Utica, NY

Calibration: 1800396 Instrument: HPLC1

Calibration Date: 12/21/2018 2:04:32PM

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
		RF		RF		RF		RF		RF		RF
Perfluorobutanesulfonic acid (PI	22100	0.9768111	44200	0.9039574								
Perfluorohexanoic acid (PFHxA)	25000	1.103316	50000	1.130385								
Perfluoroheptanoic acid (PFHpA	25000	1.188519	50000	1.219099								
Perfluorobutanoic acid (PFBA)	25000	0.5545321	50000	0.559409								
Perfluorodecanesulfonic acid (P	24100	0.7858636	48200	0.7098861								
Perfluoroheptanesulfonic acid (F	23800	0.6030008	47500	0.6062265								
Perfluorooctanesulfonamide (FC	25000	3.54457	50000	3.472226								
Perfluoropentanoic acid (PFPeA	25000	0.7096891	50000	0.6909681								
6:2 Fluorotelomersulfonate (6:2	23800	0.1967888	47500	0.2137404								
8:2 Fluorotelomersulfonate (8:2	24000	0.2236787	48000	0.2157763								
Perfluorohexanesulfonic acid (P	22800	0.8380092	45500	0.8429708								
Perfluorooctanoic acid (PFOA)	25000	1.166206	50000	1.123443								
Perfluorooctanesulfonic acid (PI	23100	1.267798	46200	1.231987								
Perfluorononanoic acid (PFNA)	25000	0.5766983	50000	0.5977742								
Perfluorodecanoic acid (PFDA)	25000	0.9987181	50000	0.9686963								
NMeFOSAA	25000	1.135393	50000	1.146731								
Perfluoroundecanoic acid (PFU	25000	1.000778	50000	0.9758854								
NEtFOSAA	25000	0.9454192	50000	0.8842324								
Perfluorododecanoic acid (PFD	25000	1.336296	50000	1.365489								
Perfluorotridecanoic acid (PFTr	25000	1.442866	50000	1.509825								
Perfluorotetradecanoic acid (PF	25000	1.158672	50000	1.143205								
13C-PFHxA	20000	1.207898	25000	1.253332								
13C-PFDA	20000	0.6316968	25000	0.6500093								
d5-NEtFOSAA	80000	0.8563812	100000	0.8688068								

6 - FORM VI
INITIAL CALIBRATION DATA SHEET (Continued)

SOP 434-PFAAS

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Calibration:	1800396	Instrument:	HPLC1
		Calibration Date:	12/21/2018 2:04:32PM

COMPOUND	Mean RF	RF RSD	Linear r^2	Quad COD	LIMIT	Q
Perfluorobutanesulfonic acid (PFBS)	1.000668	13.1				
Perfluorohexanoic acid (PFHxA)	1.164398	9.5				
Perfluoroheptanoic acid (PFHpA)	1.191572	11.9				
Perfluorobutanoic acid (PFBA)	0.5861229	8.1				
Perfluorodecanesulfonic acid (PFDS)	0.8090761	16.2				
Perfluoroheptanesulfonic acid (PFHpS)	0.6355485	18.9				
Perfluorooctanesulfonamide (FOSA)	3.677559	9.9				
Perfluoropentanoic acid (PFPeA)	0.7376181	9.8				
6:2 Fluorotelomersulfonate (6:2 FTS)	0.2262803	24.6				
8:2 Fluorotelomersulfonate (8:2 FTS)	0.241249	21.9				
Perfluorohexanesulfonic acid (PFHxS)	0.861231	5.5				
Perfluorooctanoic acid (PFOA)	1.132236	12.8				
Perfluorooctanesulfonic acid (PFOS)	1.289872	7.8				
Perfluorononanoic acid (PFNA)	0.5484562	12.9				
Perfluorodecanoic acid (PFDA)	1.028946	6.2				
NMeFOSAA	1.187294	17.4				
Perfluoroundecanoic acid (PFUnA)	1.042169	10.9				
NEtFOSAA	0.9982486	14.3				
Perfluorododecanoic acid (PFDoA)	1.387868	15.8				
Perfluorotridecanoic acid (PFTrDA)	1.509513	8.6				
Perfluorotetradecanoic acid (PFTA)	1.192036	9.2				
13C-PFHxA	1.254614	4.3				
13C-PFDA	0.6518741	6.4				
d5-NEtFOSAA	0.9065465	5.6				

INITIAL CALIBRATION STANDARDS

SOP 434-PFAAS

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Sequence:	S030508	Instrument:	HPLC1
Calibration:	1800396		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
1812320	1.0 ppb PFAS	S030508-CAL3	lims export files full-001	12/20/18 21:40
1812321	2.5 ppb PFAS	S030508-CAL4	lims export files full-002	12/20/18 21:53
1812322	5.0 ppb PFAS	S030508-CAL5	lims export files full-003	12/20/18 22:06
1812323	10.0 ppb PFAS	S030508-CAL6	lims export files full-004	12/20/18 22:18
1812324	25.0 ppb PFAS	S030508-CAL7	lims export files full-005	12/20/18 22:31
1812325	50.0 ppb PFAS	S030508-CAL8	lims export files full-006	12/20/18 22:44
1812318	0.25 ppb PFAS	S030508-CAL1	lims export files full-008	12/21/18 12:51
1812319	0.5 ppb PFAS	S030508-CAL2	lims export files full-009	12/21/18 13:03

Calibration Report

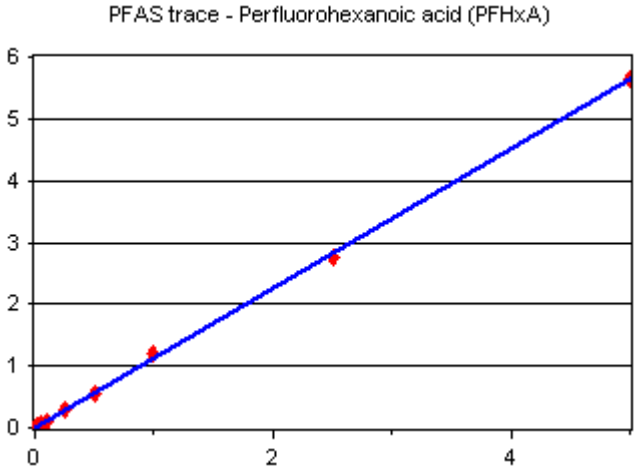
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Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

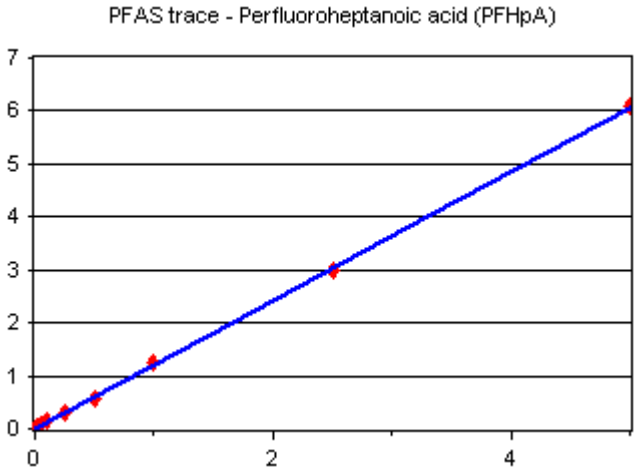
PFAS trace

Perfluorohexanoic acid (PFHxA)



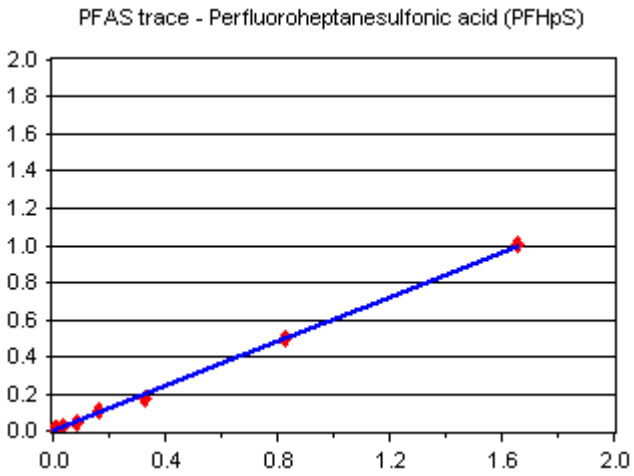
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9996572
[Y] = 1.129668 * [X]

Perfluoroheptanoic acid (PFHpA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9996863
[Y] = 1.211729 * [X]

Perfluoroheptanesulfonic acid (PFHpS)



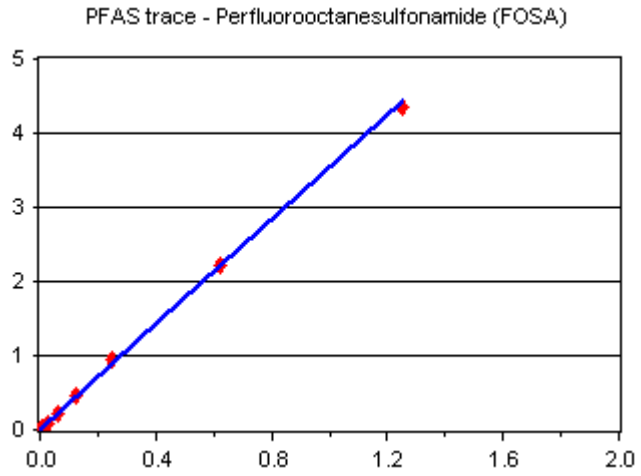
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r2: 0.9991959
[Y] = 0.5983487 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

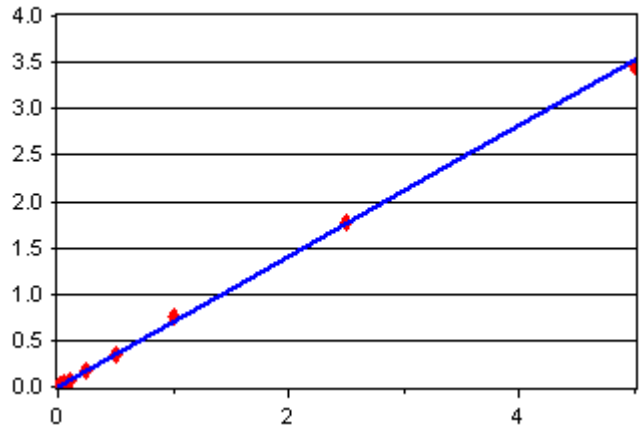
PFAS trace (Continued)

Perfluorooctanesulfonamide (FOSA)



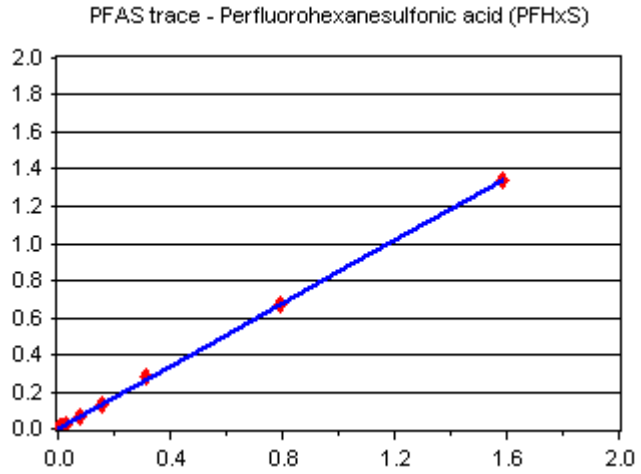
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r2: 0.9992533
[Y] = 3.543933 * [X]

Perfluoropentanoic acid (PFPeA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9991009
[Y] = 0.705114 * [X]

Perfluorohexanesulfonic acid (PFHxS)



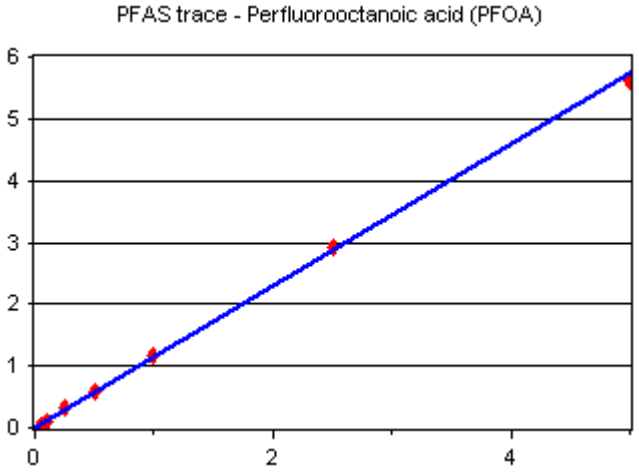
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9999218
[Y] = 0.8445512 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

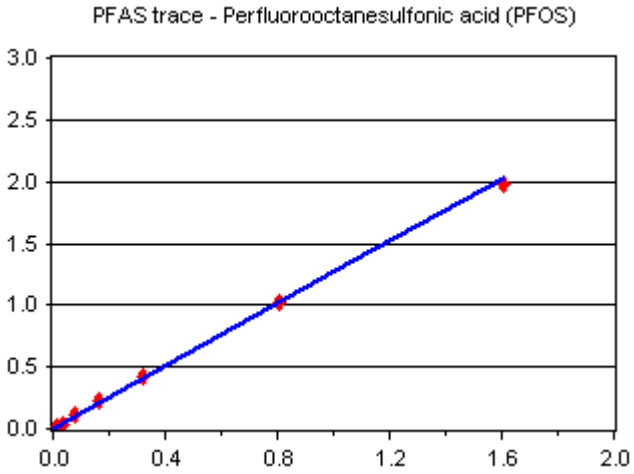
PFAS trace (Continued)

Perfluorooctanoic acid (PFOA)



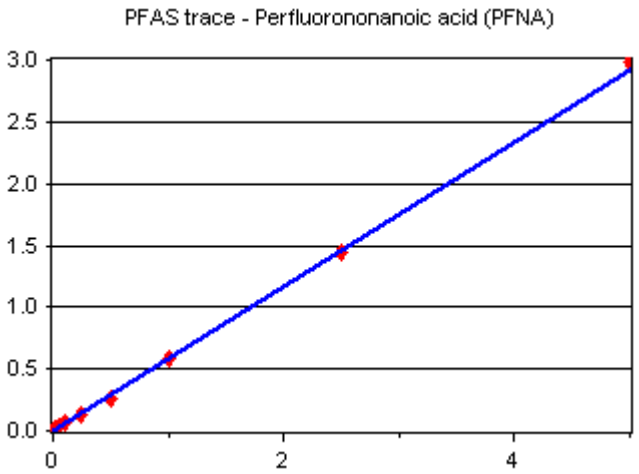
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r2: 0.9992508
[Y] = 1.145869 * [X]

Perfluorooctanesulfonic acid (PFOS)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9988787
[Y] = 1.263756 * [X]

Perfluorononanoic acid (PFNA)



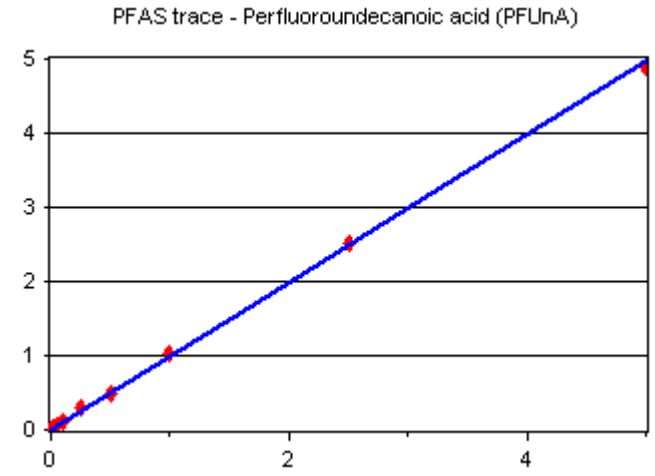
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9989531
[Y] = 0.5823567 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

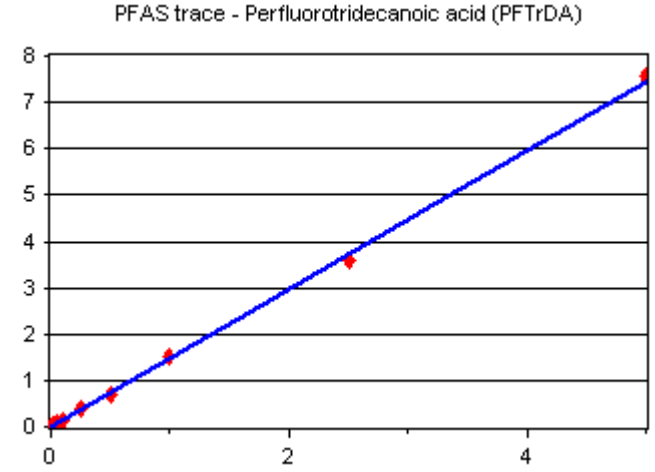
PFAS trace (Continued)

Perfluoroundecanoic acid (PFUnA)



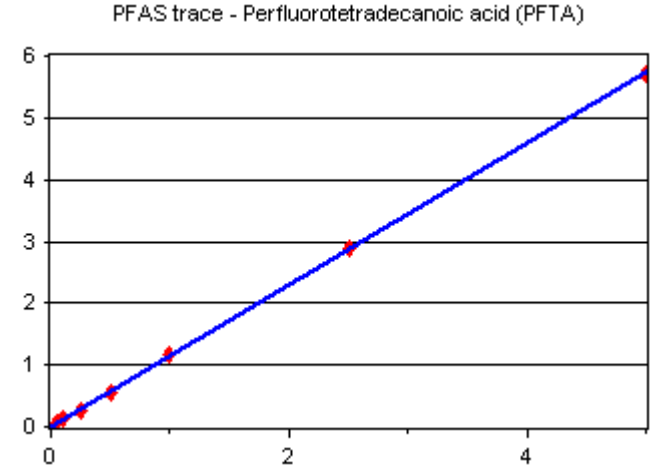
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9993882
[Y] = 0.9949992 * [X]

Perfluorotridecanoic acid (PFTrDA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9993912
[Y] = 1.488072 * [X]

Perfluorotetradecanoic acid (PFTA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9999181
[Y] = 1.148448 * [X]

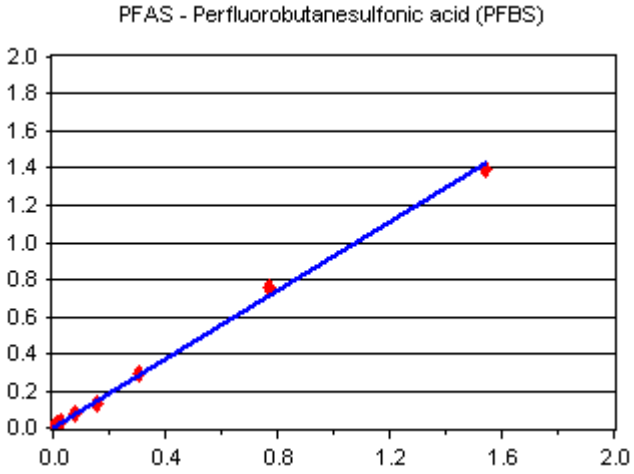
PFAS

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

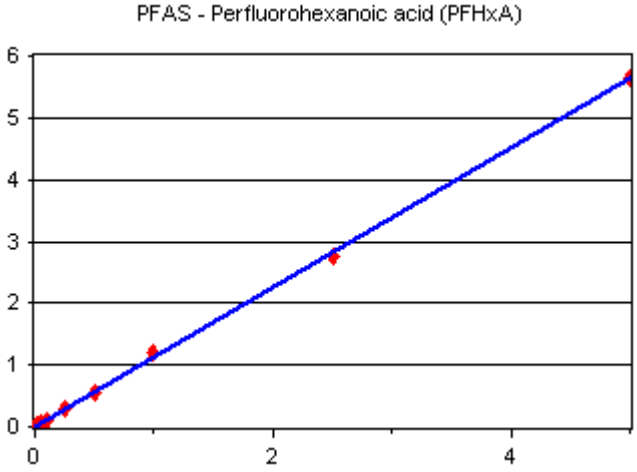
PFAS (Continued)

Perfluorobutanesulfonic acid (PFBS)



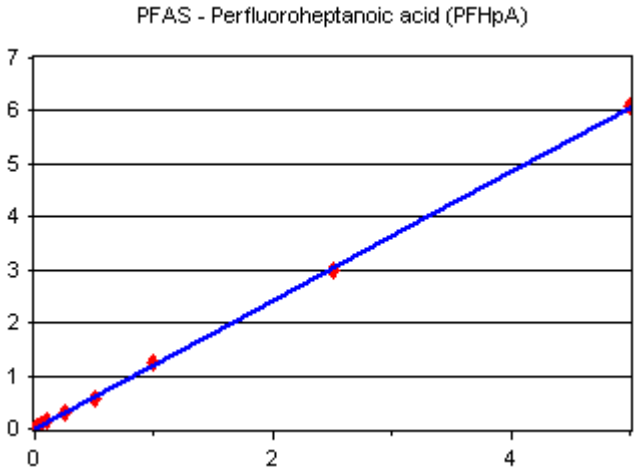
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9980559
[Y] = 0.9295738 * [X]

Perfluorohexanoic acid (PFHxA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9996572
[Y] = 1.129668 * [X]

Perfluoroheptanoic acid (PFHpA)



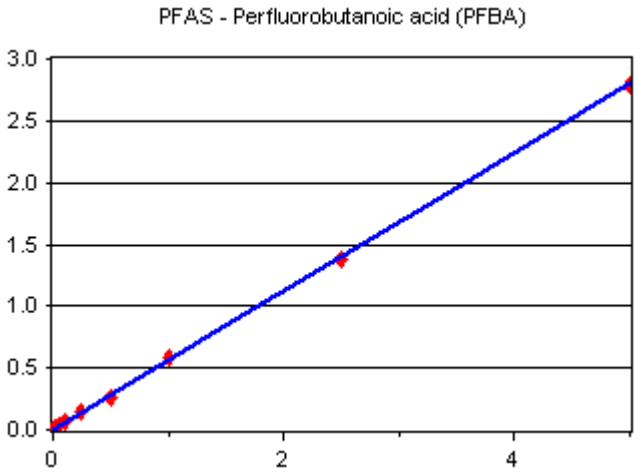
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9996863
[Y] = 1.211729 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

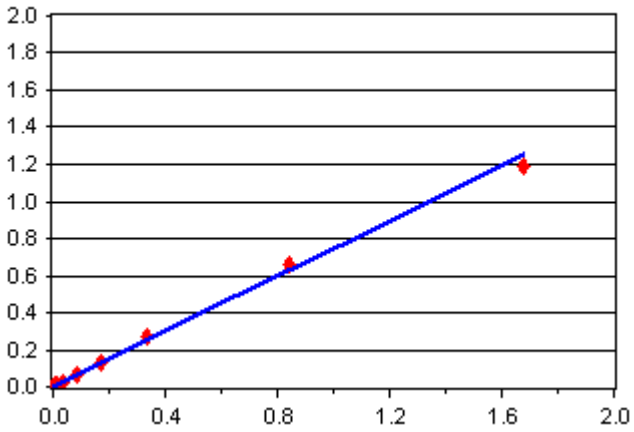
PFAS (Continued)

Perfluorobutanoic acid (PFBA)



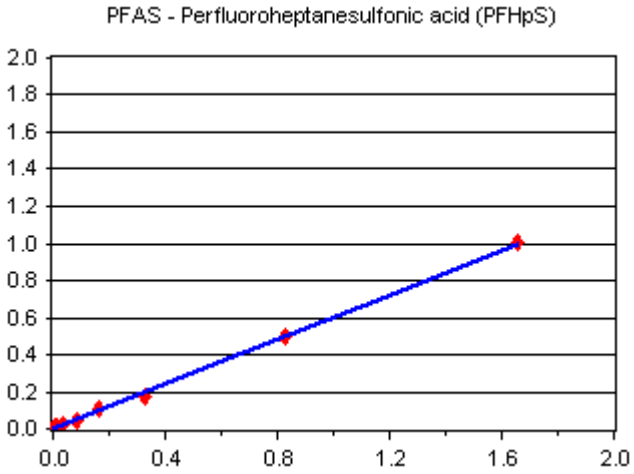
Linear Regression Weighted 1/X Force thru Zero
r2: 0.999777
[Y] = 0.5610078 * [X]

Perfluorodecanesulfonic acid (PFDS)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9956197
[Y] = 0.7480279 * [X]

Perfluoroheptanesulfonic acid (PFHpS)



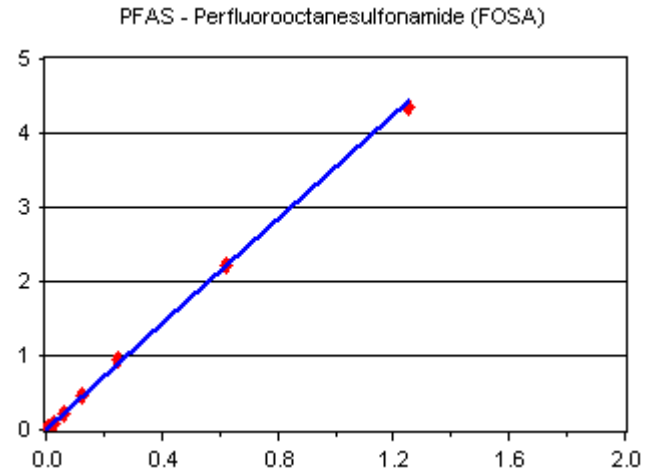
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9991959
[Y] = 0.5983487 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

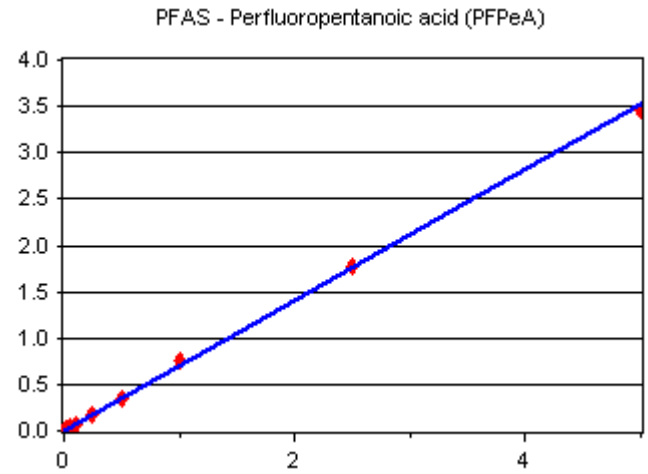
PFAS (Continued)

Perfluorooctanesulfonamide (FOSA)



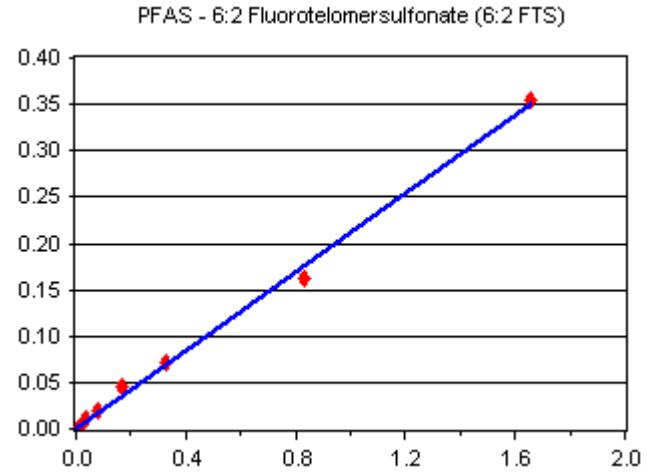
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9992533
[Y] = 3.543933 * [X]

Perfluoropentanoic acid (PFPeA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9991009
[Y] = 0.705114 * [X]

6:2 Fluorotelomersulfonate (6:2 FTS)



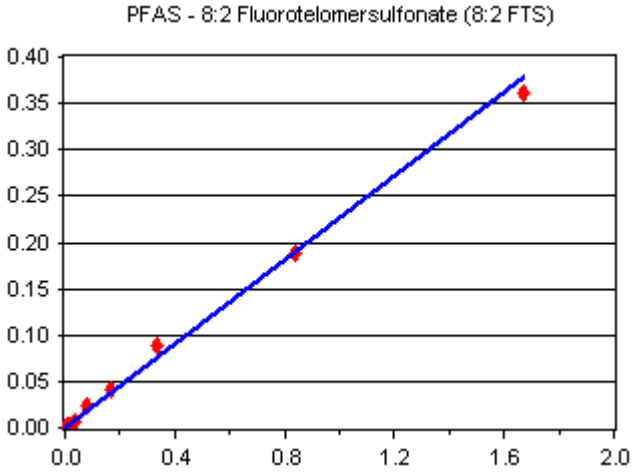
Linear Regression Force thru Zero
r2: 0.9970512
[Y] = 0.2110397 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

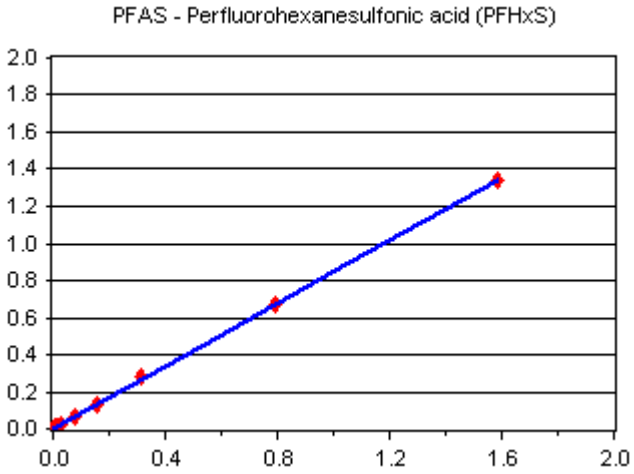
PFAS (Continued)

8:2 Fluorotelomersulfonate (8:2 FTS)



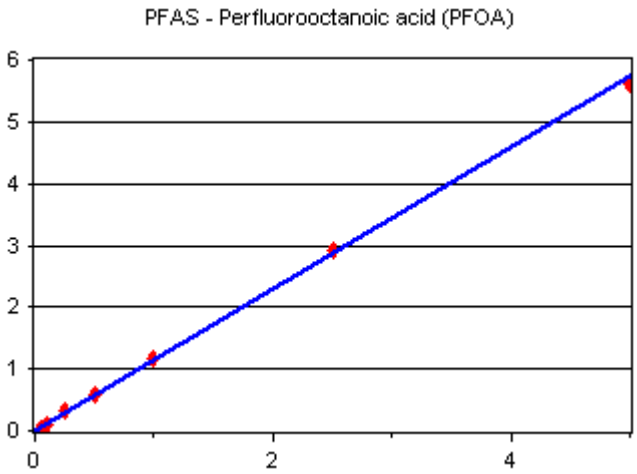
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9956703
[Y] = 0.2259949 * [X]

Perfluorohexanesulfonic acid (PFHxS)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9999218
[Y] = 0.8445512 * [X]

Perfluorooctanoic acid (PFOA)

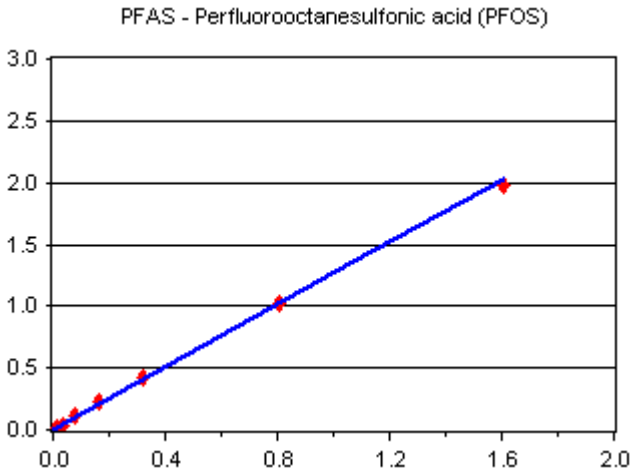


Linear Regression Weighted 1/X Force thru Zero
r2: 0.9992508
[Y] = 1.145869 * [X]

Instrument: HPLC1
Calibration ID: 1800396
Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

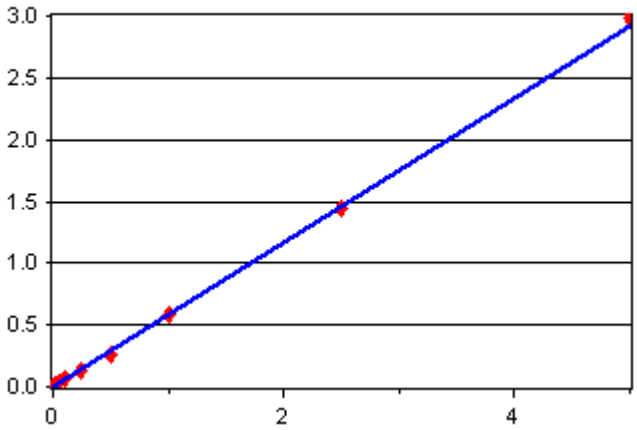
PFAS (Continued)

Perfluorooctanesulfonic acid (PFOS)



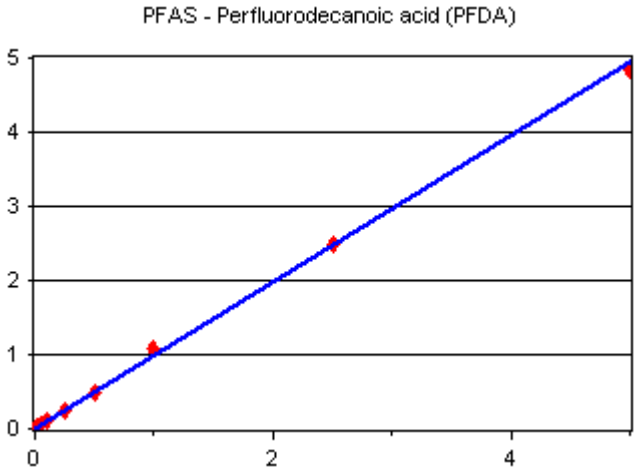
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9988787
[Y] = 1.263756 * [X]

Perfluorononanoic acid (PFNA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9989531
[Y] = 0.5823567 * [X]

Perfluorodecanoic acid (PFDA)



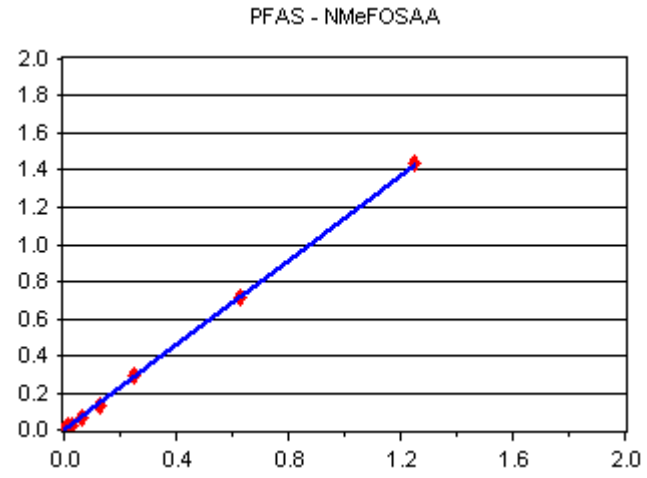
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9990778
[Y] = 0.9898799 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

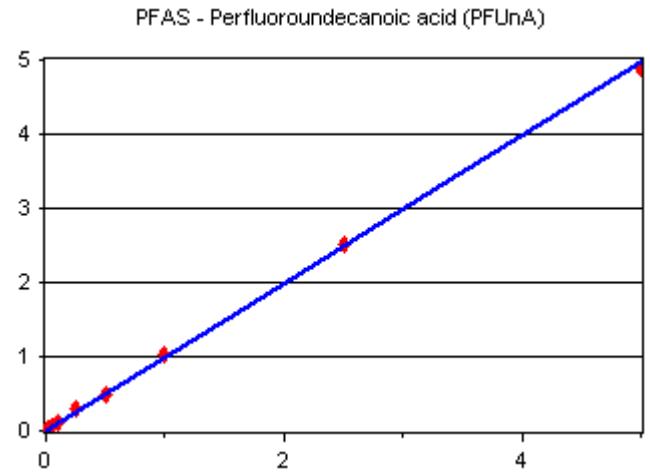
PFAS (Continued)

NMeFOSAA



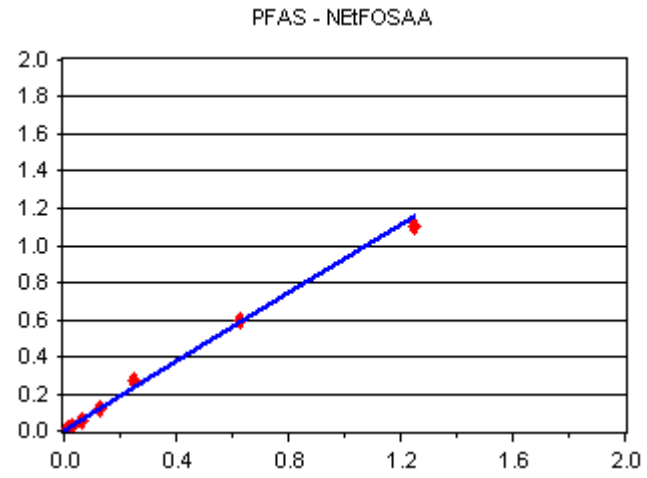
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9998281
[Y] = 1.141497 * [X]

Perfluoroundecanoic acid (PFUnA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9993882
[Y] = 0.9949992 * [X]

NEtFOSAA



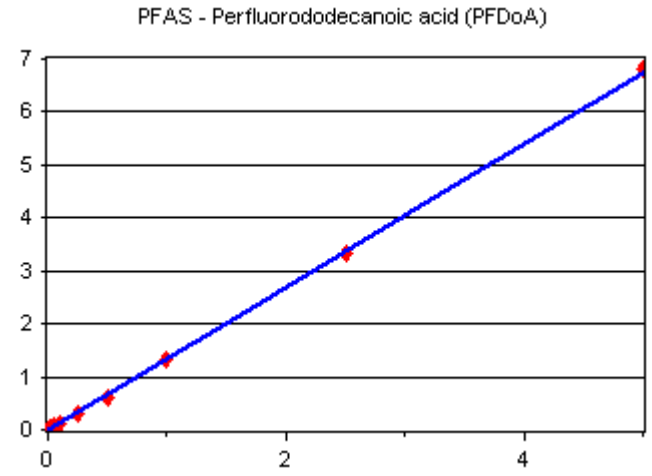
Linear Regression Weighted 1/X Force thru Zero
r2: 0.995165
[Y] = 0.9290448 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

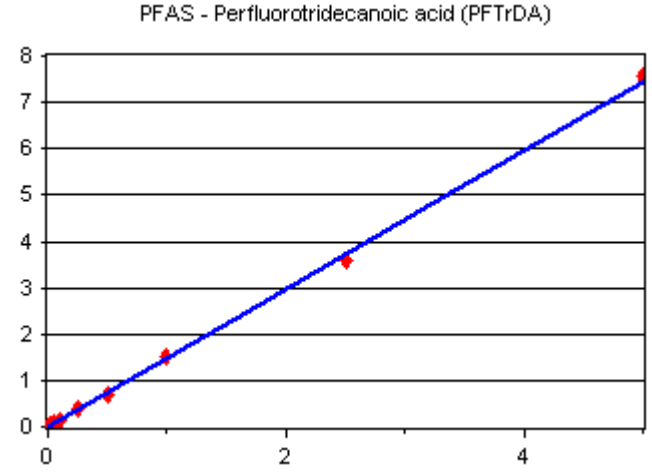
PFAS (Continued)

Perfluorododecanoic acid (PFDoA)



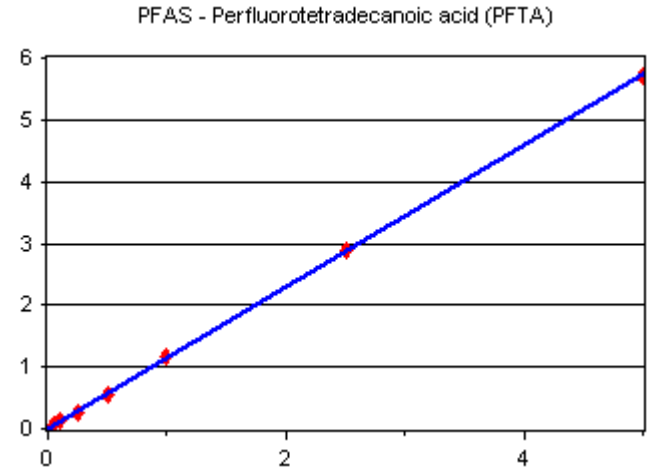
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9996495
[Y] = 1.346109 * [X]

Perfluorotridecanoic acid (PFTrDA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9993912
[Y] = 1.488072 * [X]

Perfluorotetradecanoic acid (PFTA)



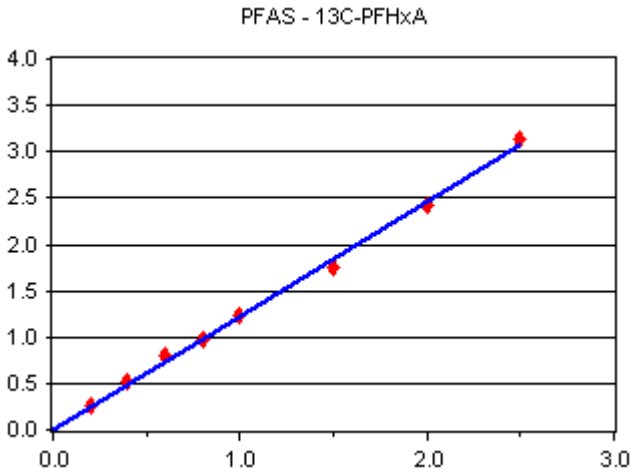
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9999181
[Y] = 1.148448 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

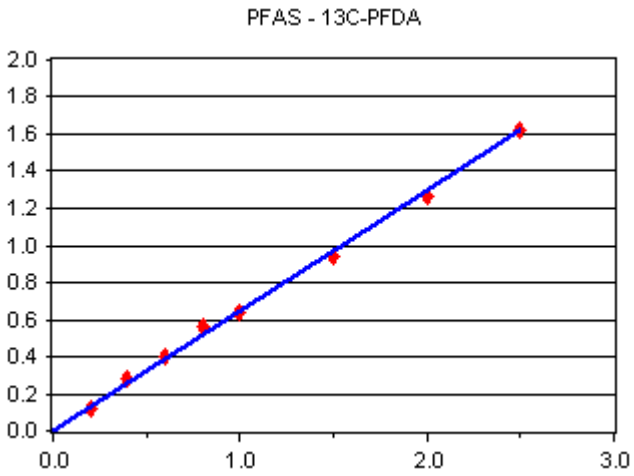
PFAS (Continued)

13C-PFHxA



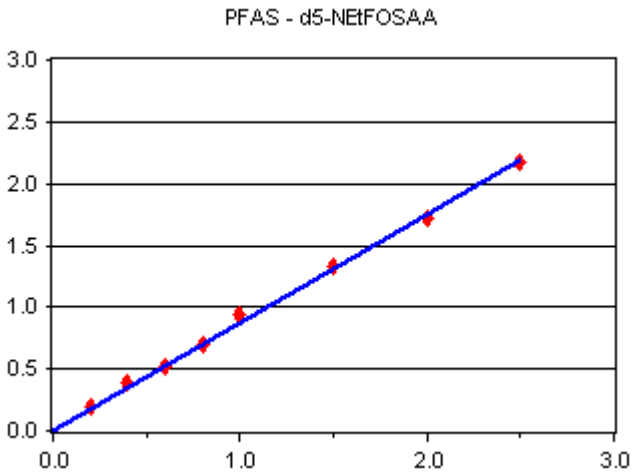
Linear Regression Force thru Zero
r2: 0.9973746
[Y] = 1.229308 * [X]

13C-PFDA



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9973378
[Y] = 0.6479651 * [X]

d5-NEtFOSAA



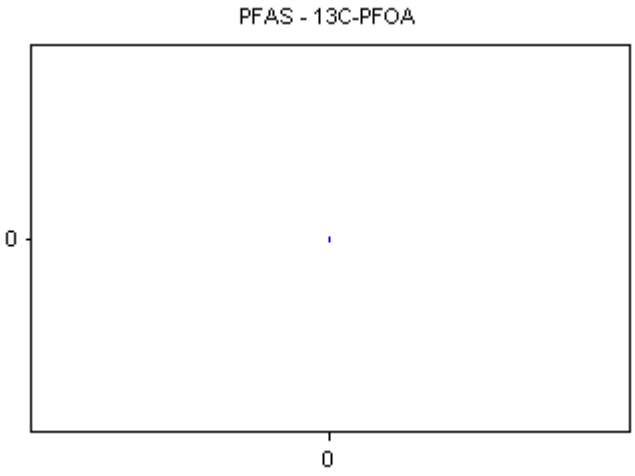
Linear Regression Force thru Zero
r2: 0.9972147
[Y] = 0.8750186 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

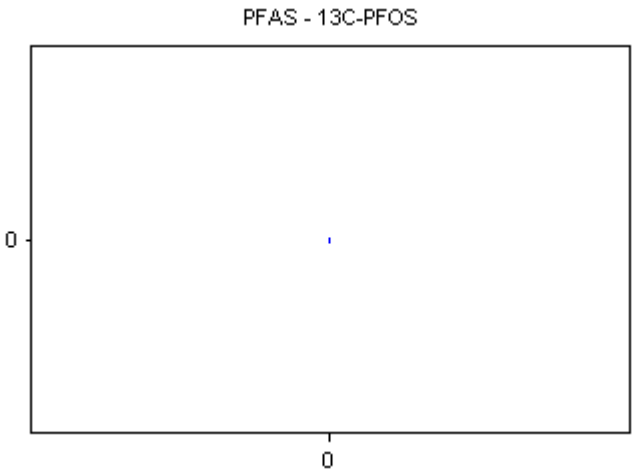
PFAS (Continued)

13C-PFOA



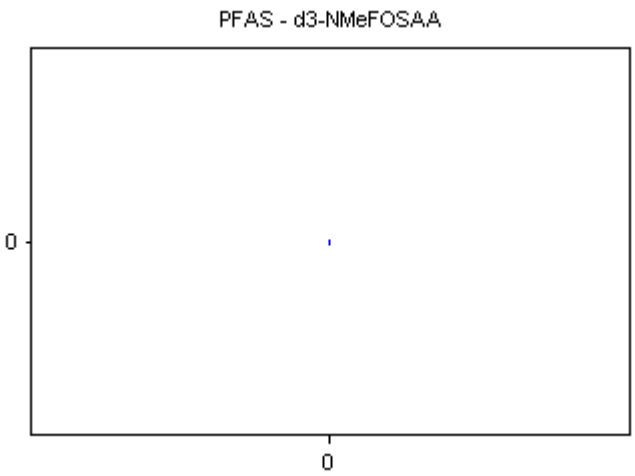
Linear Regression Weighted 1/X Force thru Zero
r2:
[Y] = * [X]

13C-PFOS



Linear Regression Weighted 1/X Force thru Zero
r2:
[Y] = * [X]

d3-NMeFOSAA



Linear Regression Weighted 1/X Force thru Zero
r2:
[Y] = * [X]

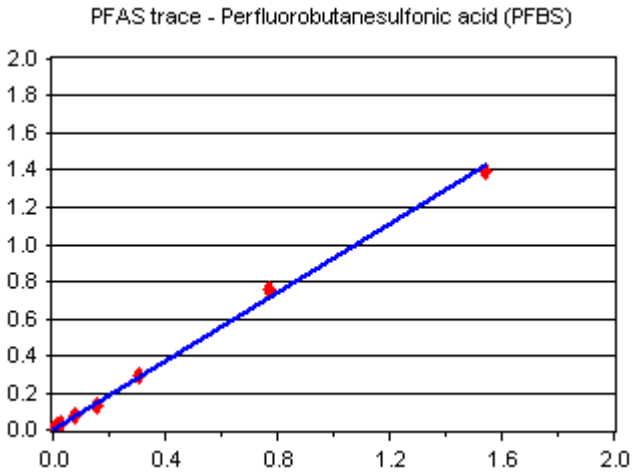
PFAS trace

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

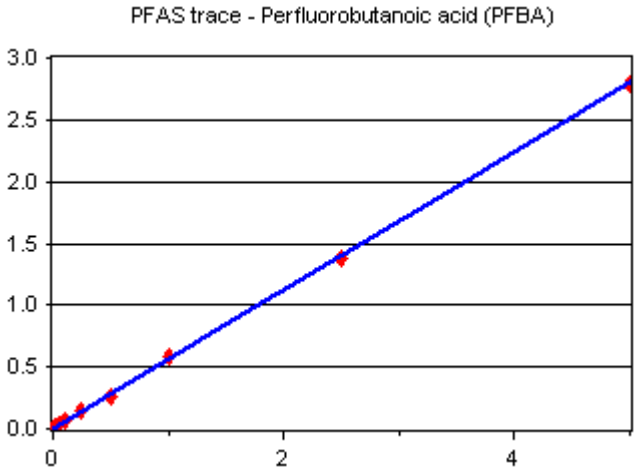
PFAS trace (Continued)

Perfluorobutanesulfonic acid (PFBS)



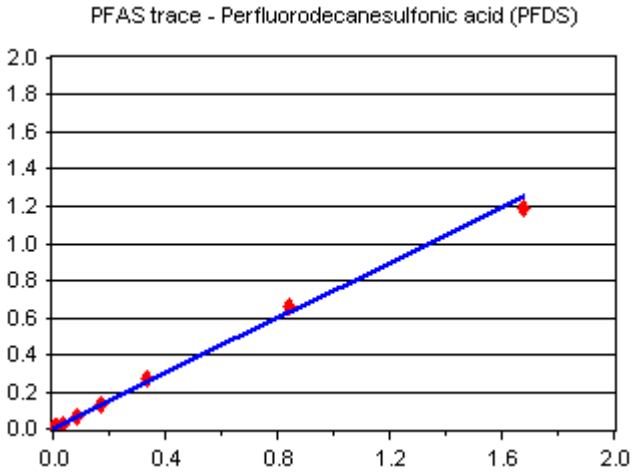
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9980559
[Y] = 0.9295738 * [X]

Perfluorobutanoic acid (PFBA)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.999777
[Y] = 0.5610078 * [X]

Perfluorodecanesulfonic acid (PFDS)



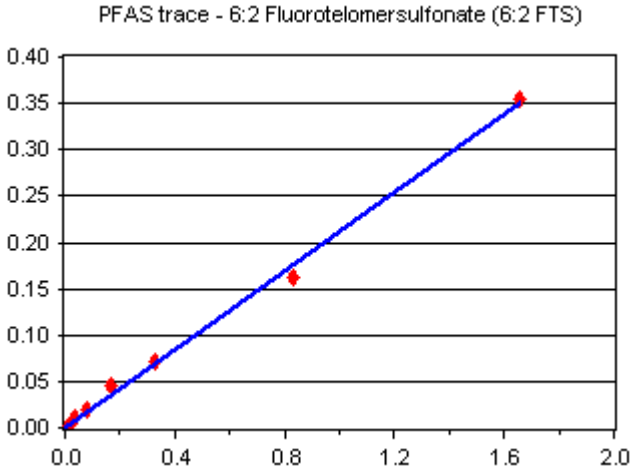
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9956197
[Y] = 0.7480279 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

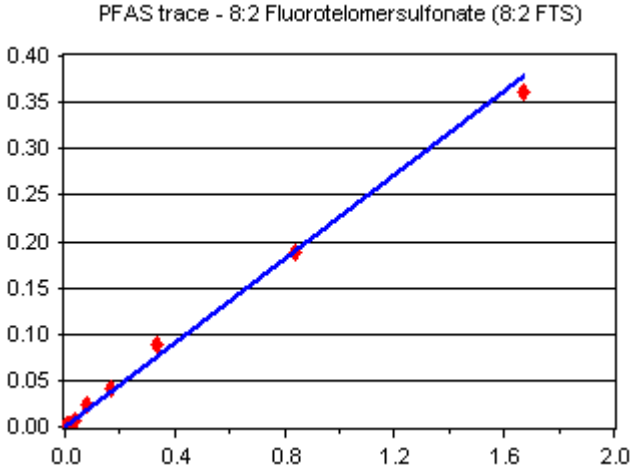
PFAS trace (Continued)

6:2 Fluorotelomersulfonate (6:2 FTS)



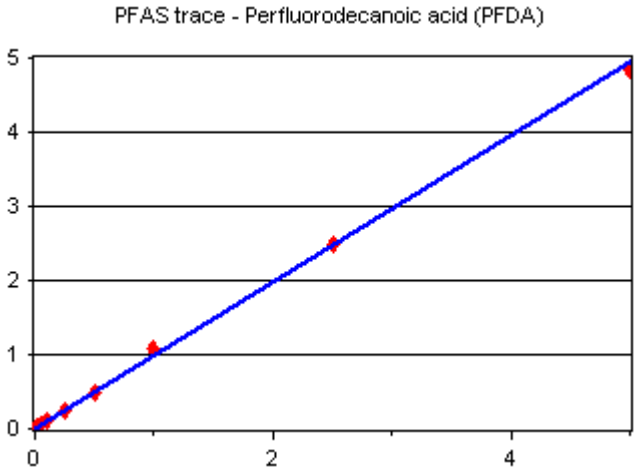
Linear Regression Force thru Zero
r2: 0.9970512
[Y] = 0.2110397 * [X]

8:2 Fluorotelomersulfonate (8:2 FTS)



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9956703
[Y] = 0.2259949 * [X]

Perfluorodecanoic acid (PFDA)



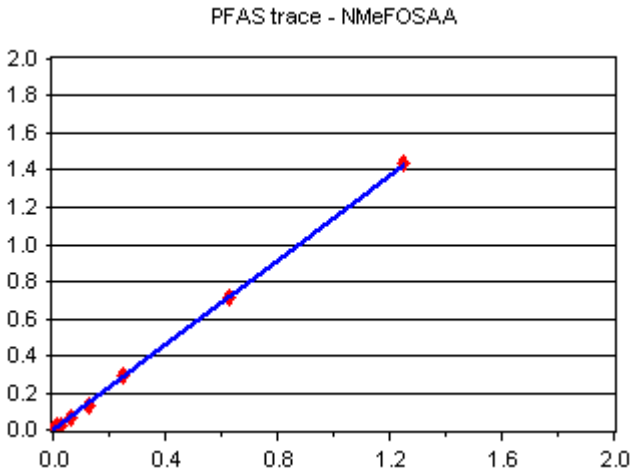
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9990778
[Y] = 0.9898799 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

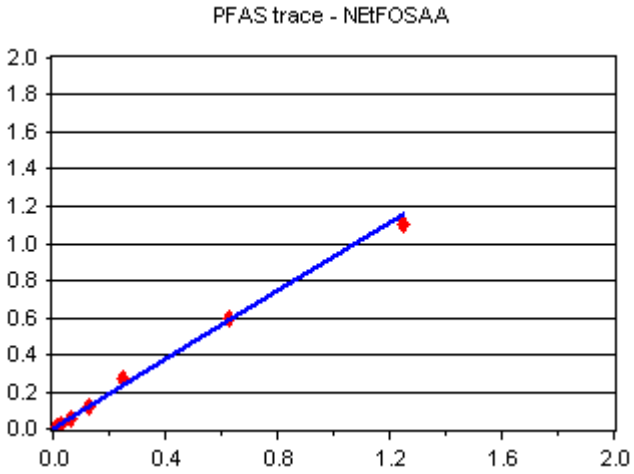
PFAS trace (Continued)

NMeFOSAA



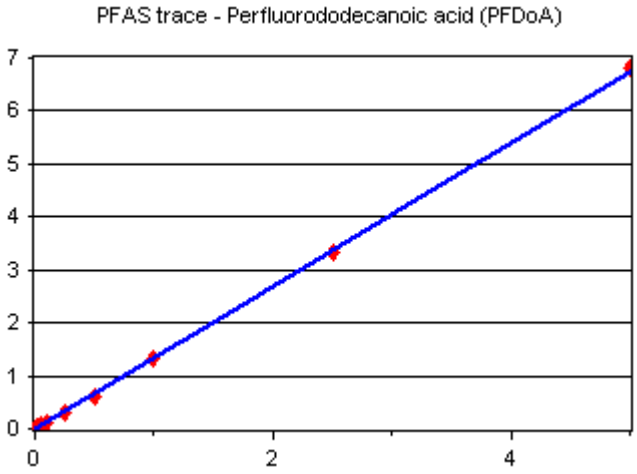
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9998281
[Y] = 1.141497 * [X]

NEtFOSAA



Linear Regression Weighted 1/X Force thru Zero
r2: 0.995165
[Y] = 0.9290448 * [X]

Perfluorododecanoic acid (PFDoA)



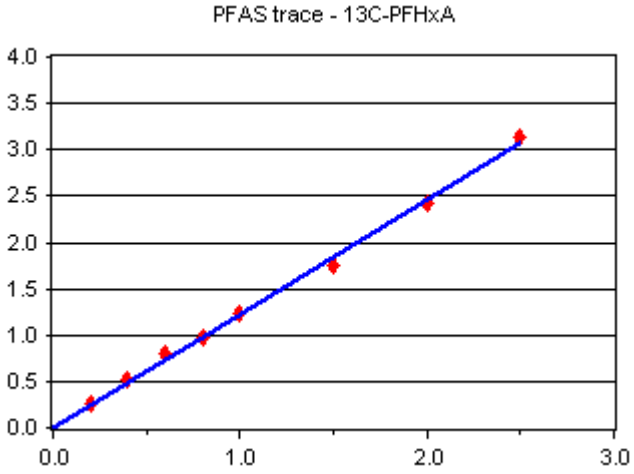
Linear Regression Weighted 1/X Force thru Zero
r2: 0.9996495
[Y] = 1.346109 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

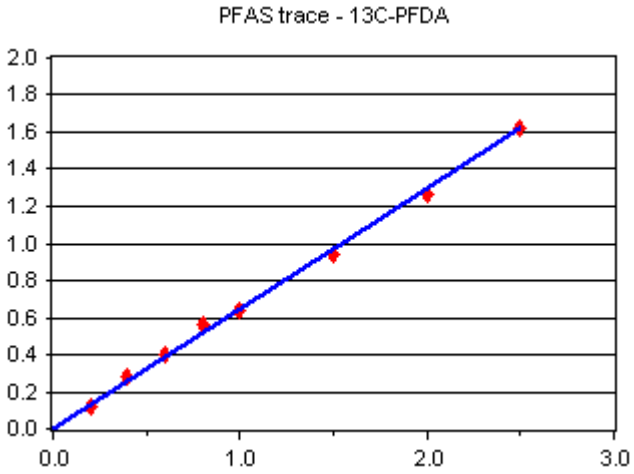
PFAS trace (Continued)

13C-PFHxA



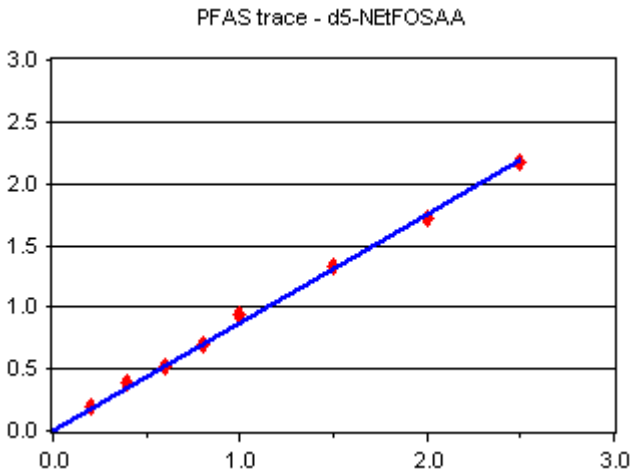
Linear Regression Force thru Zero
r2: 0.9973746
[Y] = 1.229308 * [X]

13C-PFDA



Linear Regression Weighted 1/X Force thru Zero
r2: 0.9973378
[Y] = 0.6479651 * [X]

d5-NEtFOSAA



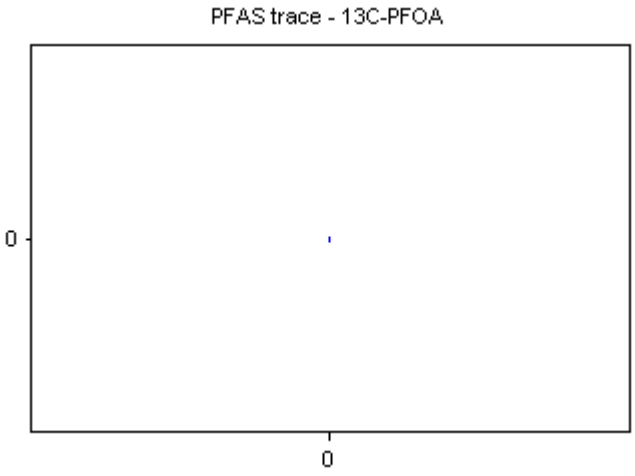
Linear Regression Force thru Zero
r2: 0.9972147
[Y] = 0.8750186 * [X]

Instrument: HPLC1
Calibration ID: 1800396

Calibration Date: 12/21/18 14:04 By BLM
Last Edit Date: 12/21/18 14:04 By BLM

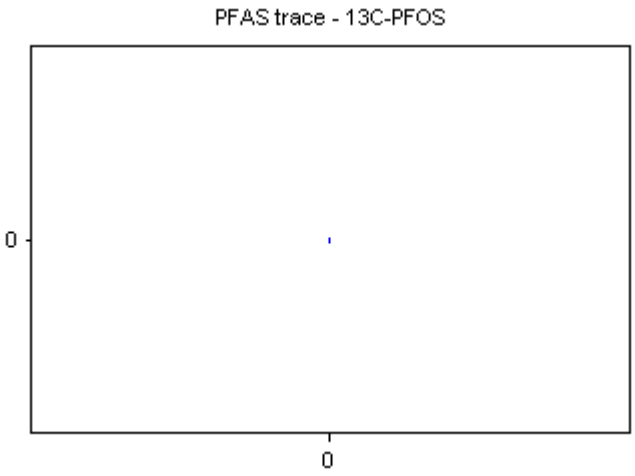
PFAS trace (Continued)

13C-PFOA



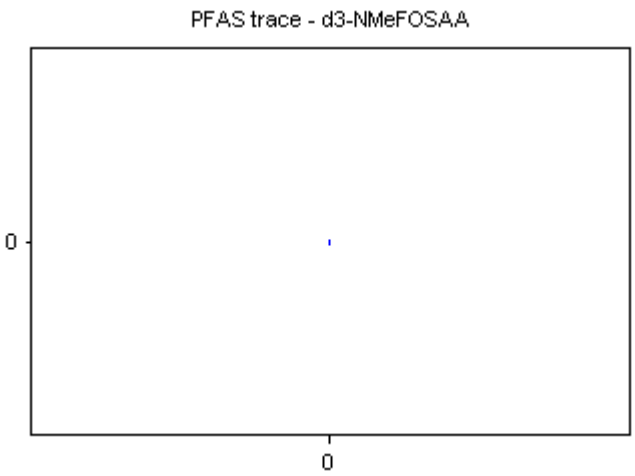
Linear Regression Weighted 1/X Force thru Zero
r2:
[Y] = * [X]

13C-PFOS



Linear Regression Weighted 1/X Force thru Zero
r2:
[Y] = * [X]

d3-NMeFOSAA



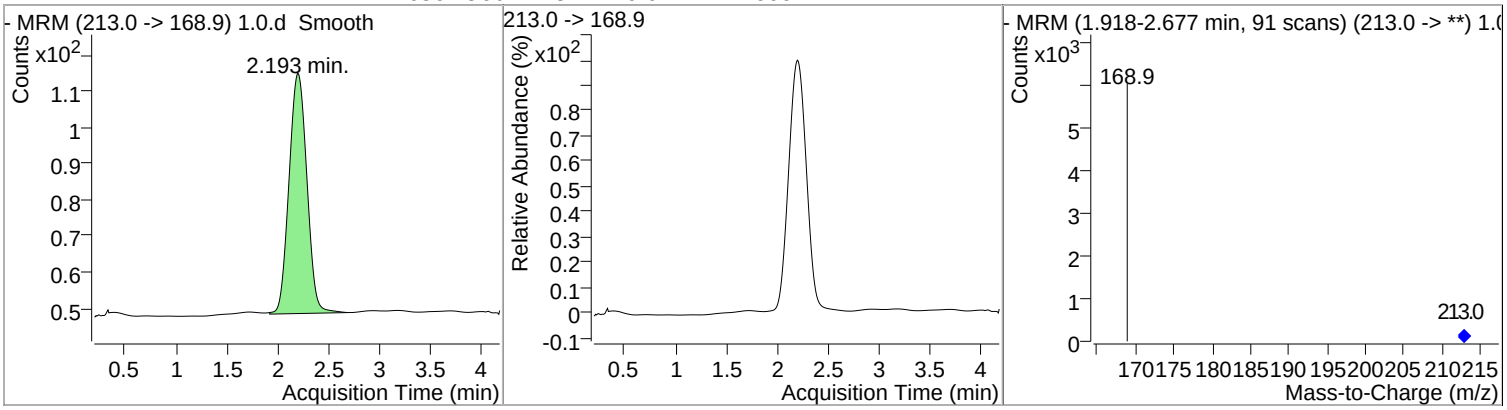
Linear Regression Weighted 1/X Force thru Zero
r2:
[Y] = * [X]

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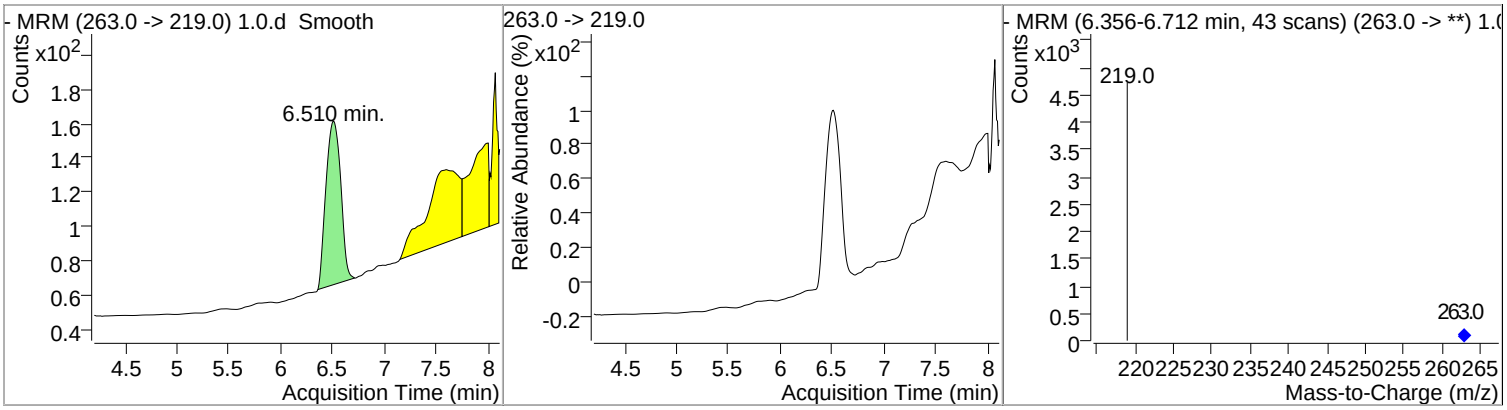
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	8.005	416.9 -> 371.9	13610	10000.0000	pg/ml		0.354
M PFOS C13	8.221	502.9 -> 80.0	11824	28700.0000	pg/ml		0.321
M d3-N-MeFOSAA	8.489	573.2 -> 419.0	12548	40000.0000	pg/ml		0.304
System Monitoring Compounds							
S PFHxA C13	7.350	314.9 -> 269.9	10863	6492.6077	pg/ml		0.413
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 64.93%		*	
S PFDA C13	8.397	514.9 -> 469.9	5517	6255.9506	pg/ml		0.304
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 62.56%		*	
S d5-N-MeFOSAA	8.572	589.2 -> 419.0	6558	23890.3206	pg/ml		0.304
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 59.73%		*	
Target Compounds							QValue
T PFBA	2.193	213.0 -> 168.9	808	1058.1986	pg/ml		100
T PFPeA	6.510	263.0 -> 219.0	950	989.9811	pg/ml		100
T PFBS	6.880	298.9 -> 80.0	370	968.1992	pg/ml		100
T PFHxA	7.350	312.9 -> 268.9	1494	972.0070	pg/ml		100
T PFHpA	7.737	362.9 -> 319.0	1848	1120.2656	pg/ml	m	100
T 6.2 FTS	7.996	427.0 -> 406.8	121	1393.1031	pg/ml		100
T PFOA-Total	8.005	412.9 -> 368.9	1485	951.8708	pg/ml		100
T PFHpS	8.021	449.0 -> 79.7	201	814.4028	pg/ml	m	100
T PFHxS-Total	7.762	398.9 -> 80.0	301	867.5661	pg/ml		100
T PFNA	8.223	462.9 -> 418.9	808	1019.7157	pg/ml		100
T PFOS-Total	8.222	498.9 -> 80.0	464	891.5905	pg/ml		100
T PFDA	8.398	513.1 -> 469.0	1343	996.5233	pg/ml		100
T 8.2 FTS	8.414	527.0 -> 81.0	73	782.8770	pg/ml		100
T N-MeFOSAA	8.489	570.2 -> 419.1	302	842.5518	pg/ml		100
T FOSA	8.542	497.9 -> 77.9	1169	1051.5593	pg/ml		100
T PFDS	8.563	599.0 -> 80.0	319	1034.5090	pg/ml		100
T N-EtFOSAA	8.572	584.2 -> 419.0	291	997.9065	pg/ml	m	100
T PFUnA	8.565	563.1 -> 519.0	1396	1030.6668	pg/ml		100
T PFDoA	8.739	613.1 -> 569.0	1666	909.5071	pg/ml	m	100
T PFTrDA	8.932	663.1 -> 619.0	2002	988.3457	pg/ml	m	100
T PFTA	9.150	713.1 -> 669.1	1738	1111.9653	pg/ml	m	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

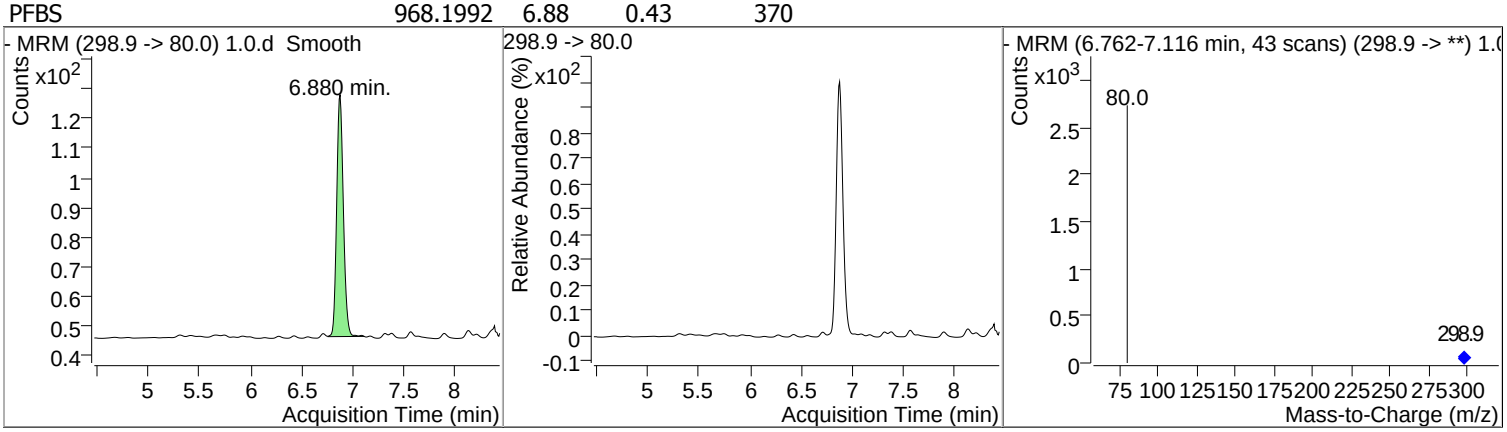
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PFBA	1058.1986	2.19	0.02	808				



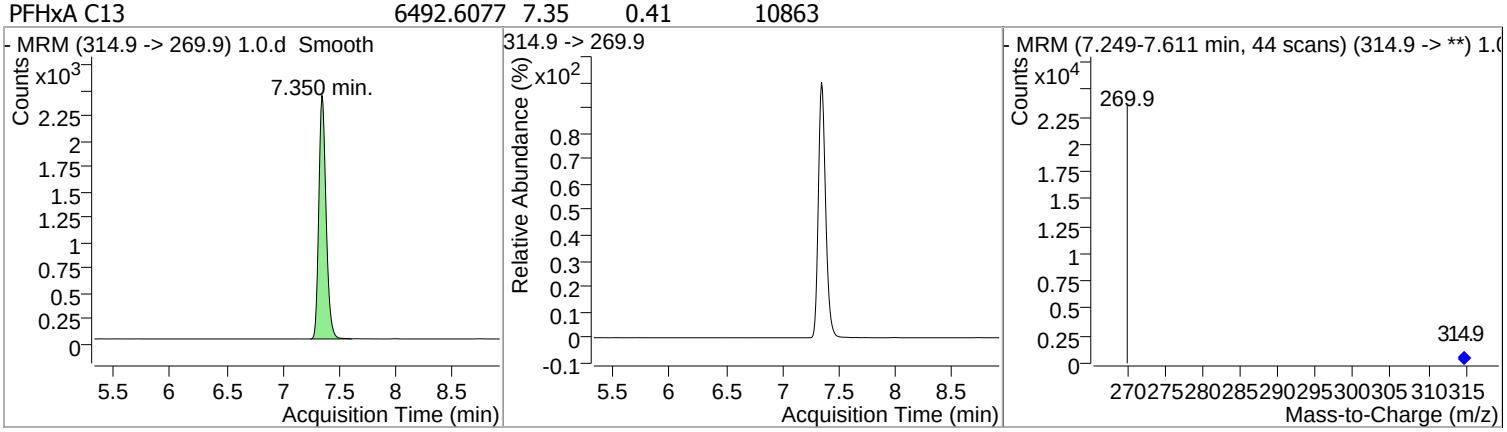
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	989.9811	6.51	0.40	950				



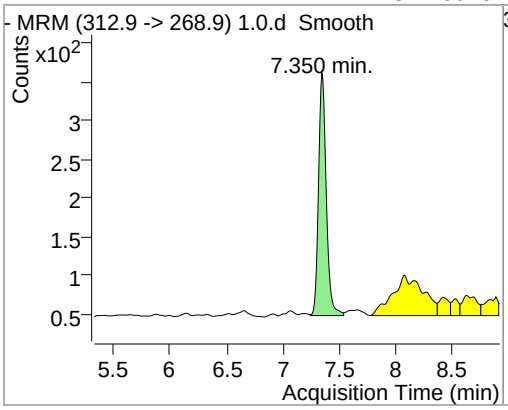
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PFBS	968.1992	6.88	0.43	370				

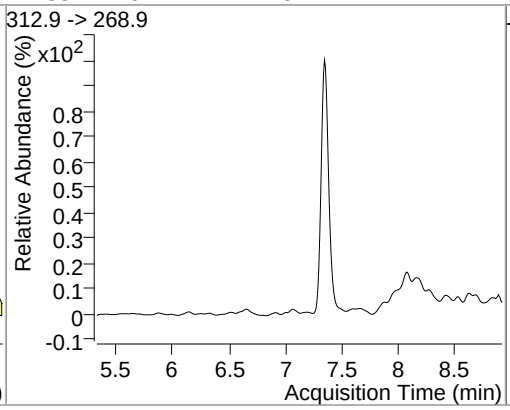


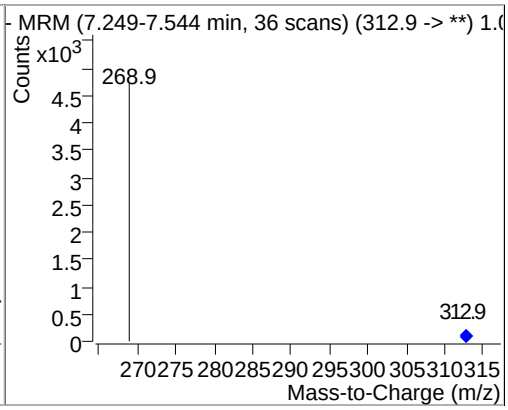
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	6492.6077	7.35	0.41	10863				



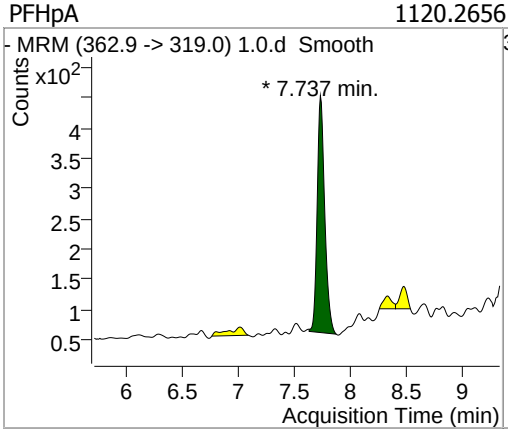
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PFHxA	972.0070	7.35	0.41	1494				

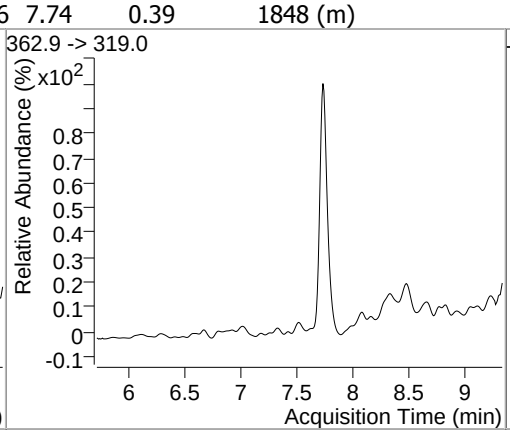


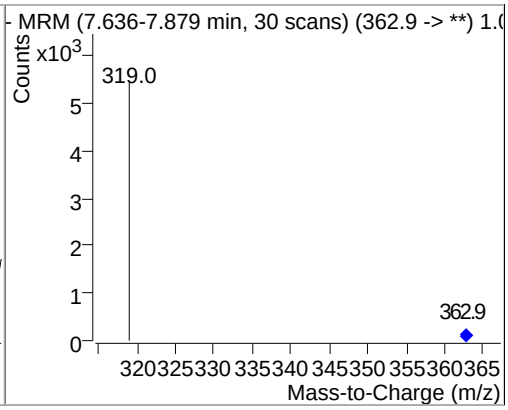




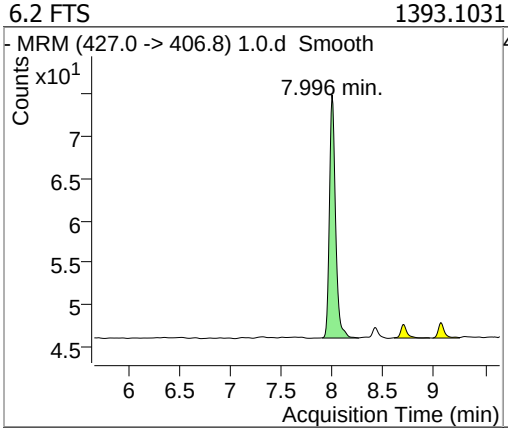
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	1120.2656	7.74	0.39	1848 (m)				

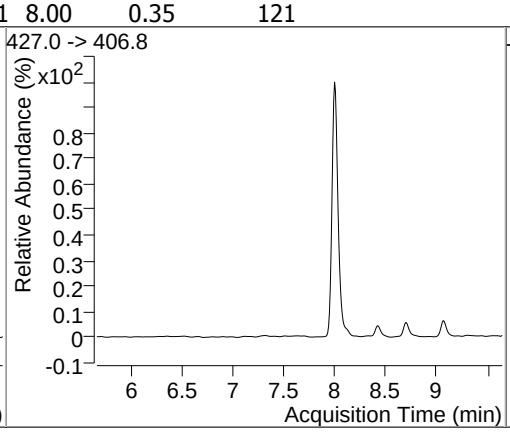


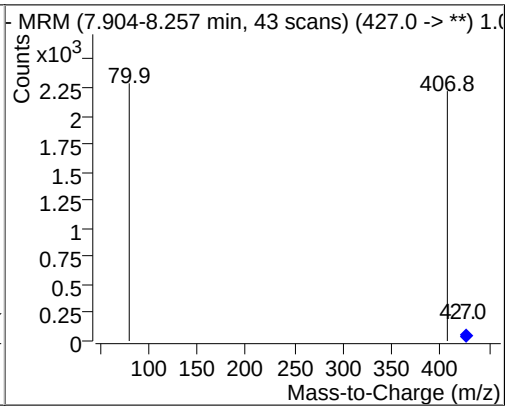




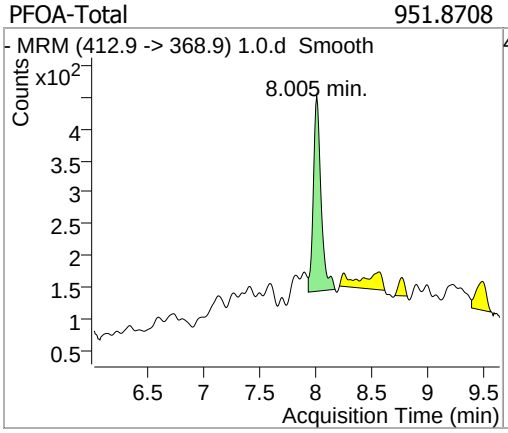
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	1393.1031	8.00	0.35	121				

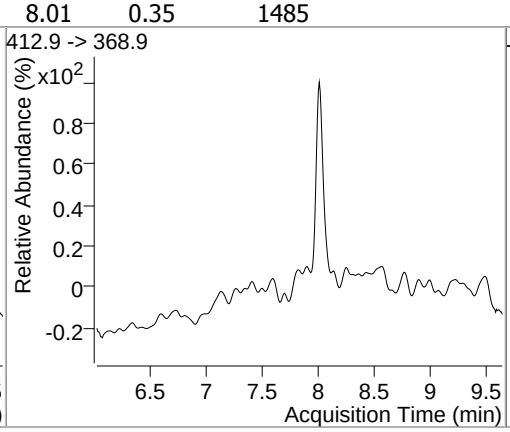


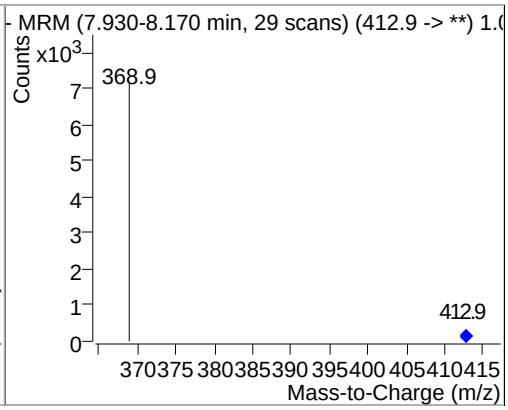




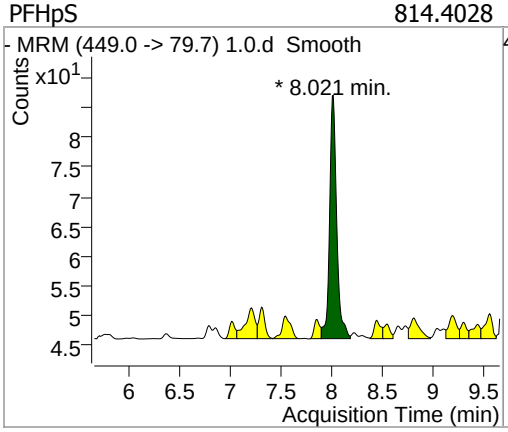
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PFOA-Total	951.8708	8.01	0.35	1485				

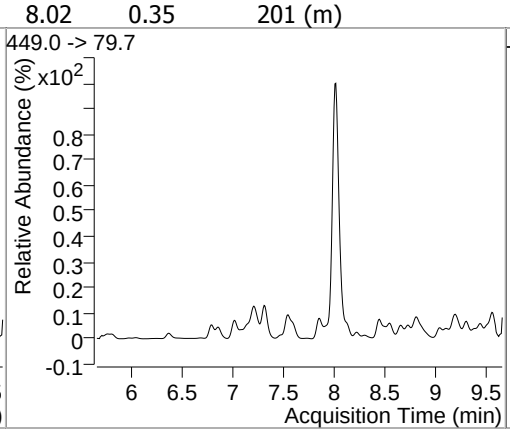


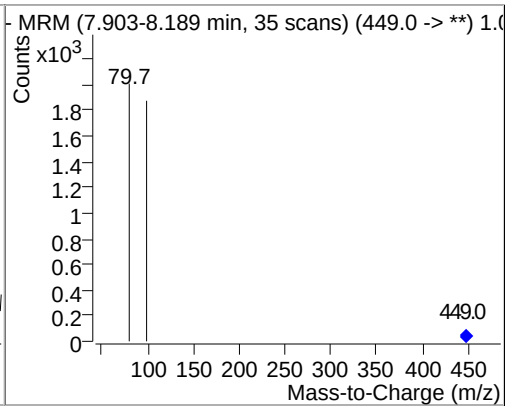




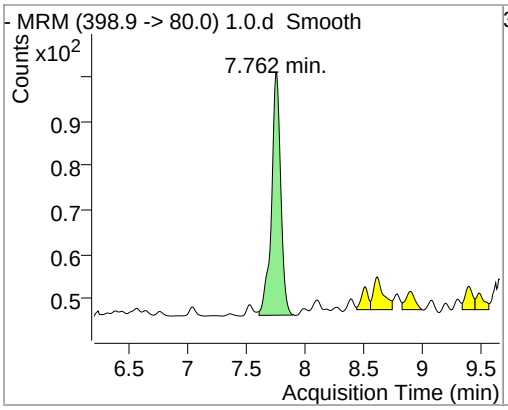
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	814.4028	8.02	0.35	201 (m)				

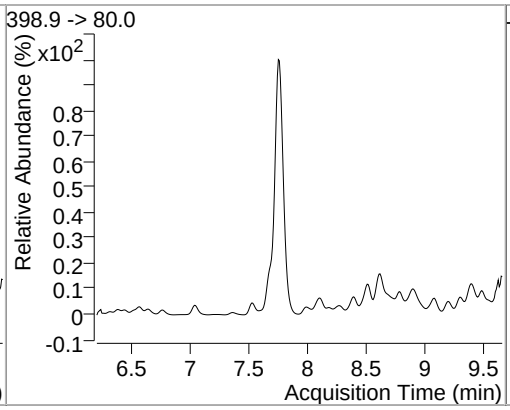


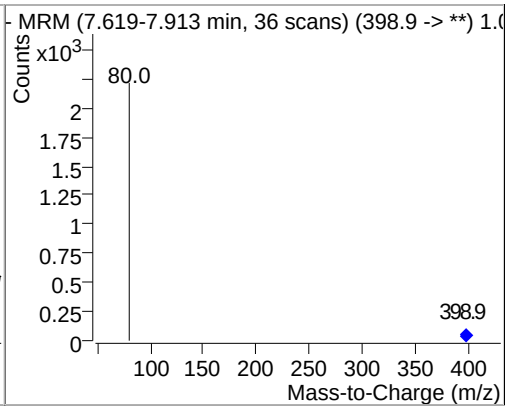




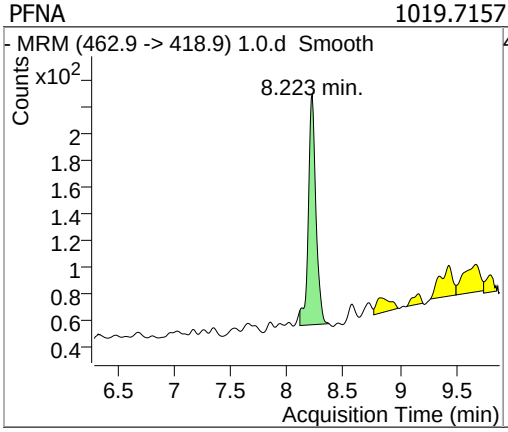
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	867.5661	7.76	0.08	301				

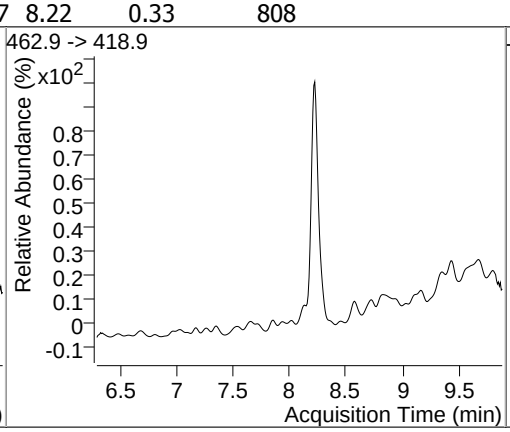


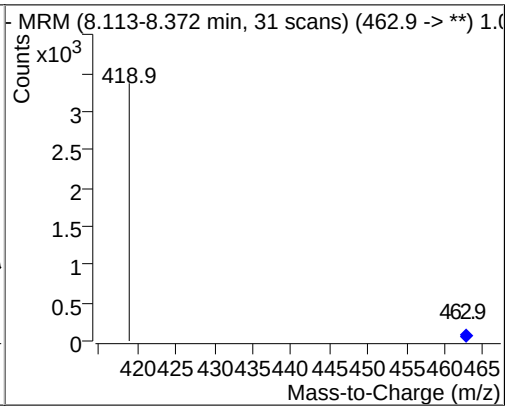




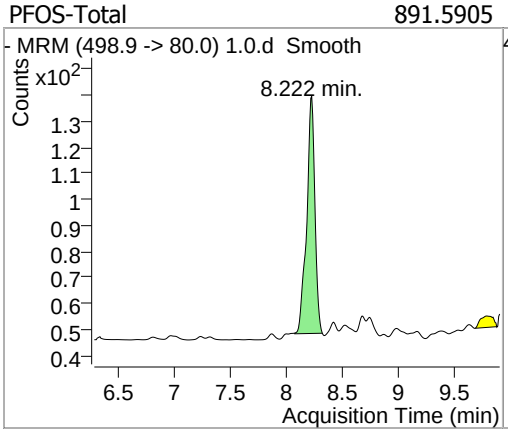
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PFNA	1019.7157	8.22	0.33	808				

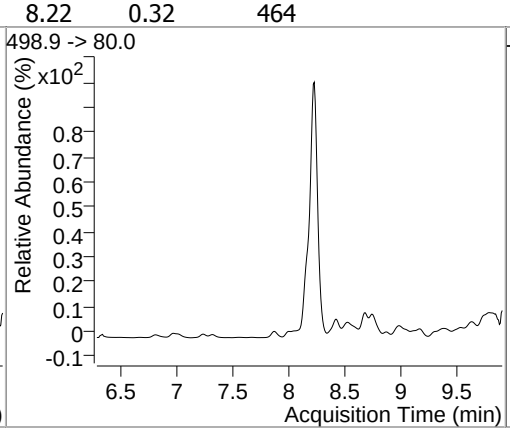


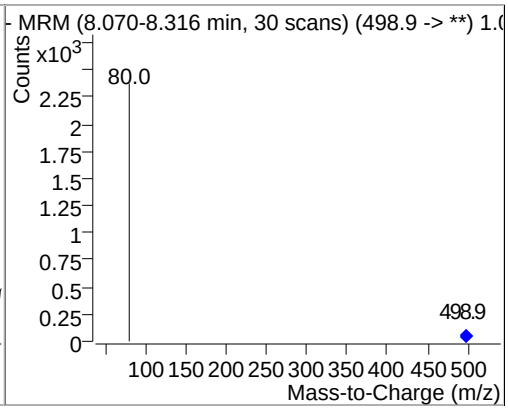




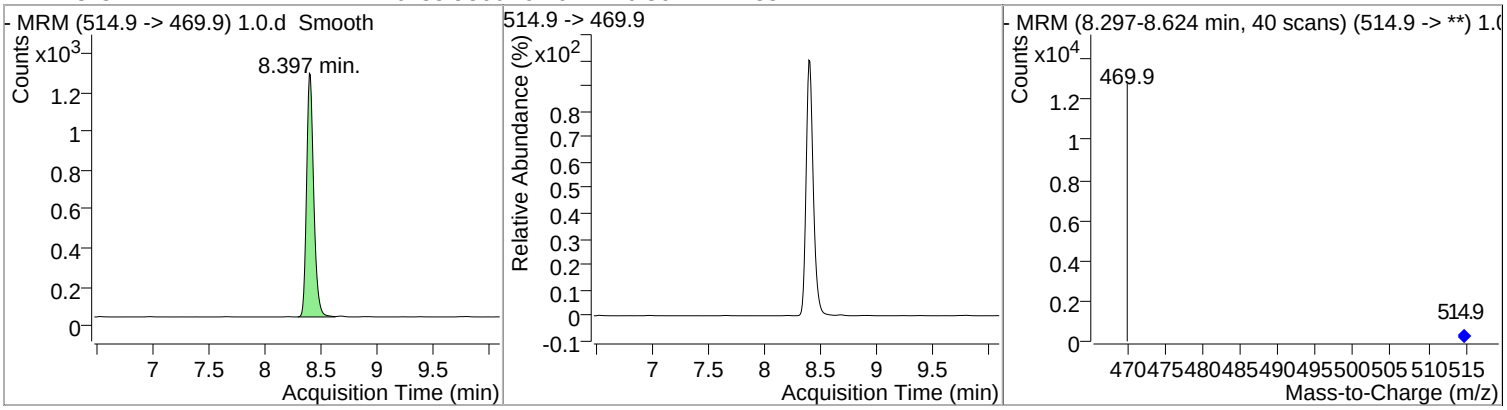
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	891.5905	8.22	0.32	464				



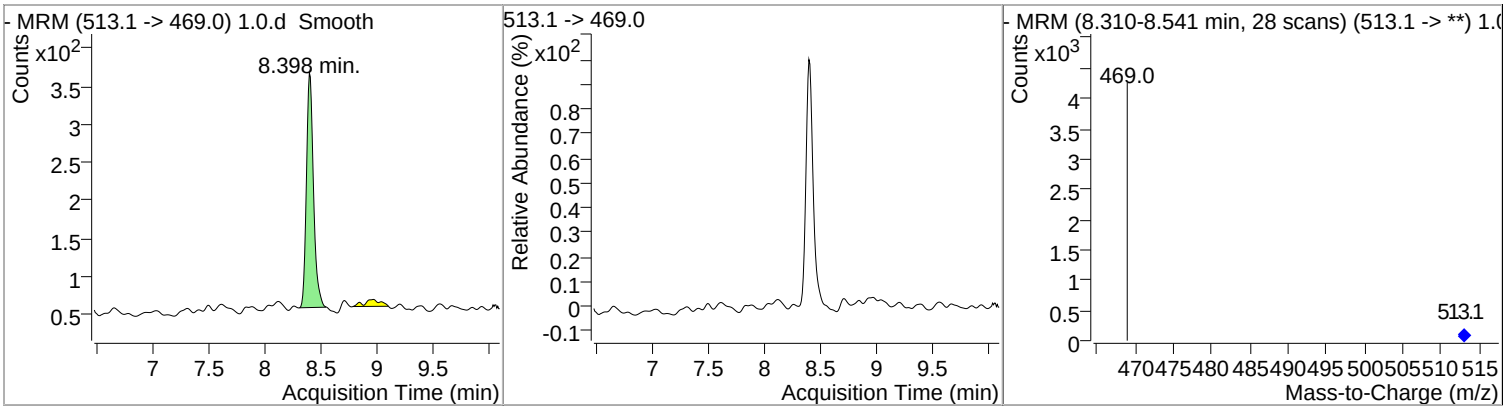




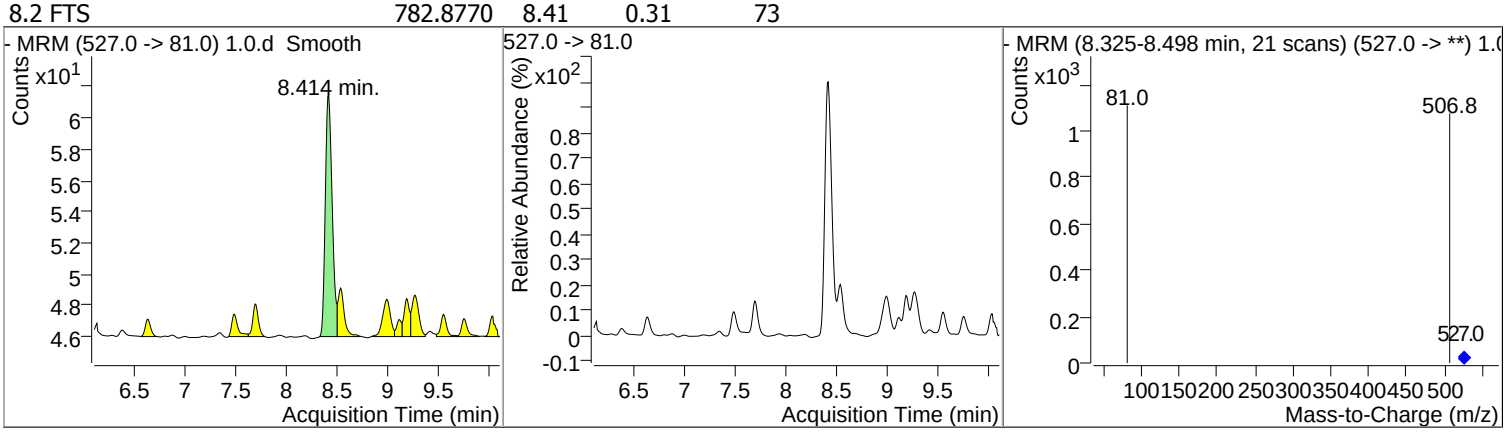
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PFDA C13	6255.9506	8.40	0.30	5517				



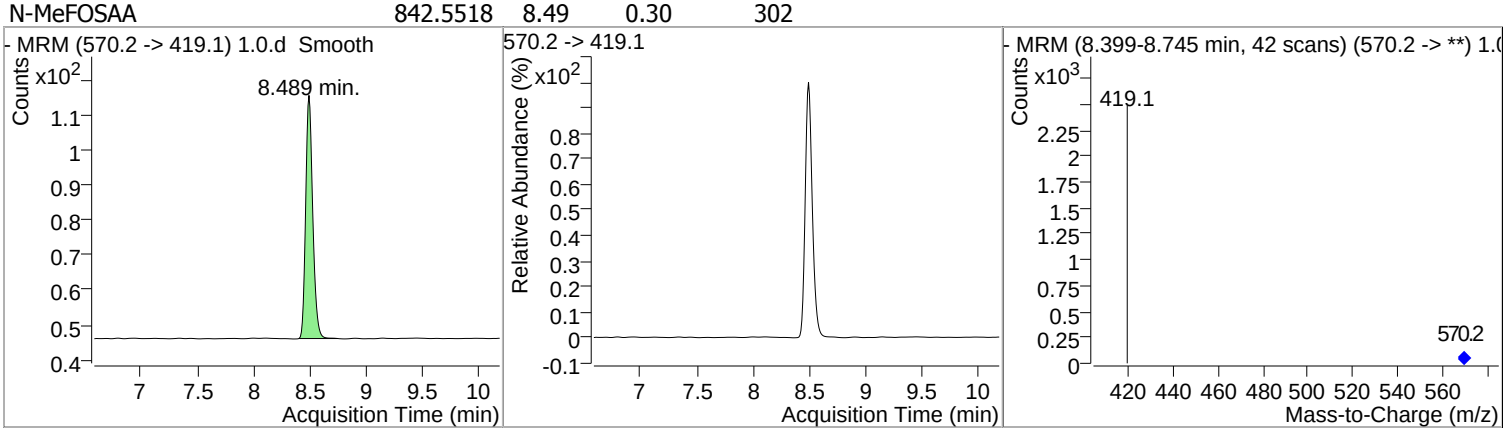
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PFDA	996.5233	8.40	0.30	1343				



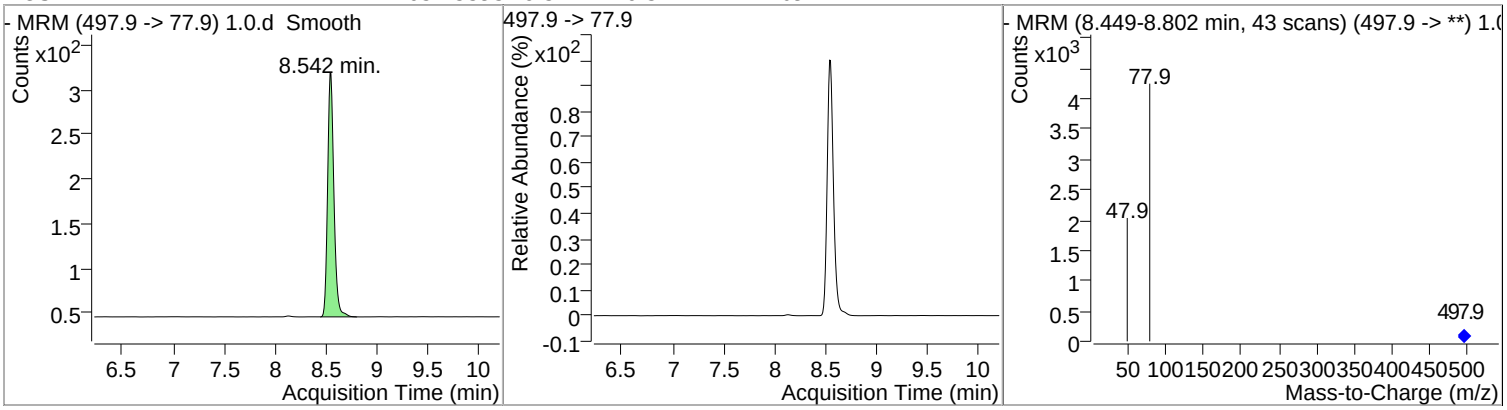
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8.2 FTS	782.8770	8.41	0.31	73				



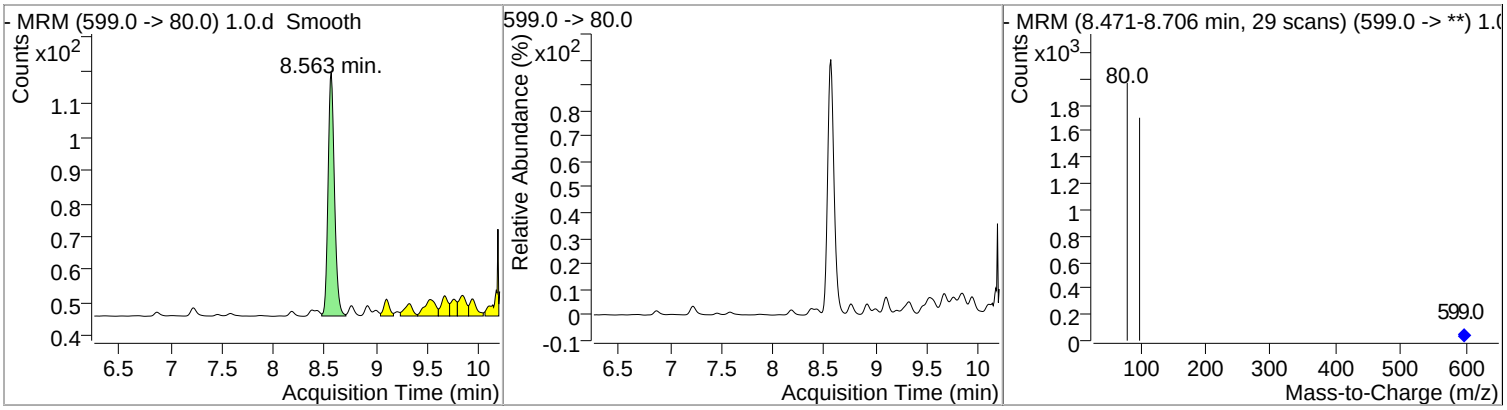
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N-MeFOSAA	842.5518	8.49	0.30	302				



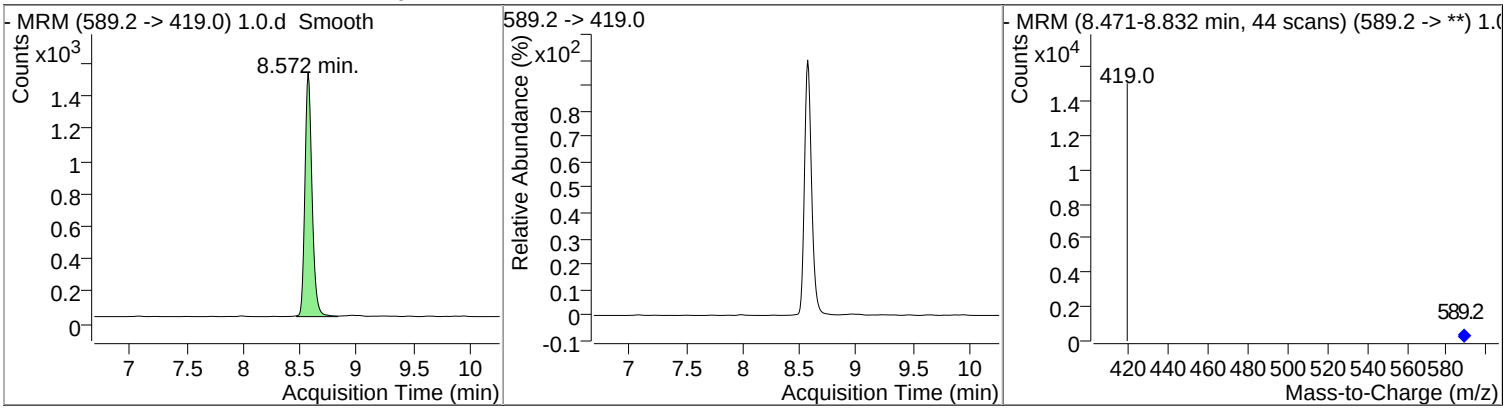
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	1051.5593	8.54	0.32	1169				



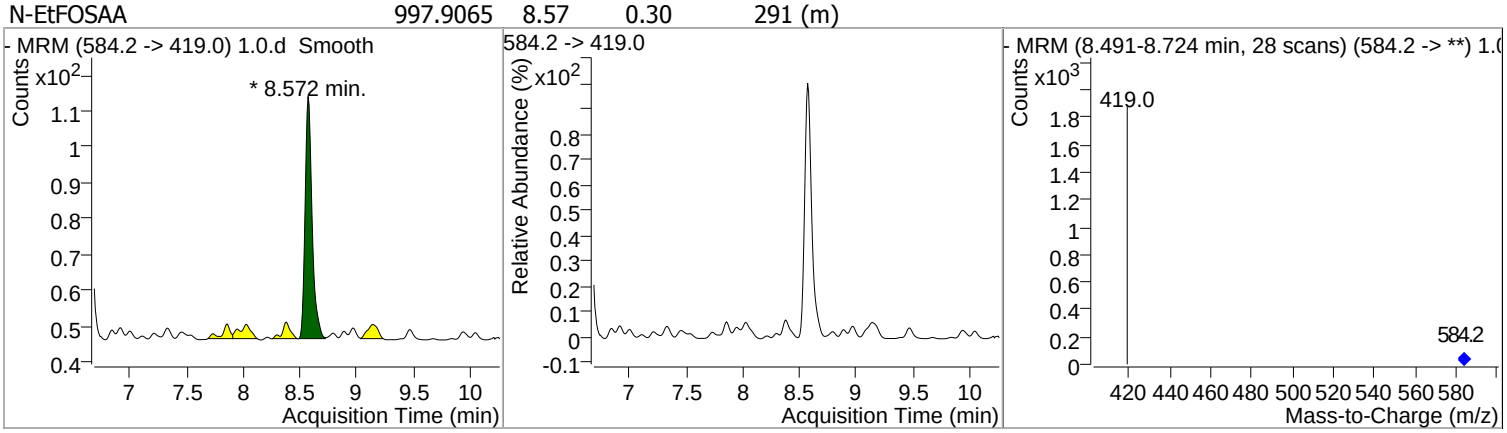
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PFDS	1034.5090	8.56	0.30	319				



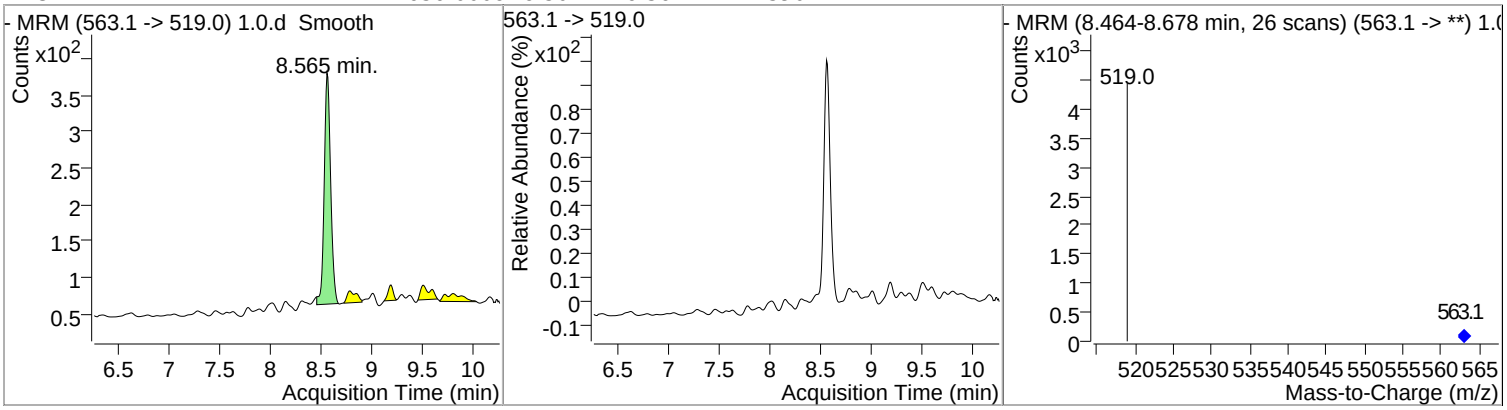
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d5-N-MeFOSAA	23890.3206	8.57	0.30	6558				



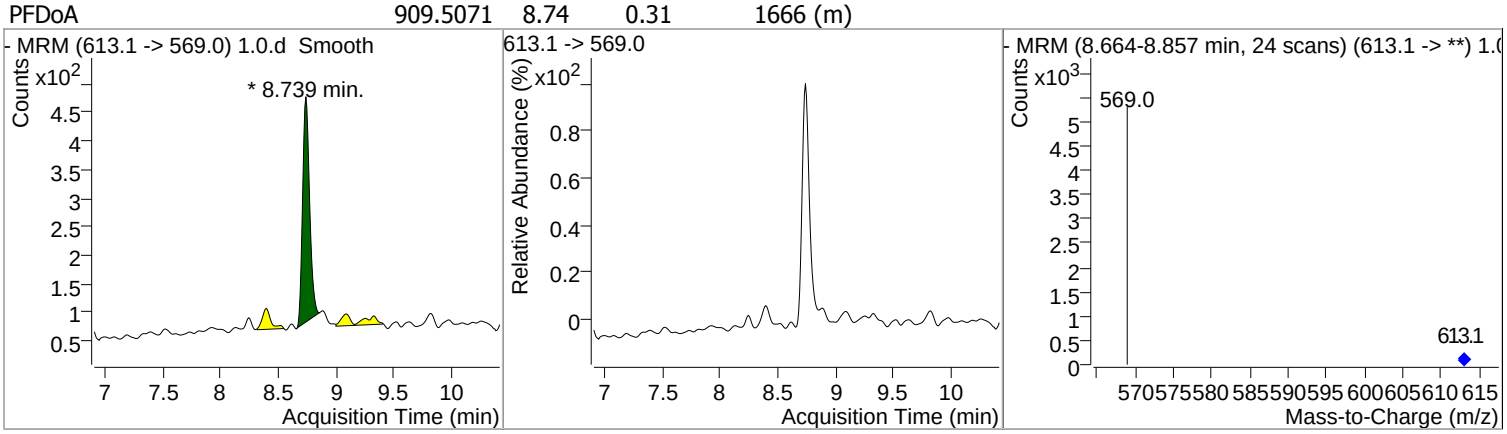
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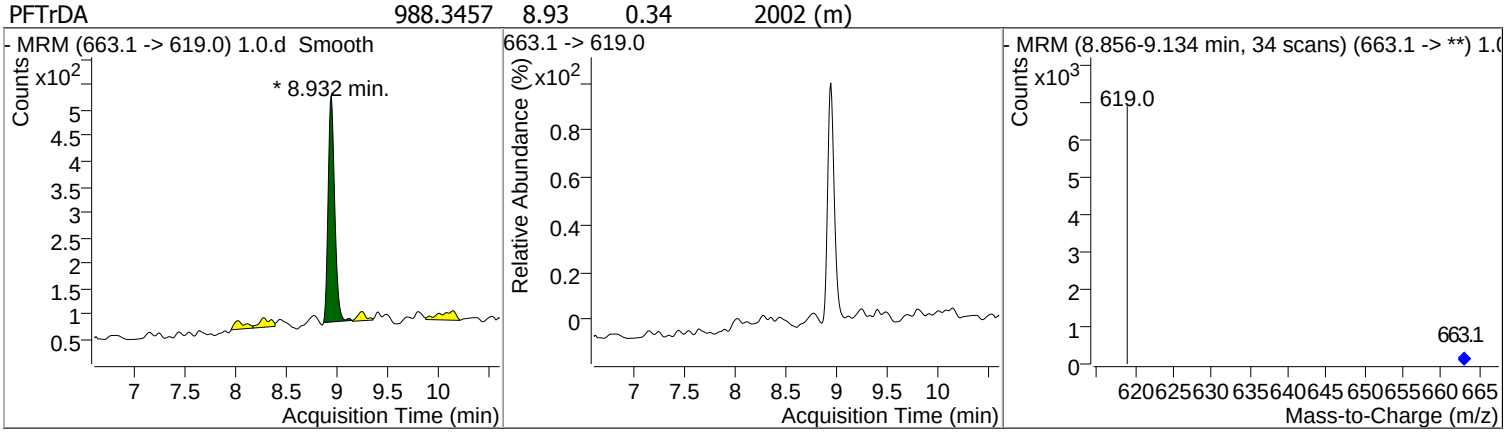
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PFUnA	1030.6668	8.56	0.30	1396				



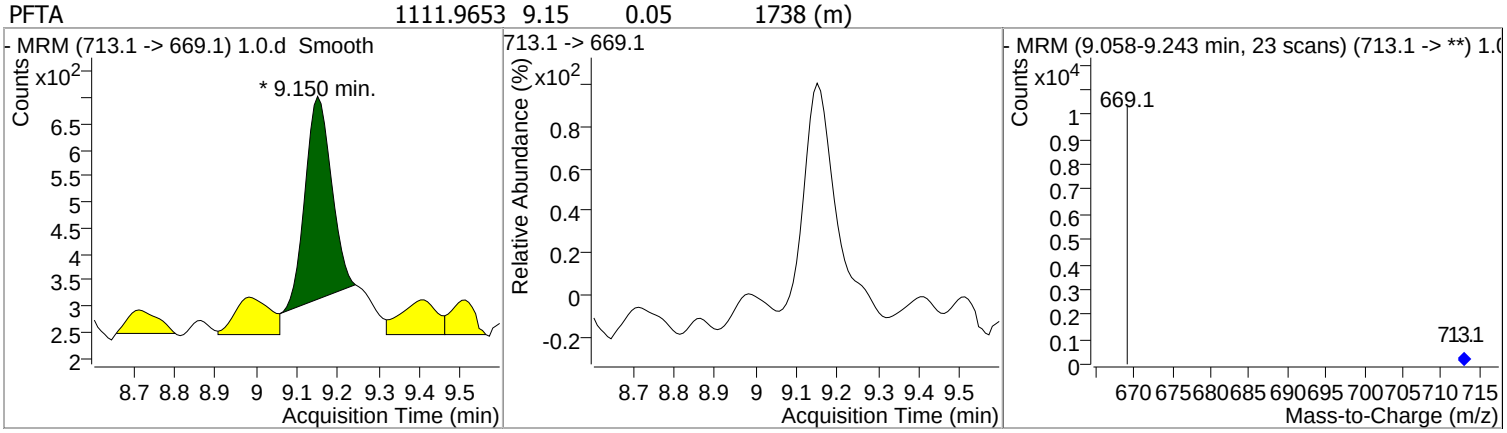
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	909.5071	8.74	0.31	1666 (m)				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	988.3457	8.93	0.34	2002 (m)				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	1111.9653	9.15	0.05	1738 (m)				

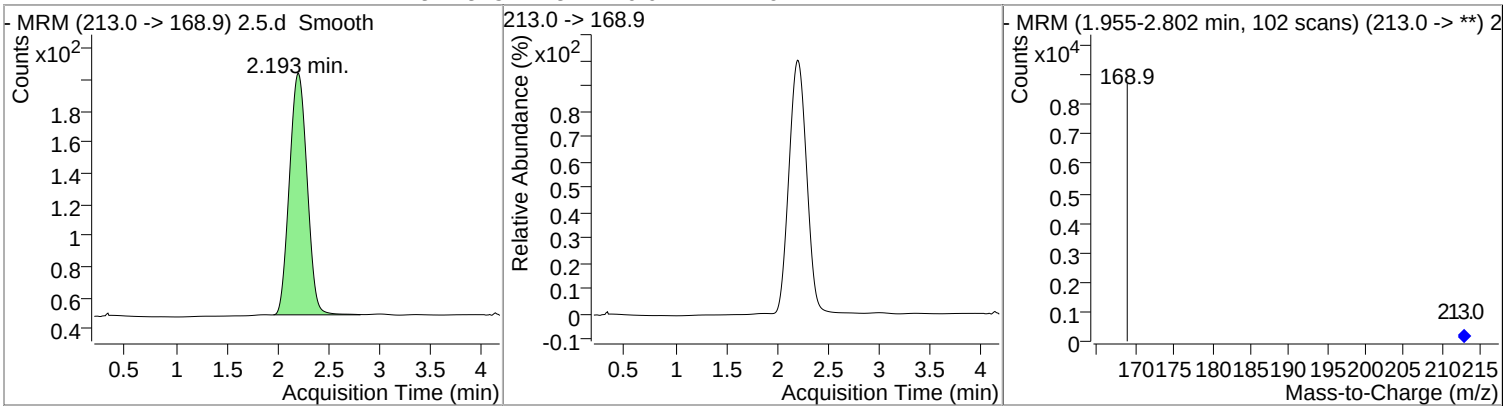


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Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

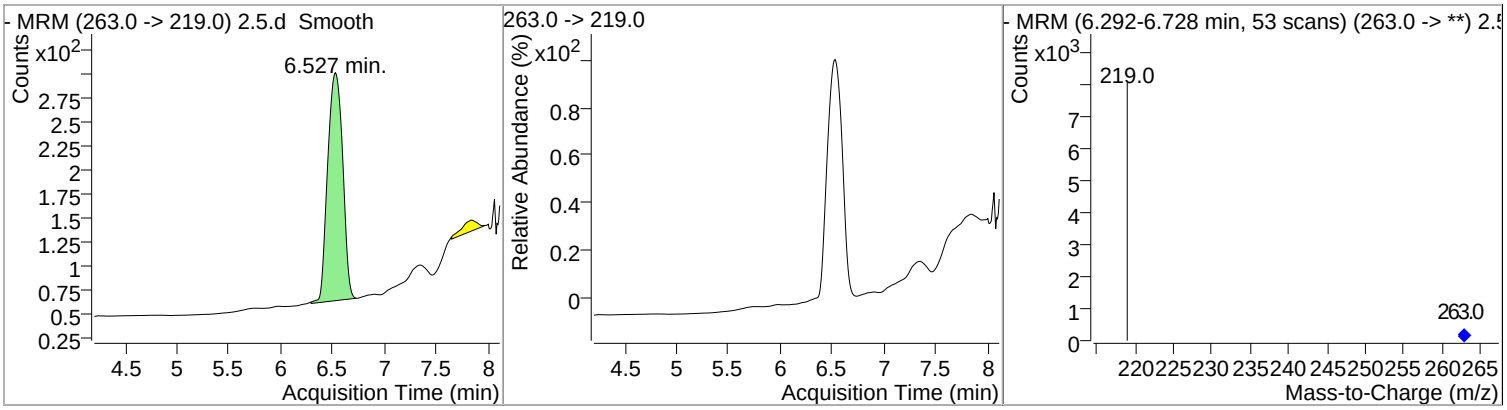
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	8.022	416.9 -> 371.9	13379	10000.0000	pg/ml		0.371
M PFOS C13	8.230	502.9 -> 80.0	10613	28700.0000	pg/ml		0.329
M d3-N-MeFOSAA	8.497	573.2 -> 419.0	11503	40000.0000	pg/ml		0.313
System Monitoring Compounds							
S PFHxA C13	7.358	314.9 -> 269.9	13103	7966.6742	pg/ml		0.421
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 79.67%			
S PFDA C13	8.414	514.9 -> 469.9	7482	8629.9830	pg/ml		0.321
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 86.30%			
S d5-N-MeFOSAA	8.589	589.2 -> 419.0	8074	32084.6870	pg/ml		0.321
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 80.21%			
Target Compounds							QValue
T PFBA	2.193	213.0 -> 168.9	1871	2492.1915	pg/ml		100
T PFPeA	6.527	263.0 -> 219.0	2398	2542.3162	pg/ml		100
T PFBS	6.896	298.9 -> 80.0	835	2432.3573	pg/ml		100
T PFHxA	7.359	312.9 -> 268.9	3867	2558.2762	pg/ml		100
T PFHpA	7.754	362.9 -> 319.0	4045	2495.1737	pg/ml		100
T 6.2 FTS	8.021	427.0 -> 406.8	211	2704.6955	pg/ml		100
T PFOA-Total	8.022	412.9 -> 368.9	4541	2961.7623	pg/ml		100
T PFHpS	8.029	449.0 -> 79.7	515	2326.2178	pg/ml		100
T PFHxS-Total	7.779	398.9 -> 80.0	700	2243.3993	pg/ml		100
T PFNA	8.231	462.9 -> 418.9	1641	2105.6970	pg/ml		100
T PFOS-Total	8.230	498.9 -> 80.0	1241	2658.6709	pg/ml		100
T PFDA	8.414	513.1 -> 469.0	3400	2566.9675	pg/ml		100
T 8.2 FTS	8.414	527.0 -> 81.0	260	3113.0495	pg/ml	m	100
T N-MeFOSAA	8.506	570.2 -> 419.1	754	2297.4866	pg/ml		100
T FOSA	8.558	497.9 -> 77.9	2583	2533.9409	pg/ml		100
T PFDS	8.571	599.0 -> 80.0	713	2579.9919	pg/ml		100
T N-EtFOSAA	8.589	584.2 -> 419.0	639	2391.9591	pg/ml		100
T PFUnA	8.582	563.1 -> 519.0	3809	2861.4592	pg/ml	m	100
T PFDoA	8.748	613.1 -> 569.0	4294	2384.3450	pg/ml	m	100
T PFTrDA	8.949	663.1 -> 619.0	5373	2698.9013	pg/ml		100
T PFTA	9.167	713.1 -> 669.1	3650	2375.1831	pg/ml	m	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

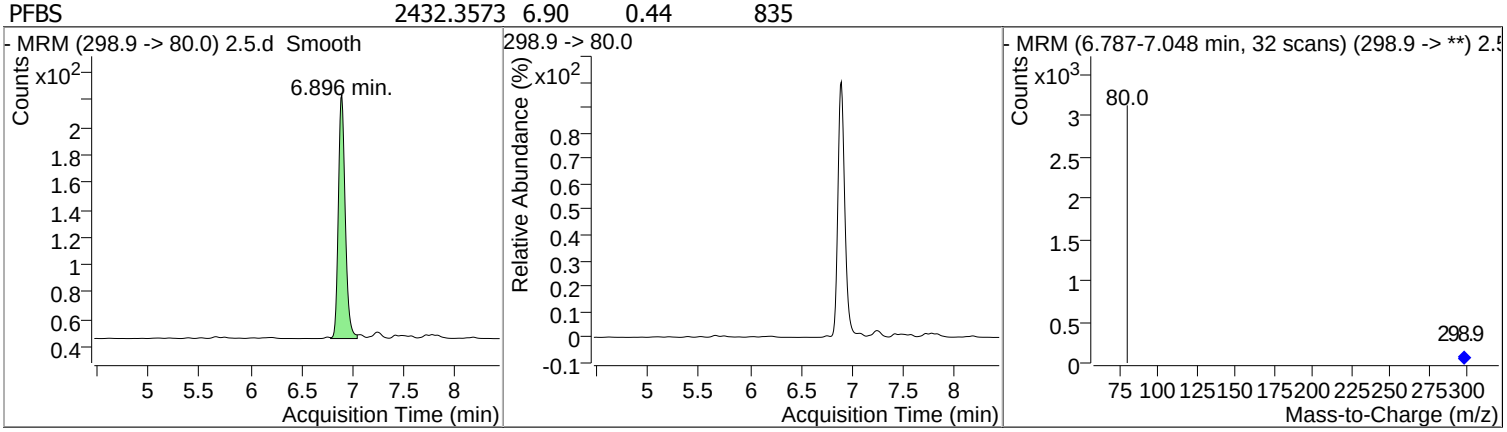
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	2492.1915	2.19	0.02	1871				



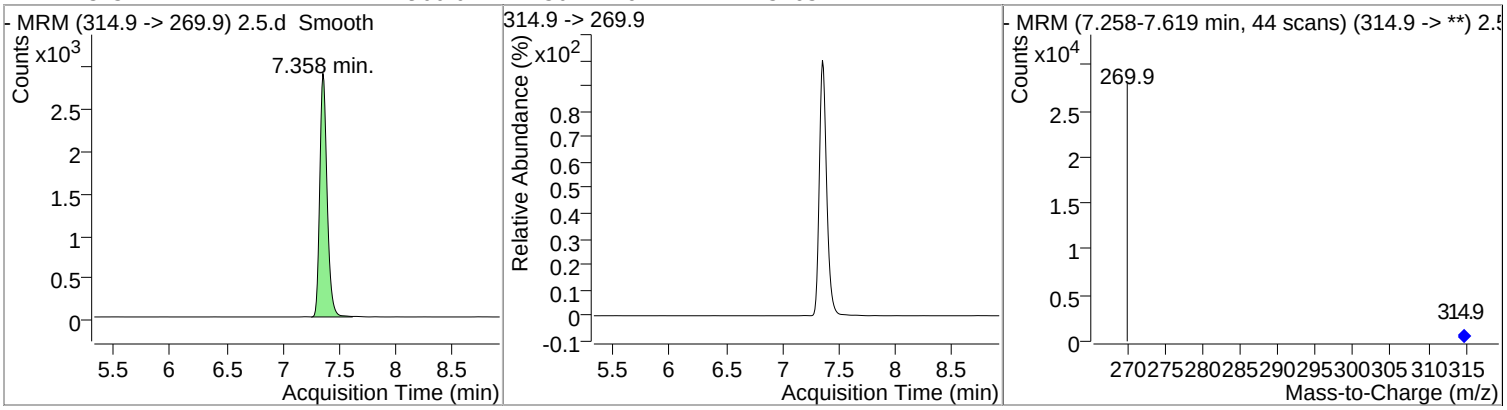
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	2542.3162	6.53	0.42	2398				



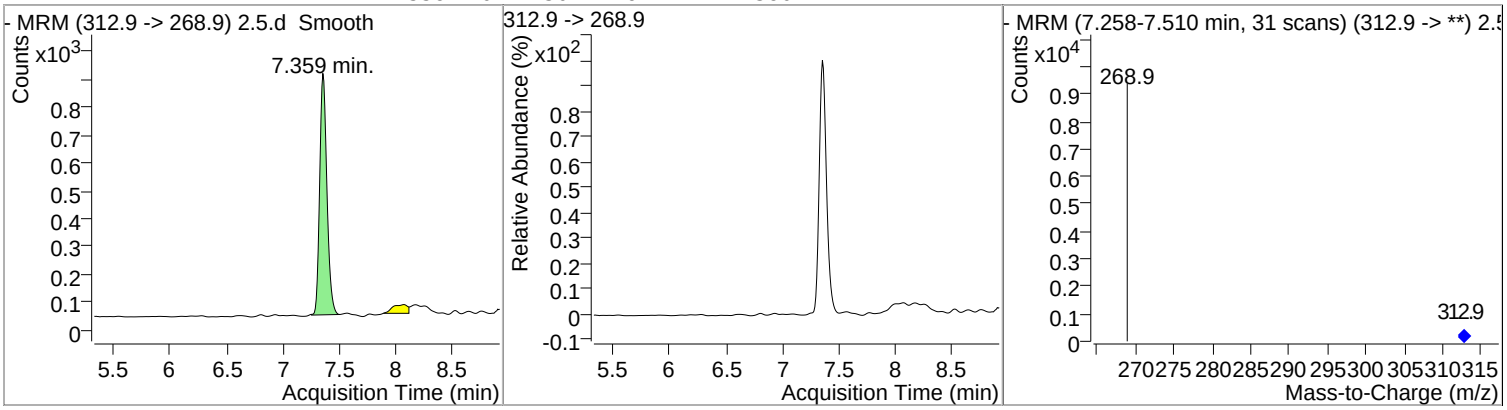
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	2432.3573	6.90	0.44	835				



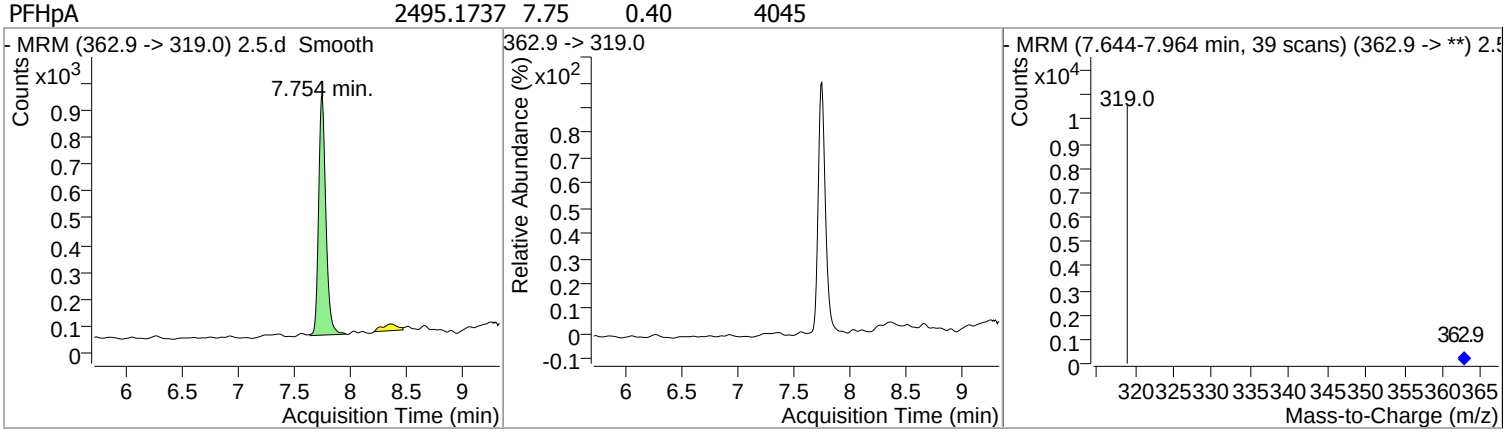
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	7966.6742	7.36	0.42	13103				



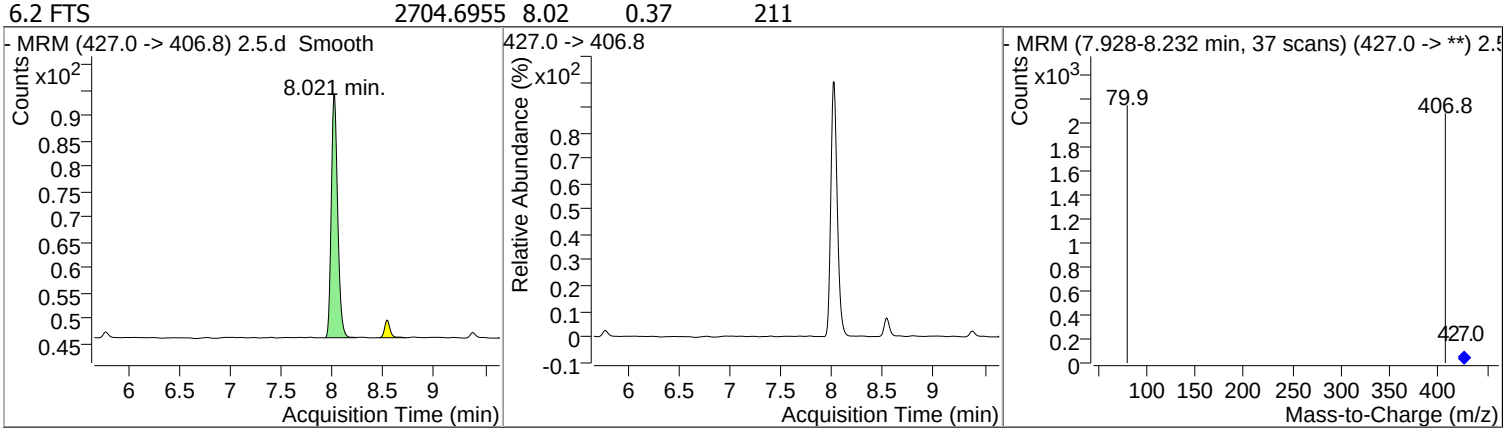
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	2558.2762	7.36	0.42	3867				



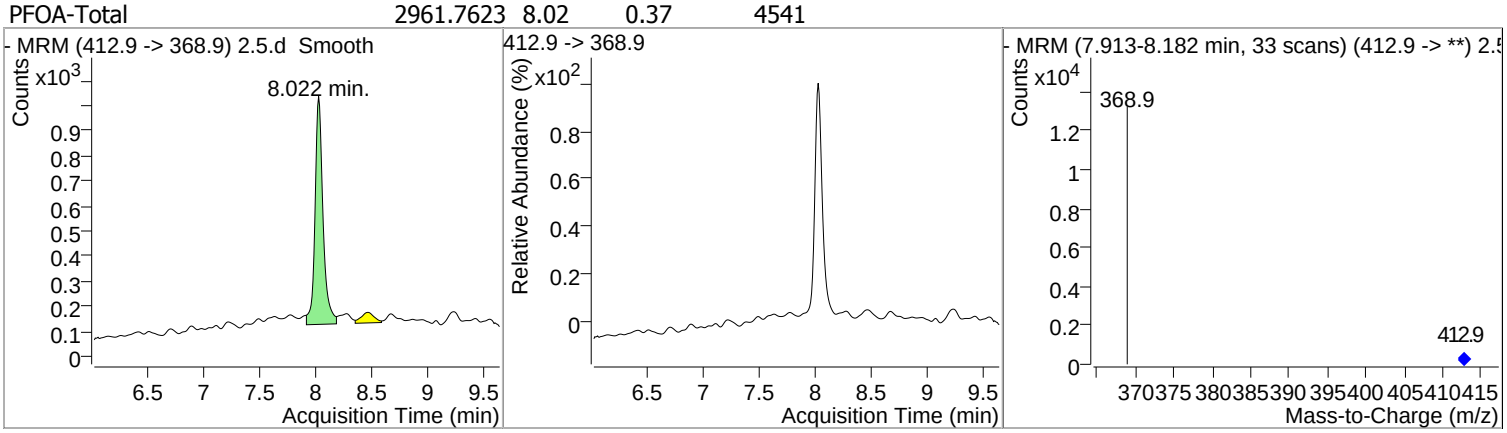
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	2495.1737	7.75	0.40	4045				



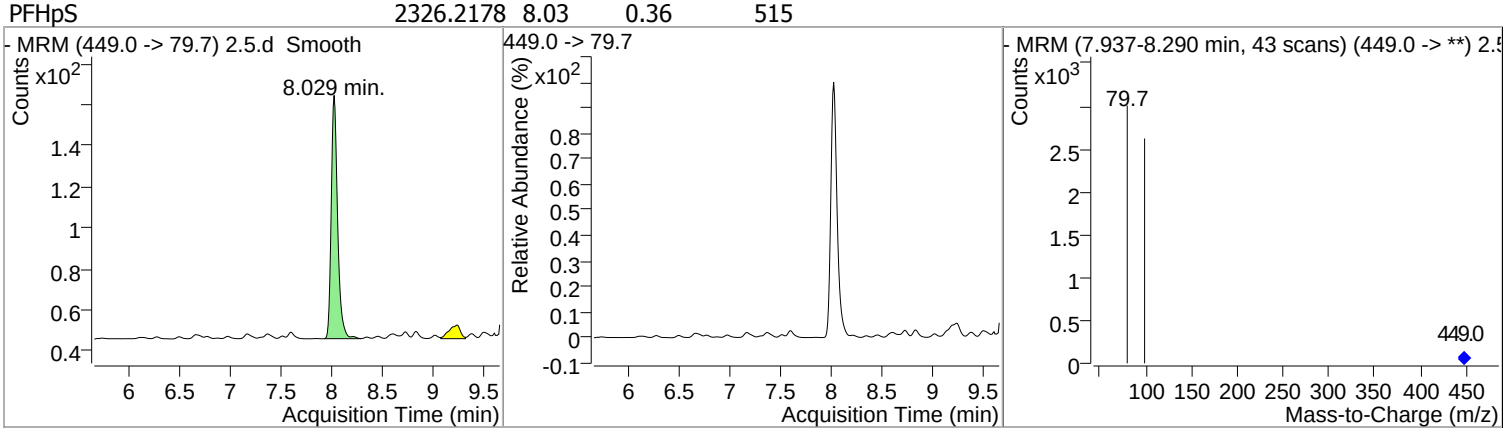
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6.2 FTS	2704.6955	8.02	0.37	211				



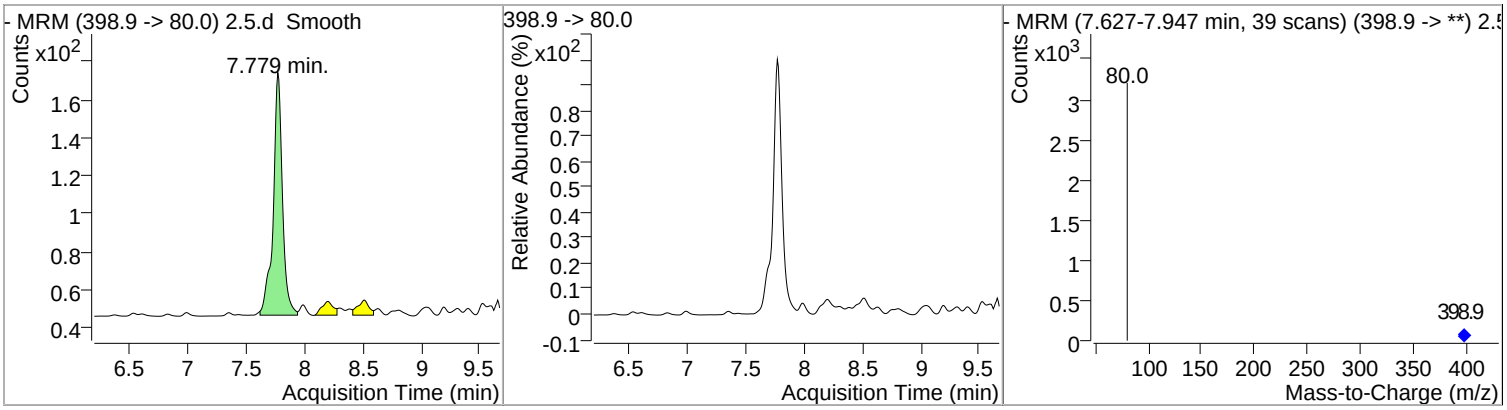
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	2961.7623	8.02	0.37	4541				



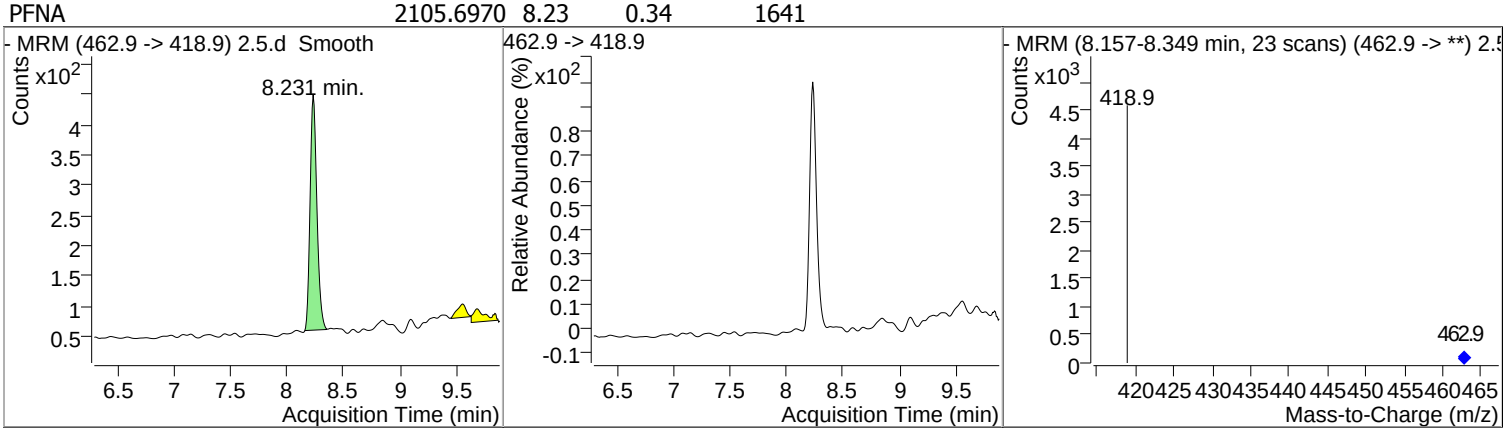
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	2326.2178	8.03	0.36	515				



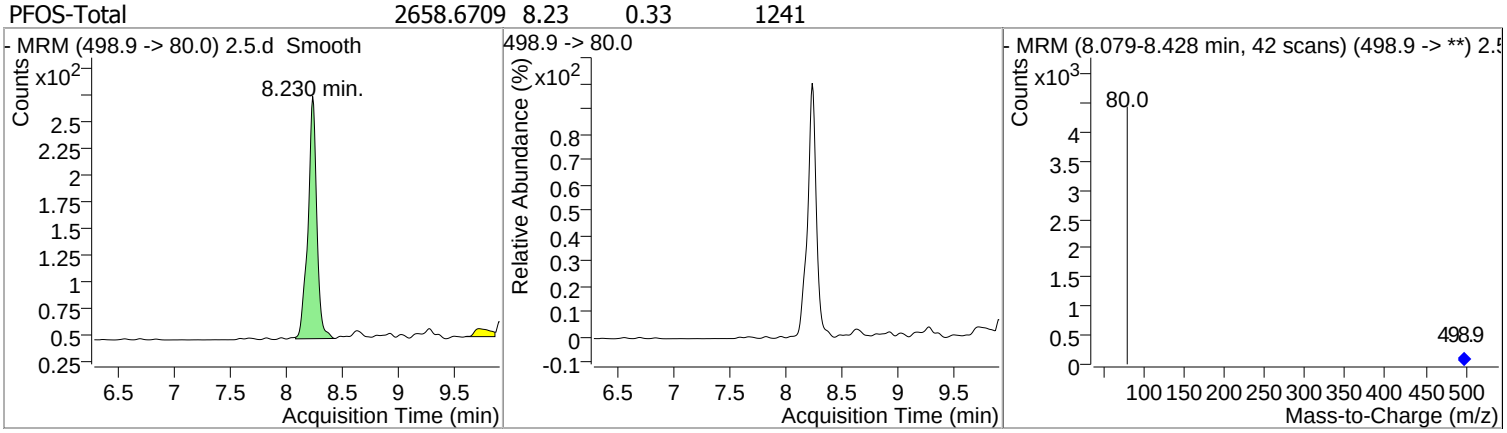
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	2243.3993	7.78	0.10	700				



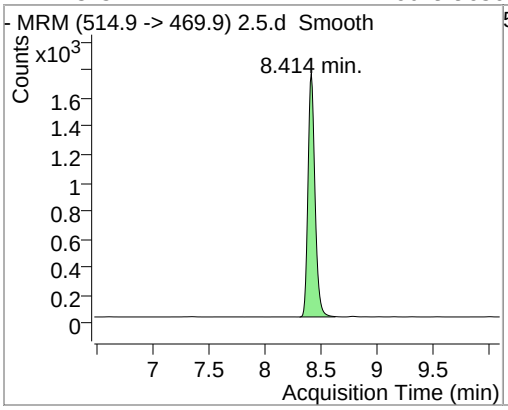
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	2105.6970	8.23	0.34	1641				

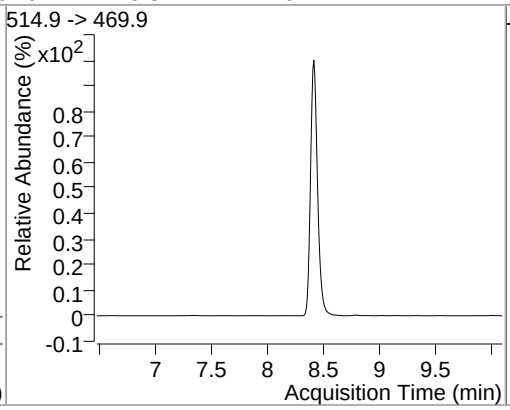


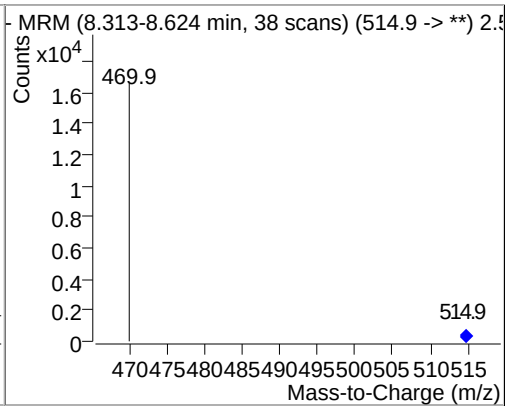
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	2658.6709	8.23	0.33	1241				



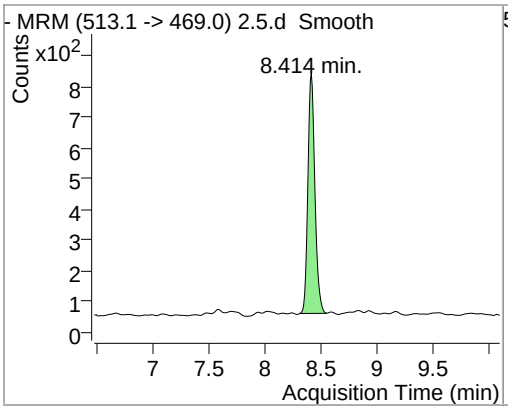
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	8629.9830	8.41	0.32	7482				

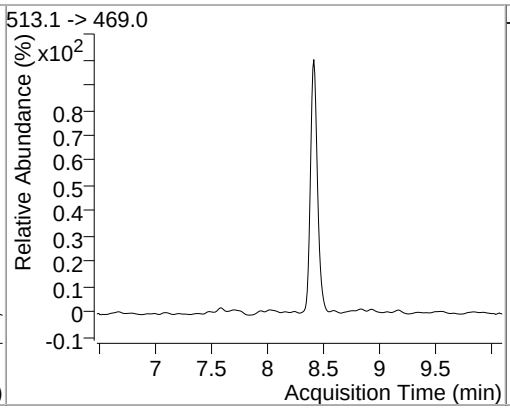


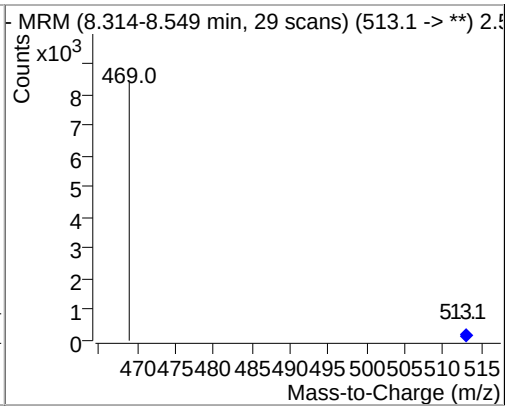




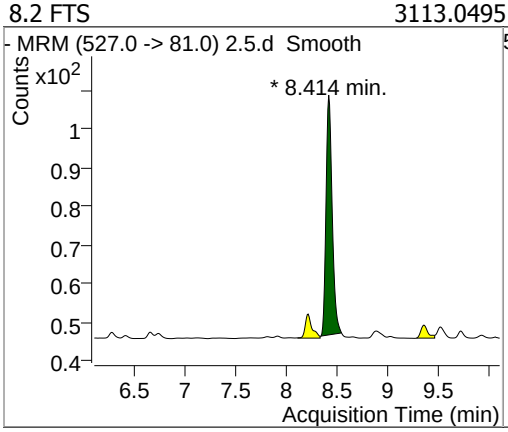
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	2566.9675	8.41	0.32	3400				

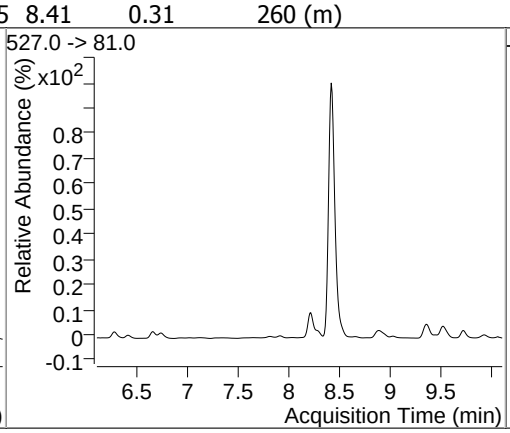


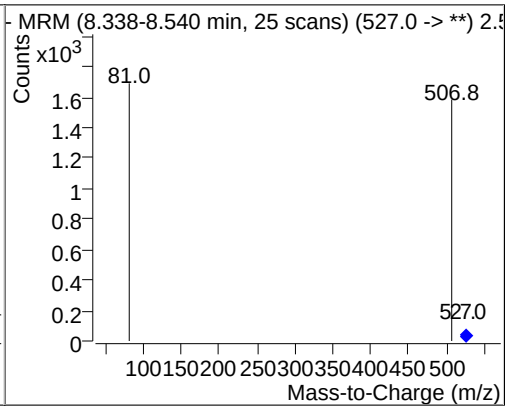




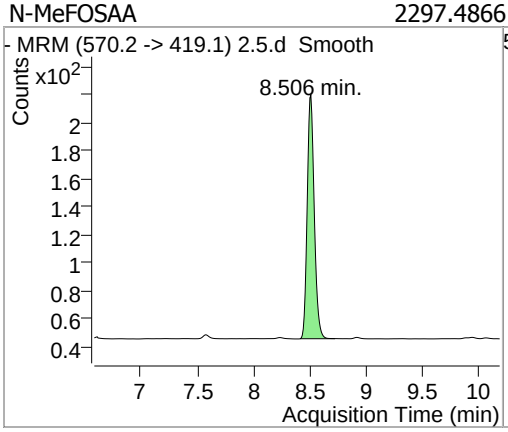
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	3113.0495	8.41	0.31	260 (m)				

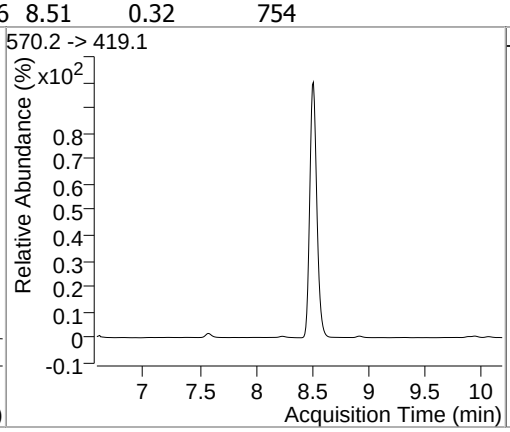


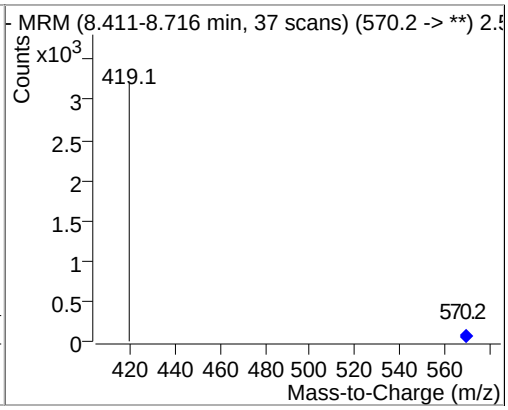




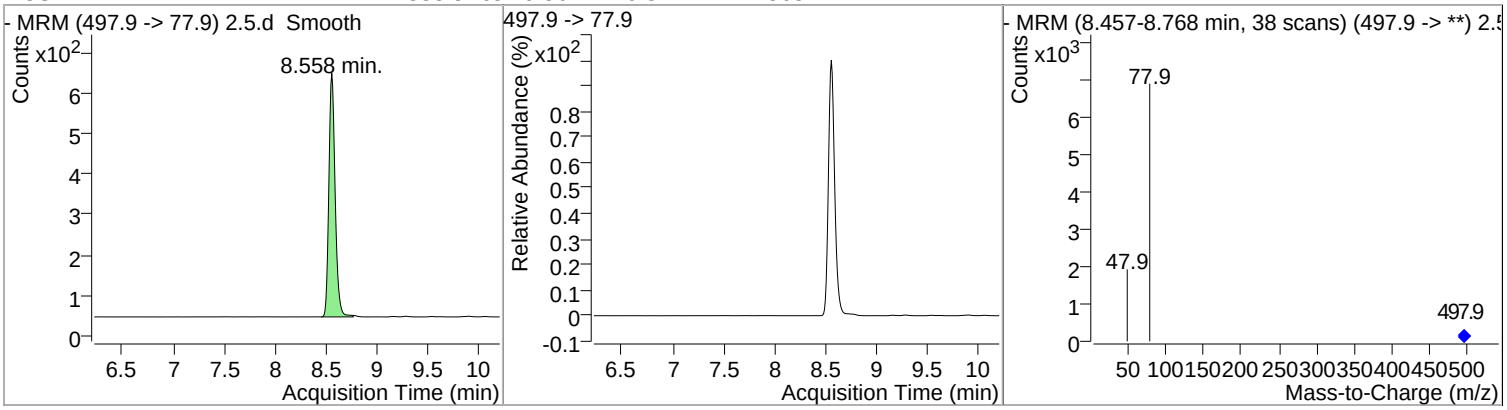
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	2297.4866	8.51	0.32	754				



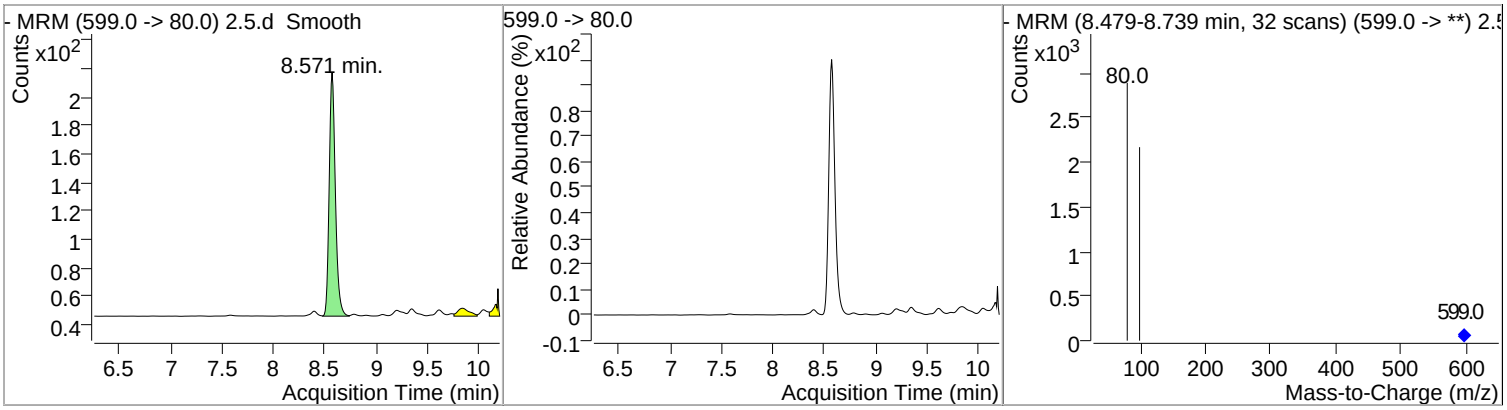




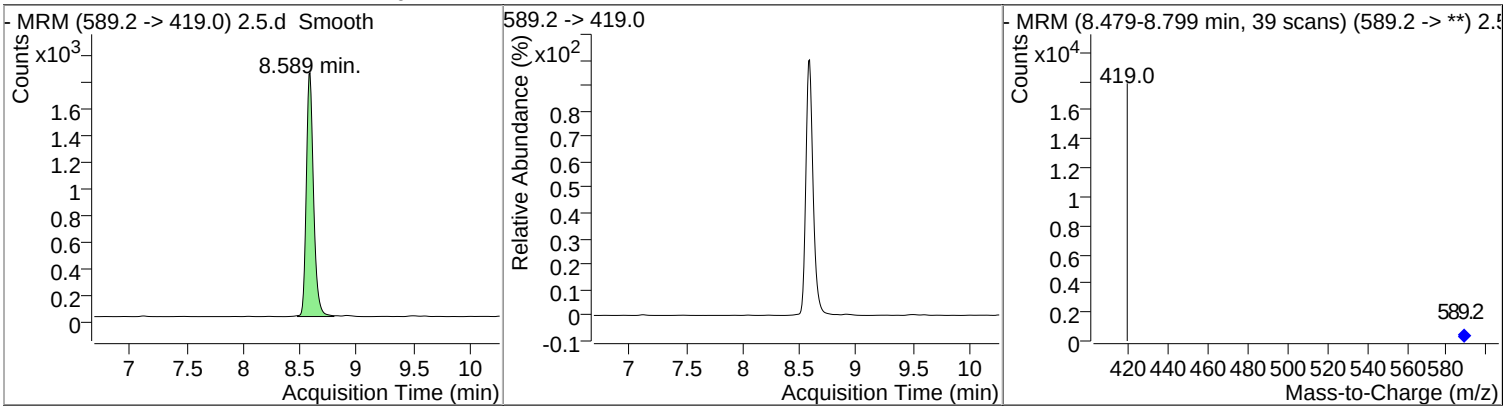
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	2533.9409	8.56	0.34	2583				



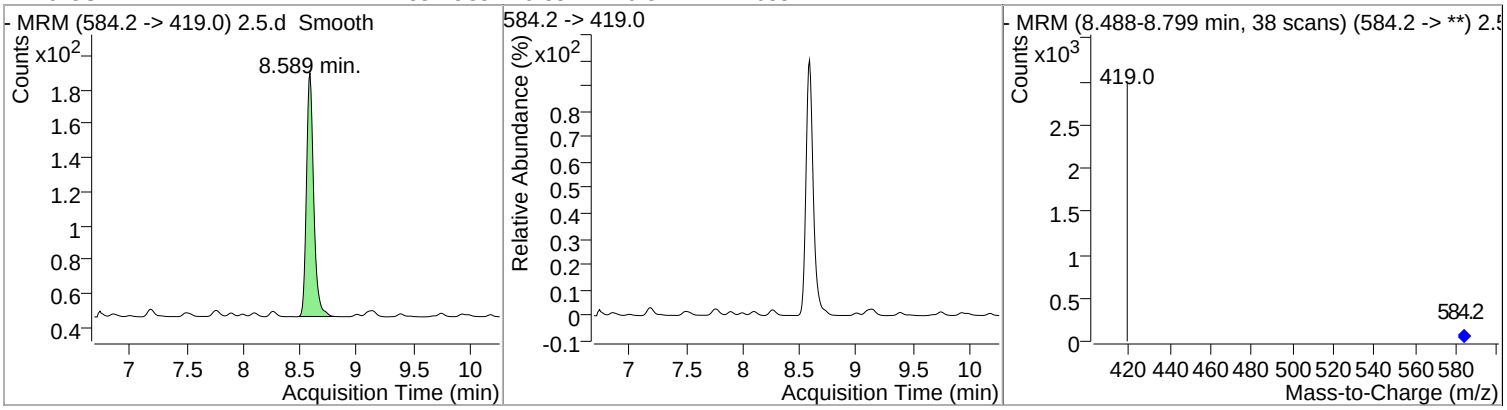
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	2579.9919	8.57	0.31	713				



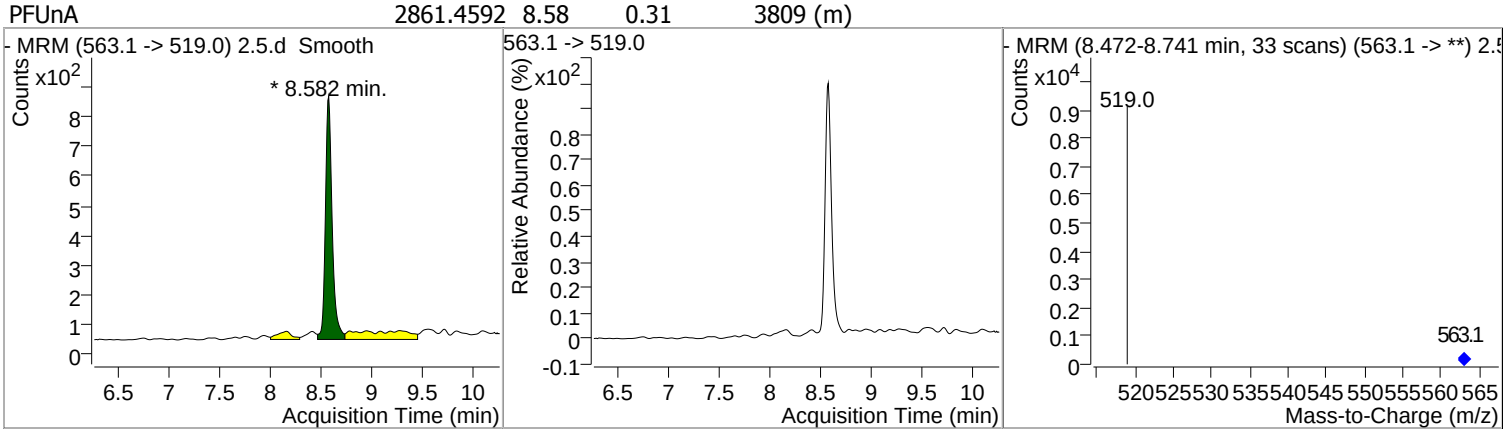
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	32084.6870	8.59	0.32	8074				



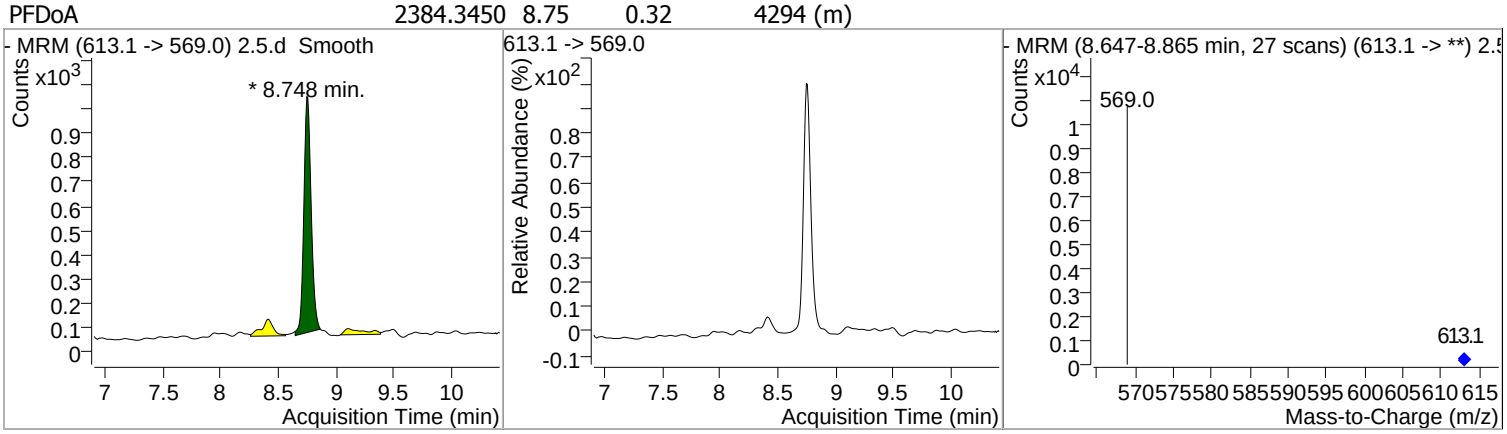
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	2391.9591	8.59	0.32	639				



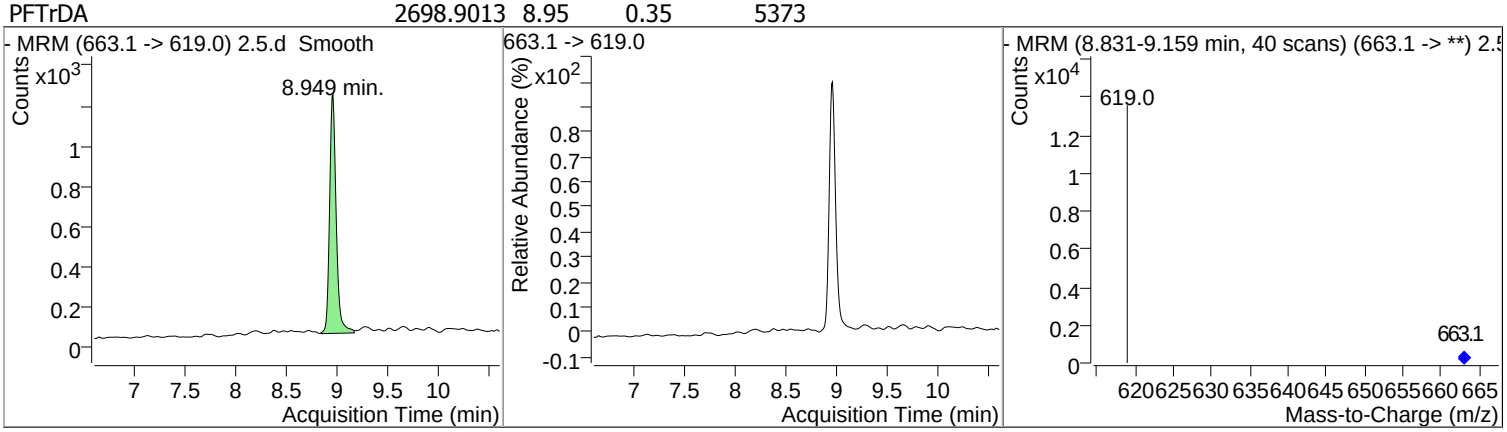
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	2861.4592	8.58	0.31	3809 (m)				



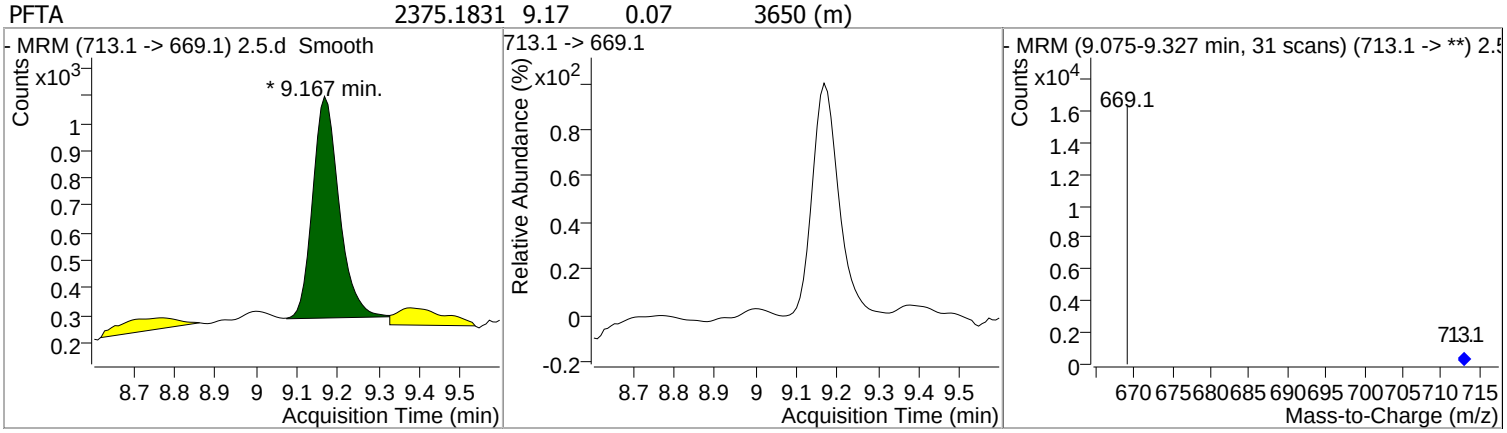
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	2384.3450	8.75	0.32	4294 (m)				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	2698.9013	8.95	0.35	5373				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	2375.1831	9.17	0.07	3650 (m)				

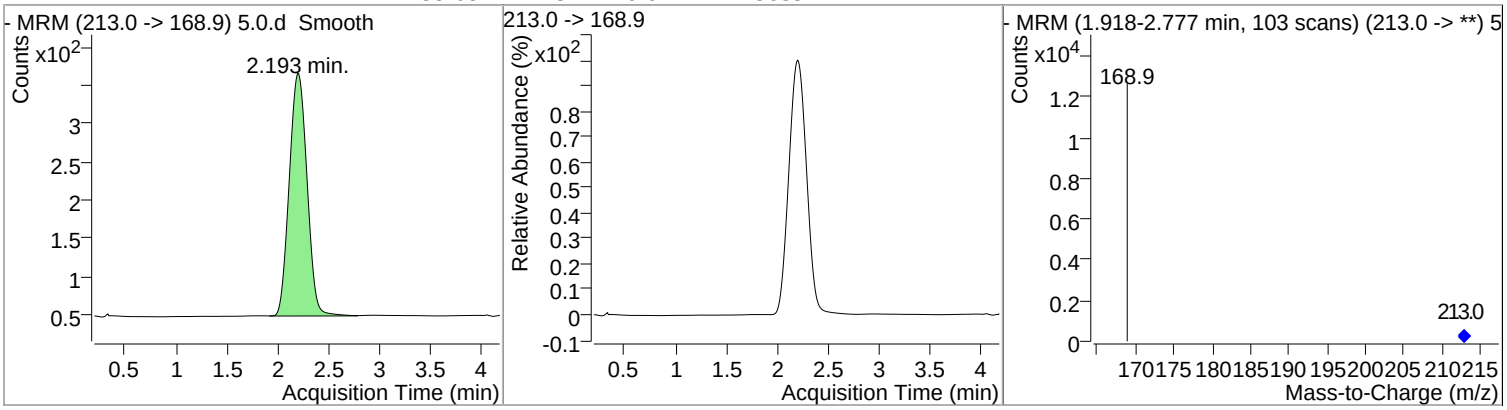


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Sample Name	5.0	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

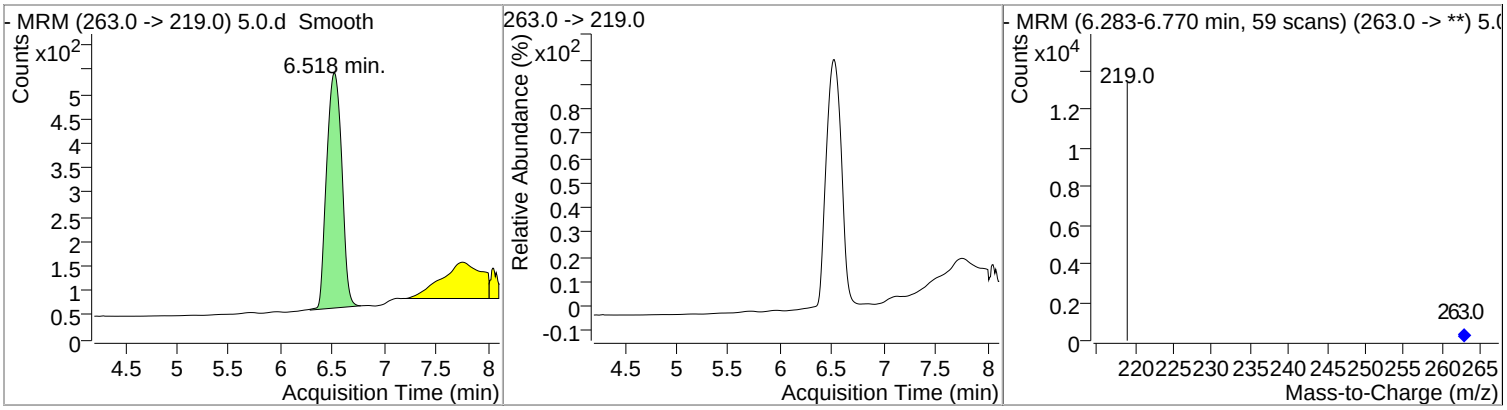
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	8.005	416.9 -> 371.9	14450	10000.0000	pg/ml		0.354
M PFOS C13	8.230	502.9 -> 80.0	11005	28700.0000	pg/ml	m	0.329
M d3-N-MeFOSAA	8.497	573.2 -> 419.0	11663	40000.0000	pg/ml		0.313
System Monitoring Compounds							
S PFHxA C13	7.350	314.9 -> 269.9	17954	10107.3609	pg/ml		0.413
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 101.07%			
S PFDA C13	8.406	514.9 -> 469.9	9191	9815.7198	pg/ml		0.313
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 98.16%			
S d5-N-MeFOSAA	8.580	589.2 -> 419.0	11031	43236.2459	pg/ml		0.313
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 108.09%			
Target Compounds							QValue
T PFBA	2.193	213.0 -> 168.9	3839	4735.6511	pg/ml		100
T PFPeA	6.518	263.0 -> 219.0	4873	4783.0236	pg/ml		100
T PFBS	6.880	298.9 -> 80.0	1379	3872.5090	pg/ml		100
T PFHxA	7.350	312.9 -> 268.9	7860	4814.8302	pg/ml		100
T PFHpA	7.737	362.9 -> 319.0	8128	4642.1679	pg/ml		100
T 6.2 FTS	7.996	427.0 -> 406.8	497	6134.8851	pg/ml	m	100
T PFOA-Total	8.005	412.9 -> 368.9	8275	4997.7578	pg/ml		100
T PFHpS	8.012	449.0 -> 79.7	1135	4942.9304	pg/ml		100
T PFHxS-Total	7.762	398.9 -> 80.0	1465	4530.4141	pg/ml		100
T PFNA	8.223	462.9 -> 418.9	3681	4374.7852	pg/ml		100
T PFOS-Total	8.222	498.9 -> 80.0	2451	5065.5888	pg/ml		100
T PFDA	8.406	513.1 -> 469.0	6948	4857.3291	pg/ml		100
T 8.2 FTS	8.414	527.0 -> 81.0	445	5136.3781	pg/ml		100
T N-MeFOSAA	8.497	570.2 -> 419.1	1568	4711.6494	pg/ml		100
T FOSA	8.550	497.9 -> 77.9	5421	5246.4737	pg/ml		100
T PFDS	8.563	599.0 -> 80.0	1469	5127.7513	pg/ml		100
T N-EtFOSAA	8.581	584.2 -> 419.0	1423	5254.2560	pg/ml		100
T PFUnA	8.573	563.1 -> 519.0	7152	4974.1468	pg/ml		100
T PFDoA	8.748	613.1 -> 569.0	8883	4566.7946	pg/ml	m	100
T PFTrDA	8.932	663.1 -> 619.0	9925	4615.4952	pg/ml		100
T PFTA	9.159	713.1 -> 669.1	8072	4864.1882	pg/ml	m	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

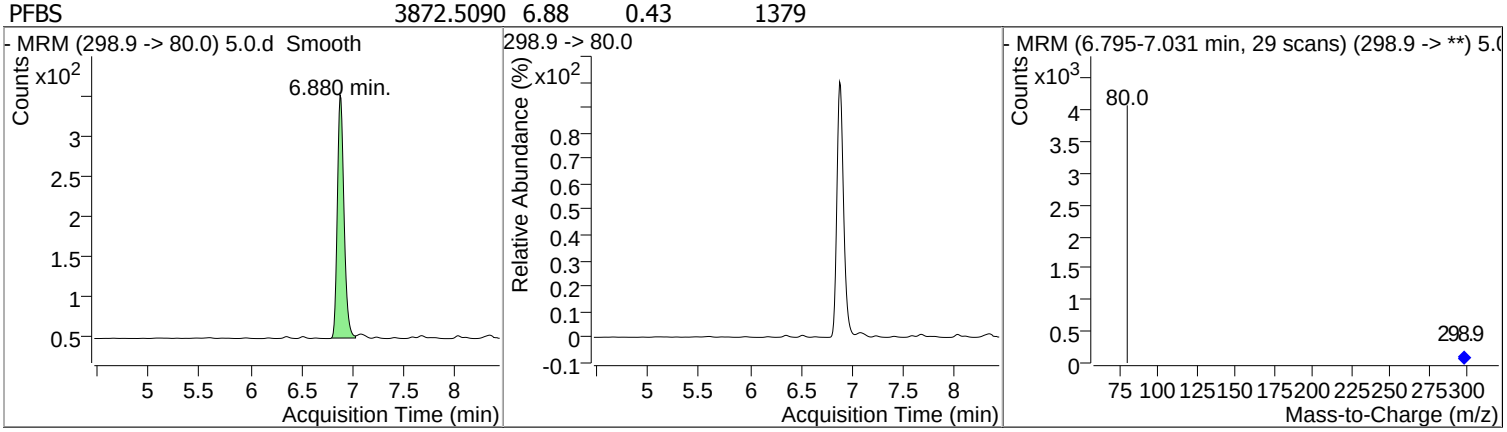
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	4735.6511	2.19	0.02	3839				



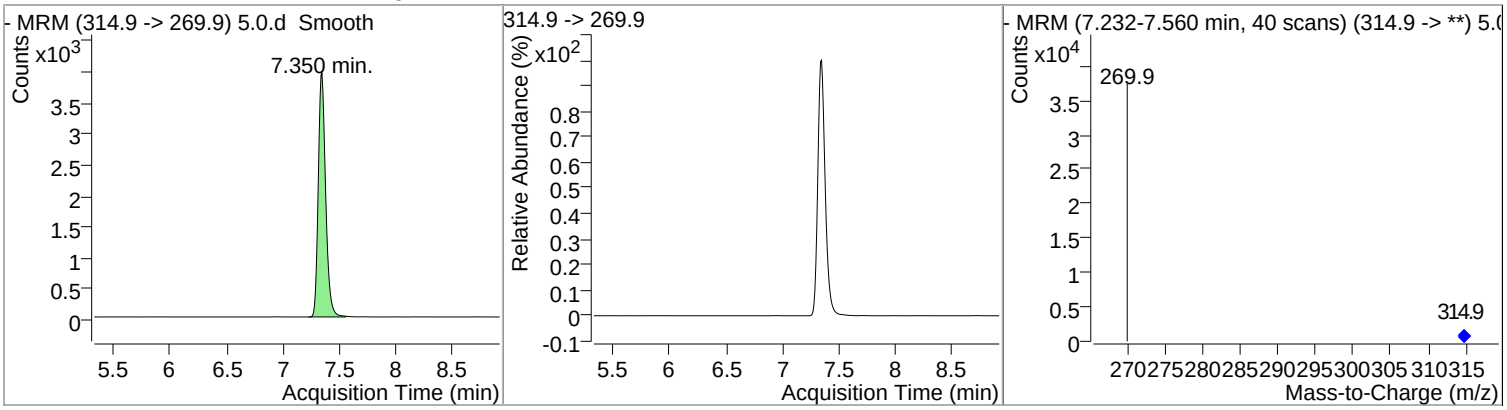
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	4783.0236	6.52	0.41	4873				



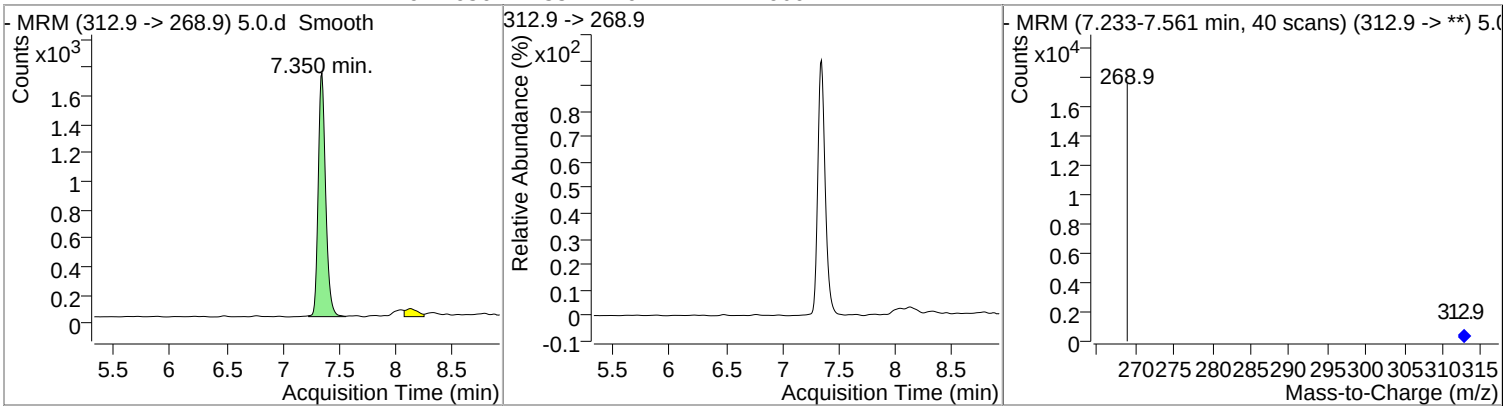
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	3872.5090	6.88	0.43	1379				



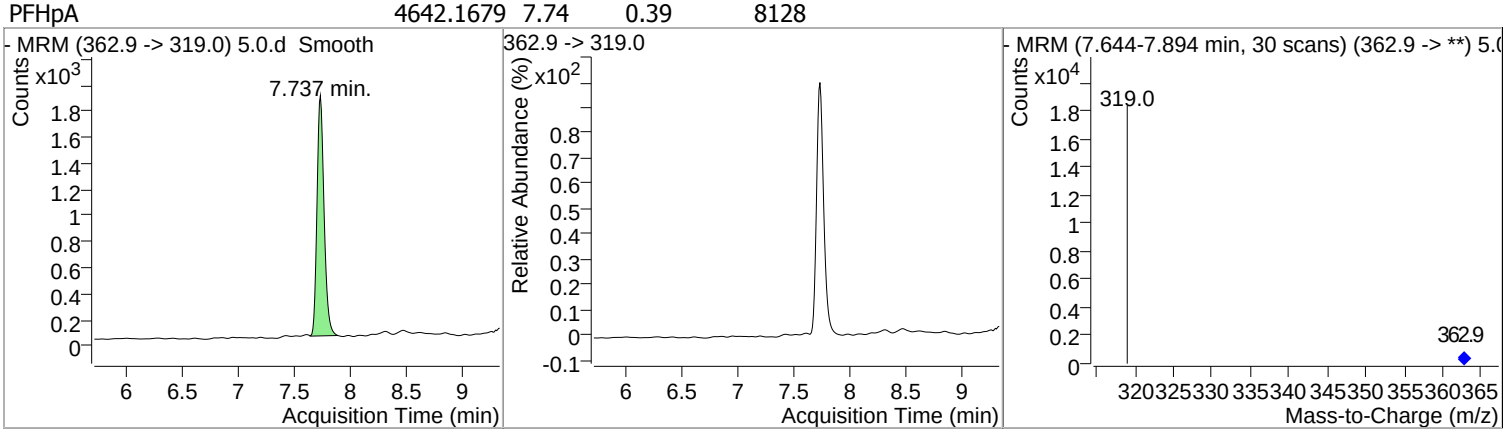
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	10107.3609	7.35	0.41	17954				



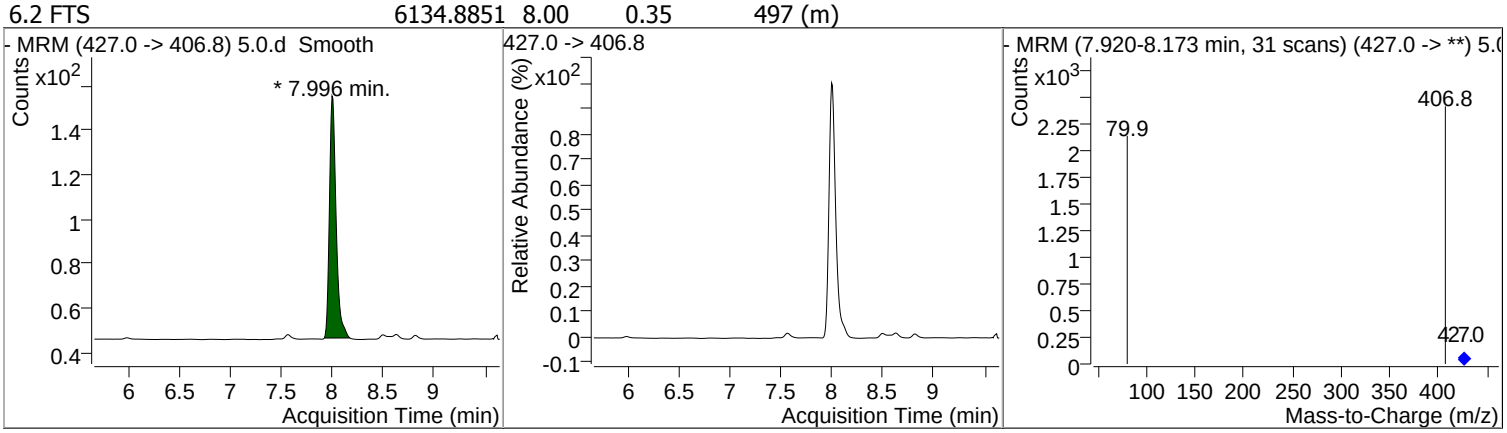
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	4814.8302	7.35	0.41	7860				



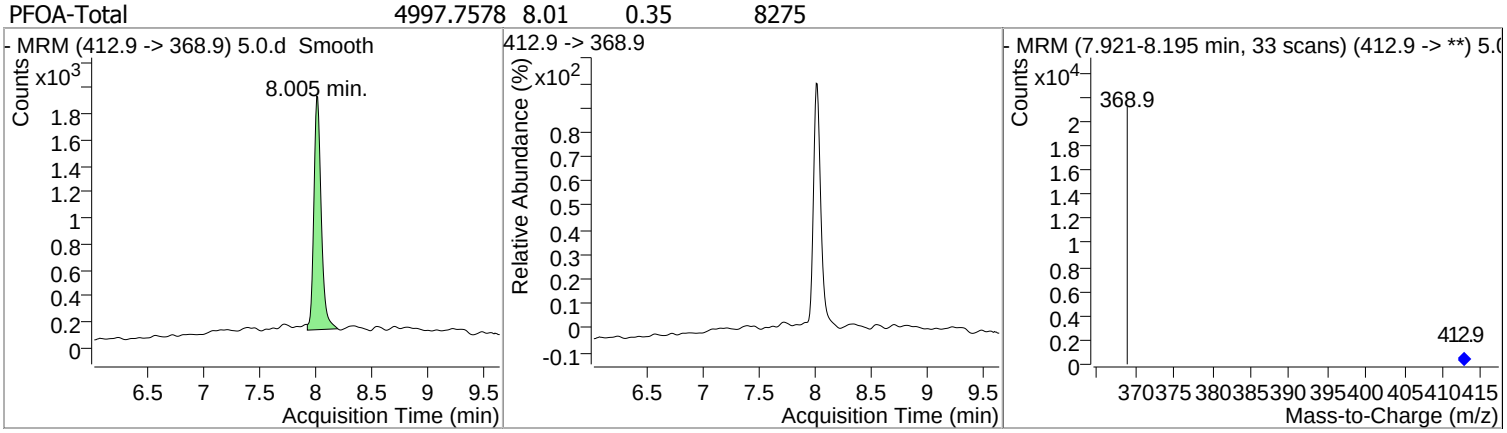
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	4642.1679	7.74	0.39	8128				



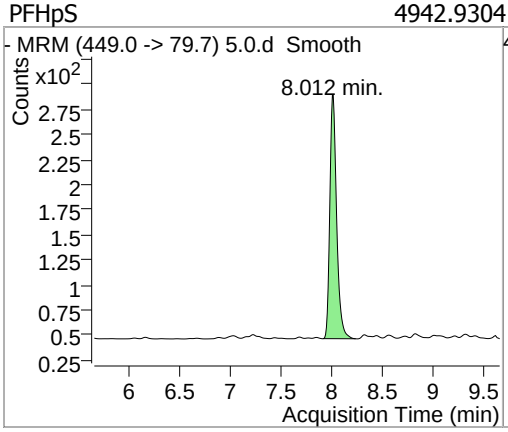
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	6134.8851	8.00	0.35	497 (m)				

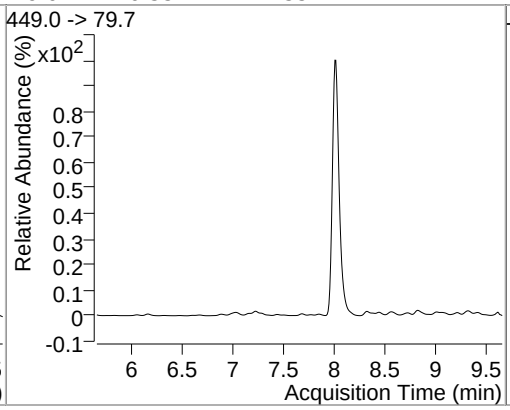


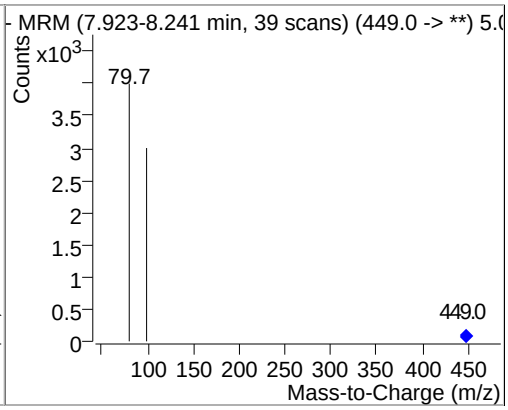
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	4997.7578	8.01	0.35	8275				



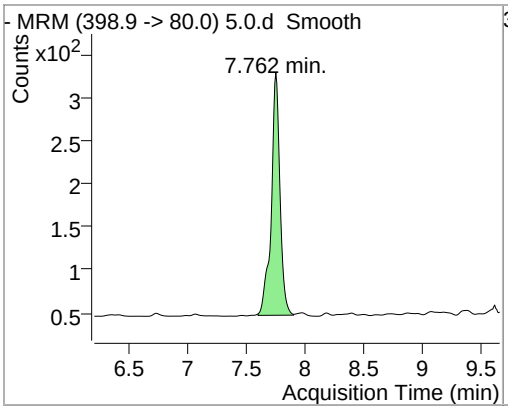
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	4942.9304	8.01	0.35	1135				

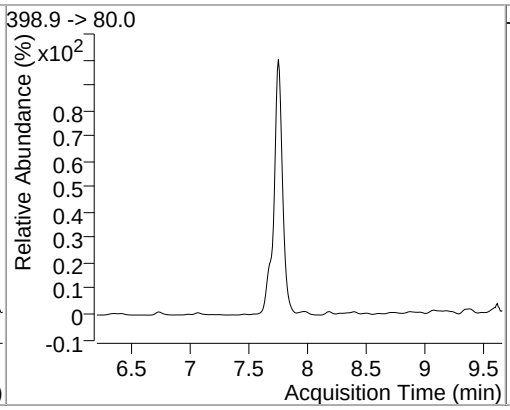


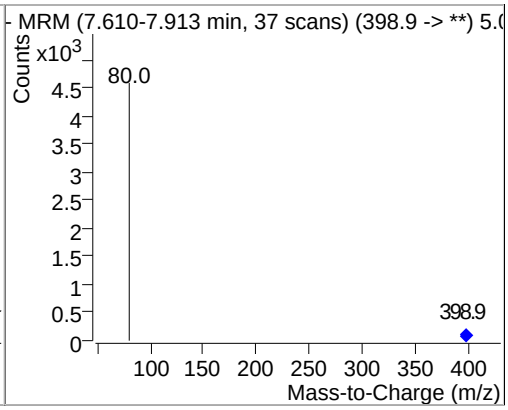




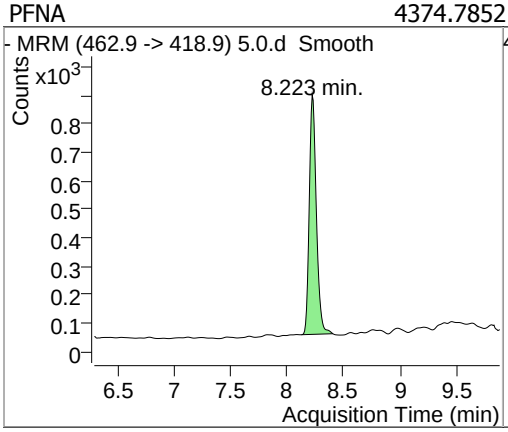
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	4530.4141	7.76	0.08	1465				

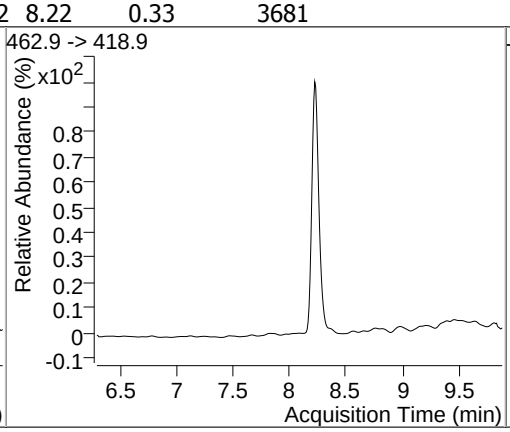


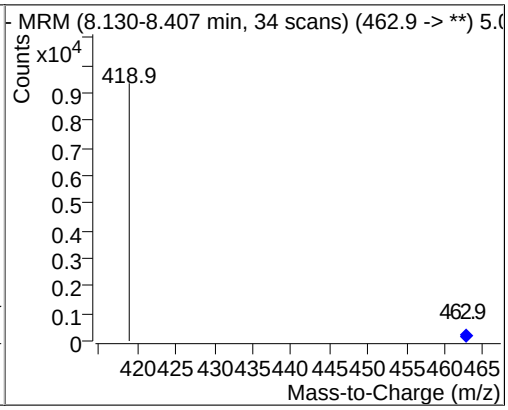




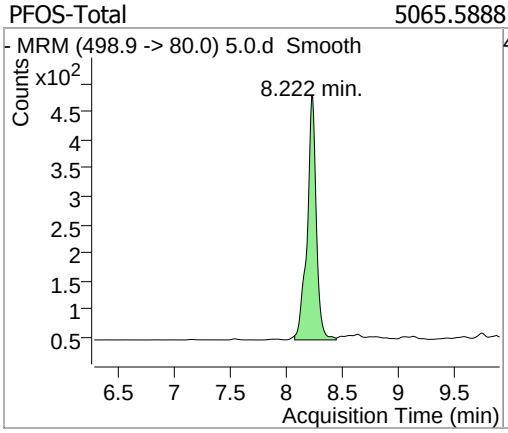
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	4374.7852	8.22	0.33	3681				

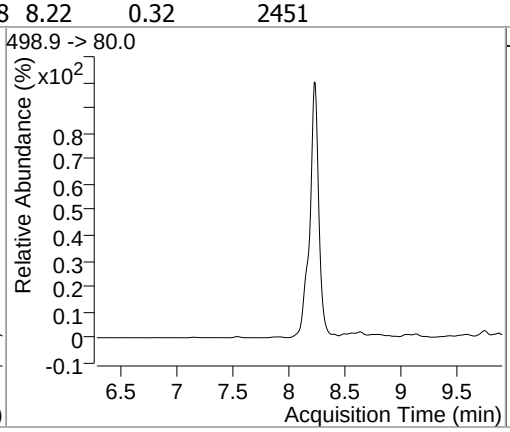


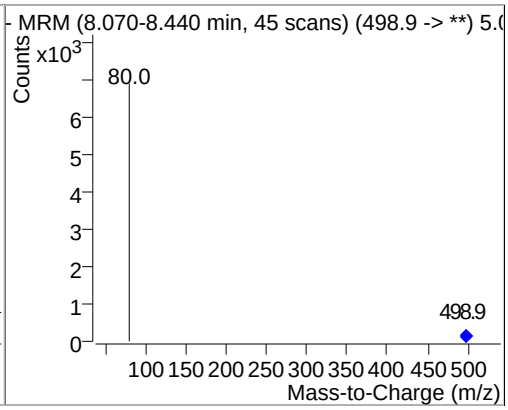




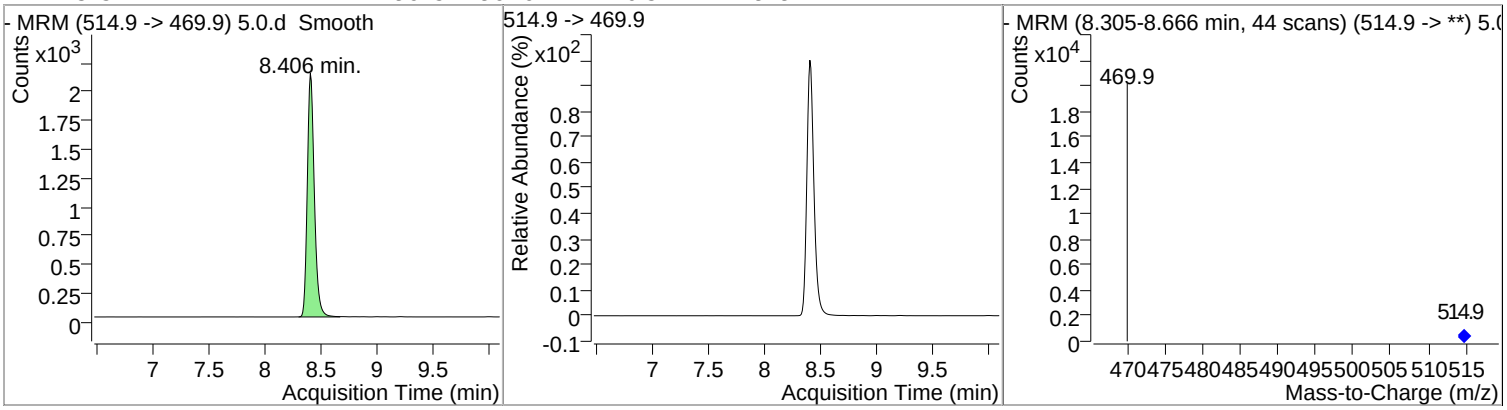
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	5065.5888	8.22	0.32	2451				



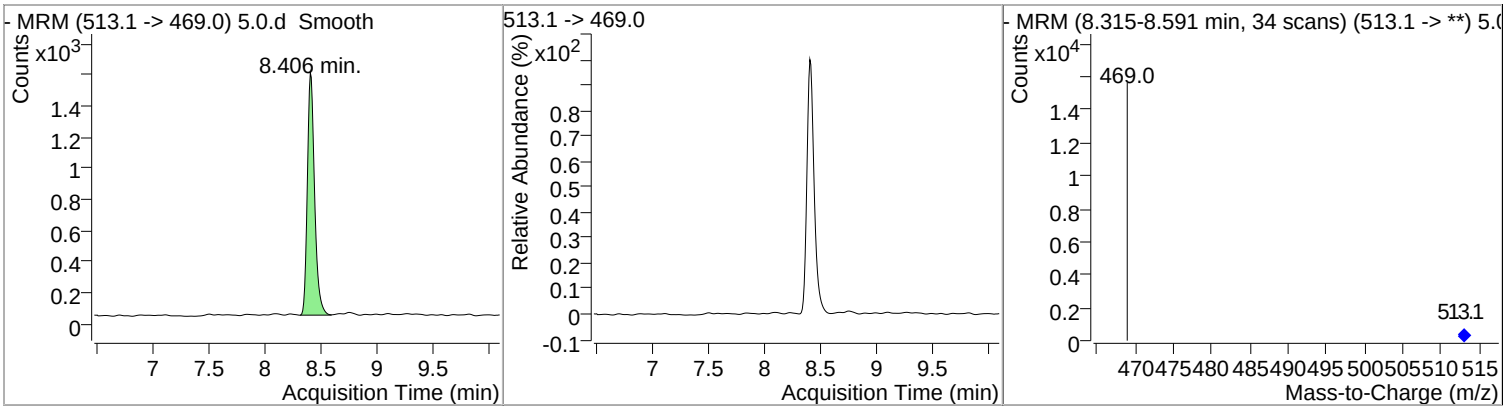




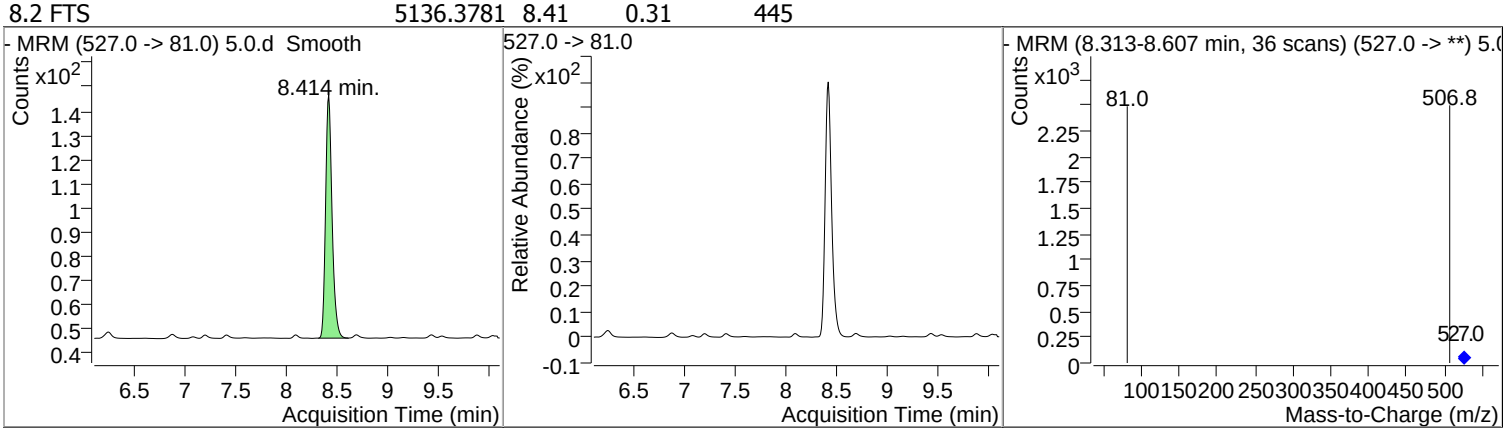
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	9815.7198	8.41	0.31	9191				



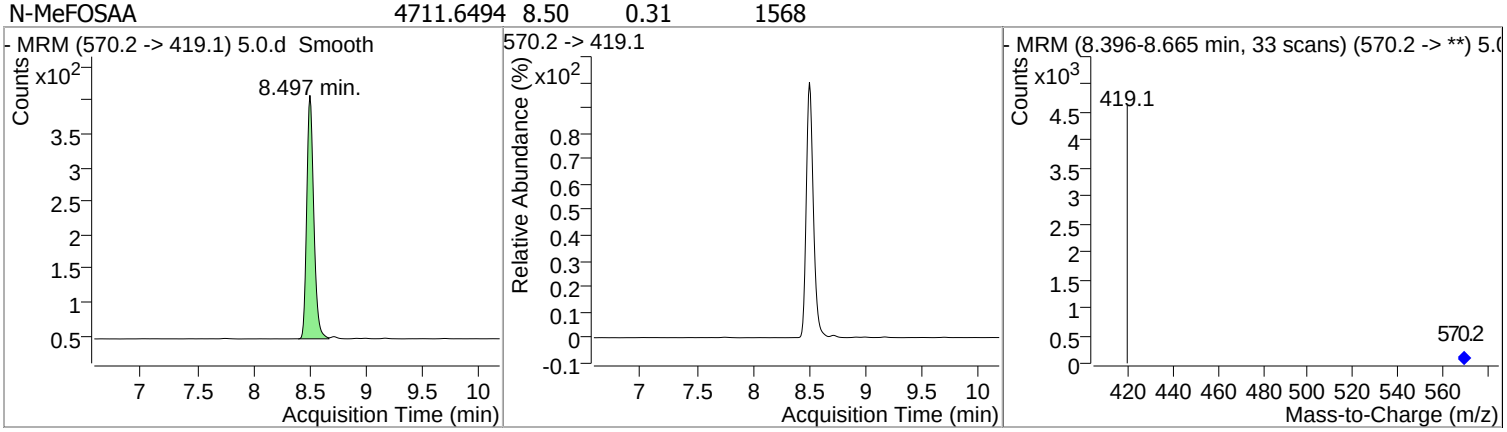
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	4857.3291	8.41	0.31	6948				



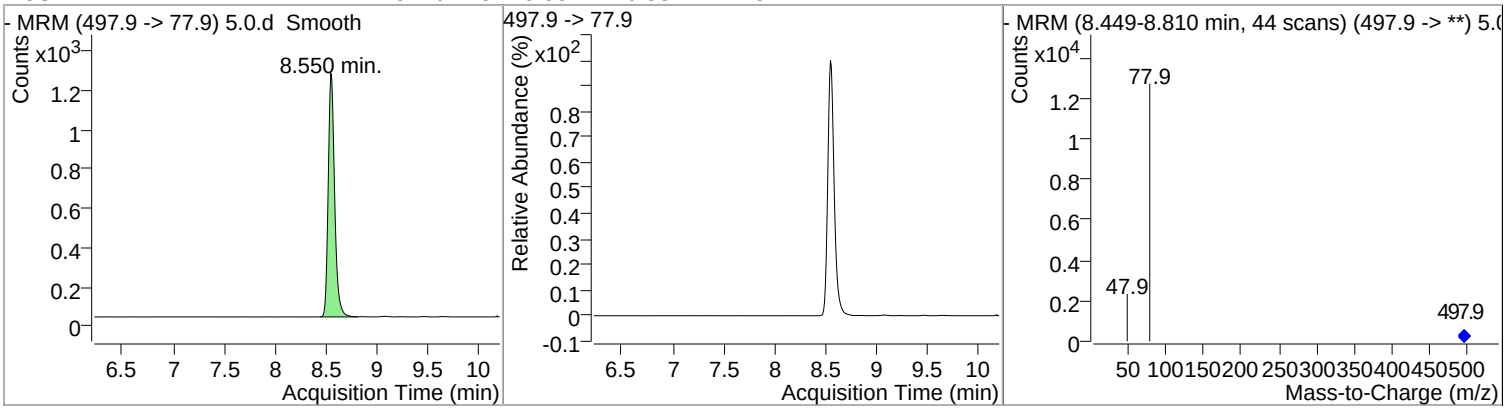
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	5136.3781	8.41	0.31	445				



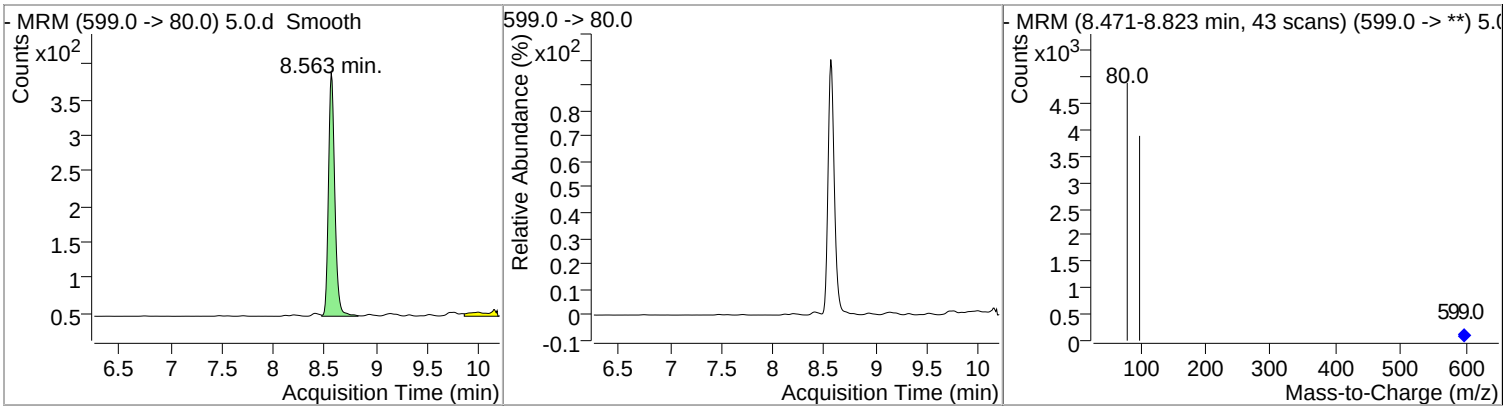
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	4711.6494	8.50	0.31	1568				



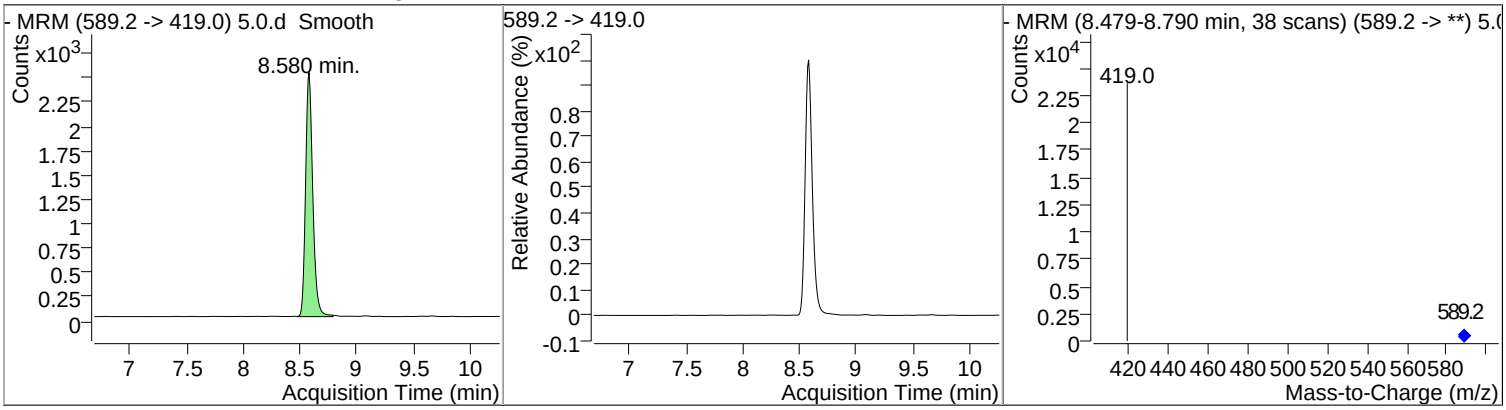
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	5246.4737	8.55	0.33	5421				



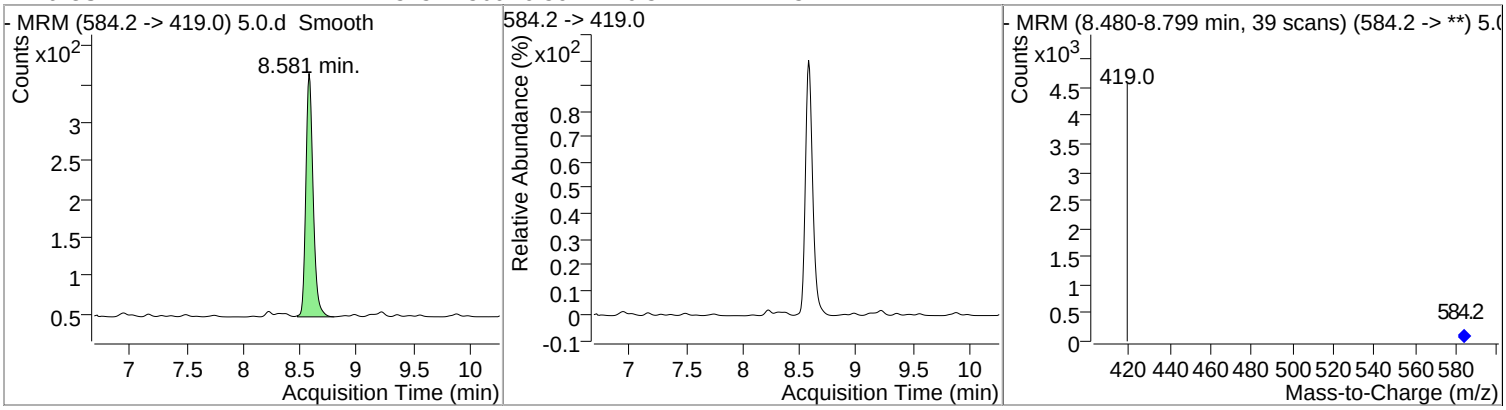
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	5127.7513	8.56	0.30	1469				



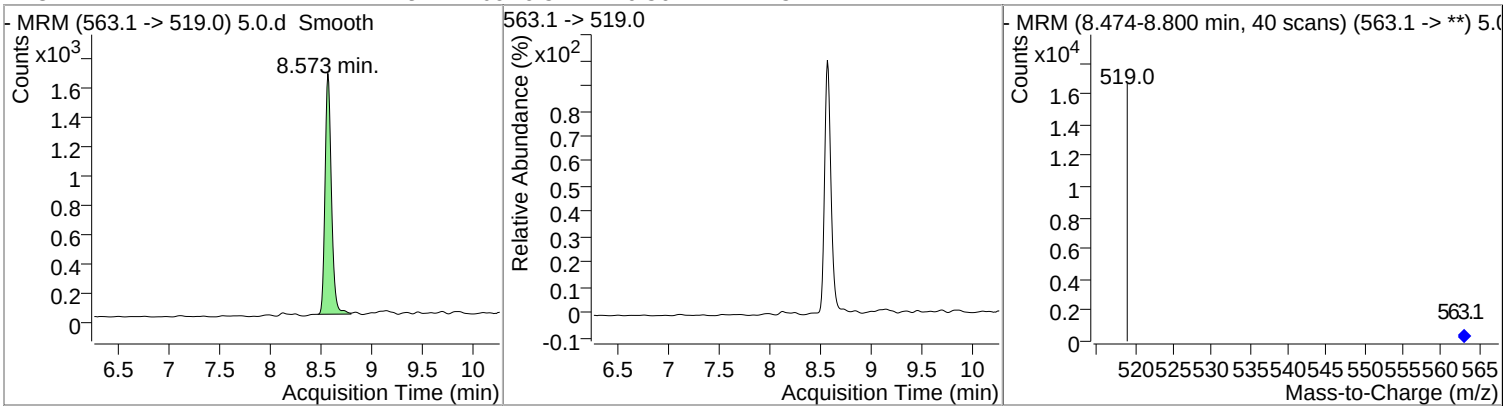
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	43236.2459	8.58	0.31	11031				



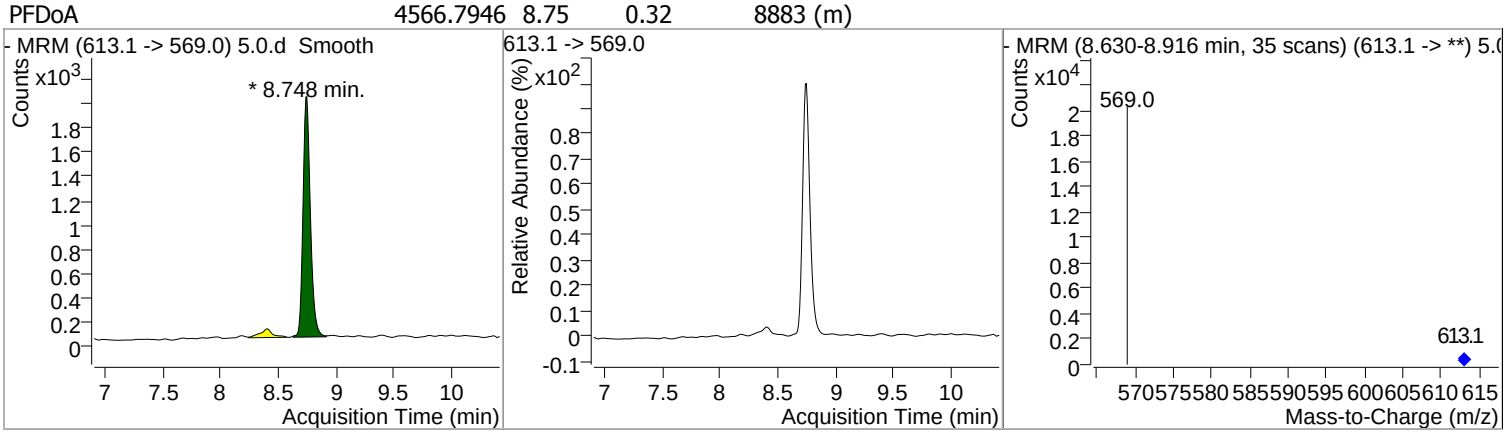
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	5254.2560	8.58	0.31	1423				



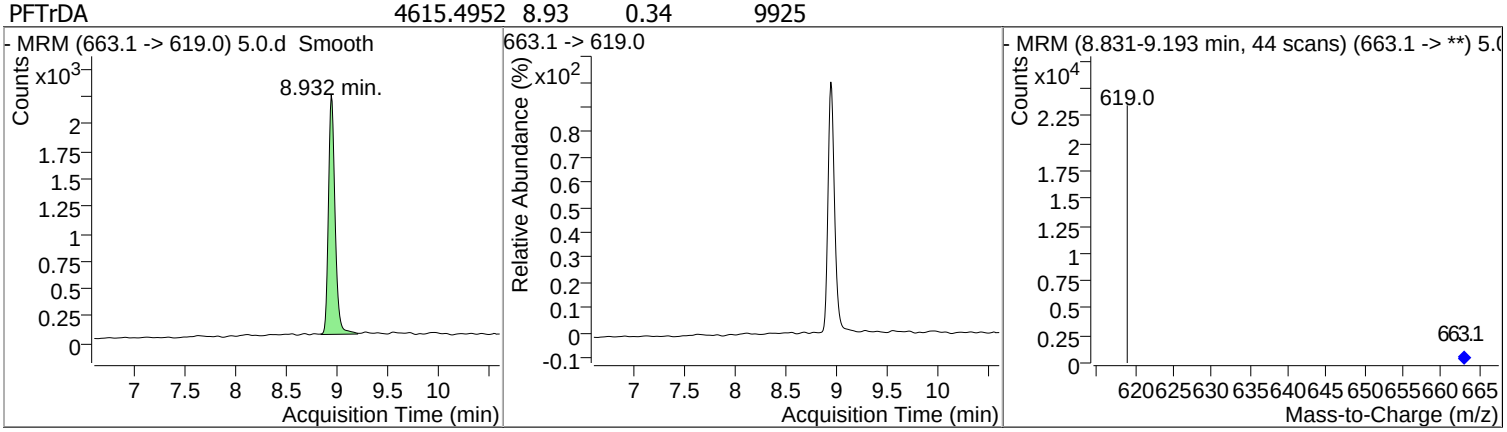
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	4974.1468	8.57	0.30	7152				



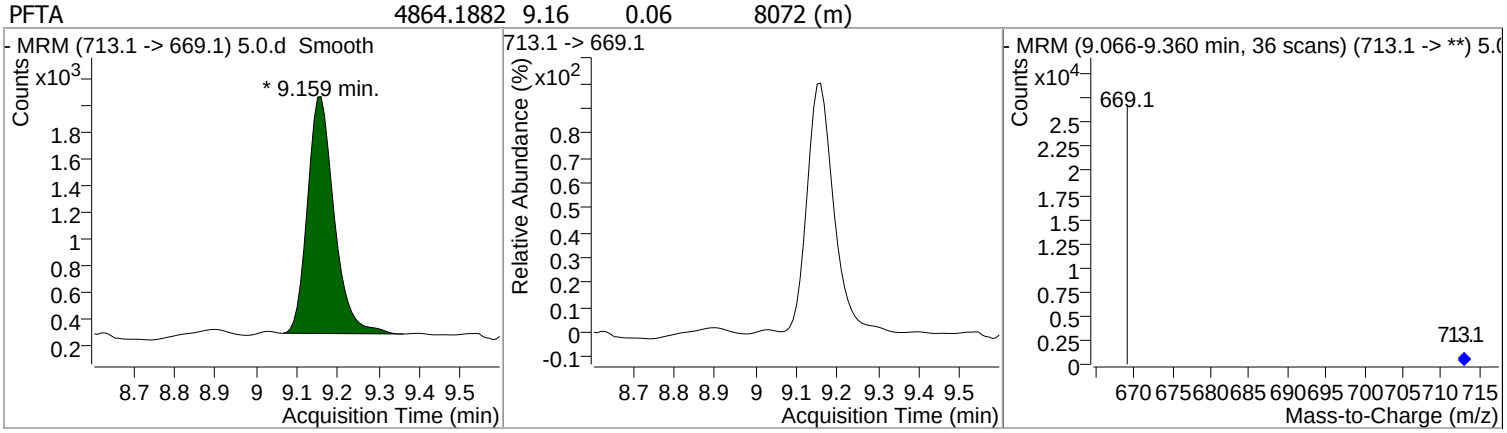
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	4566.7946	8.75	0.32	8883 (m)				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	4615.4952	8.93	0.34	9925				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	4864.1882	9.16	0.06	8072 (m)				

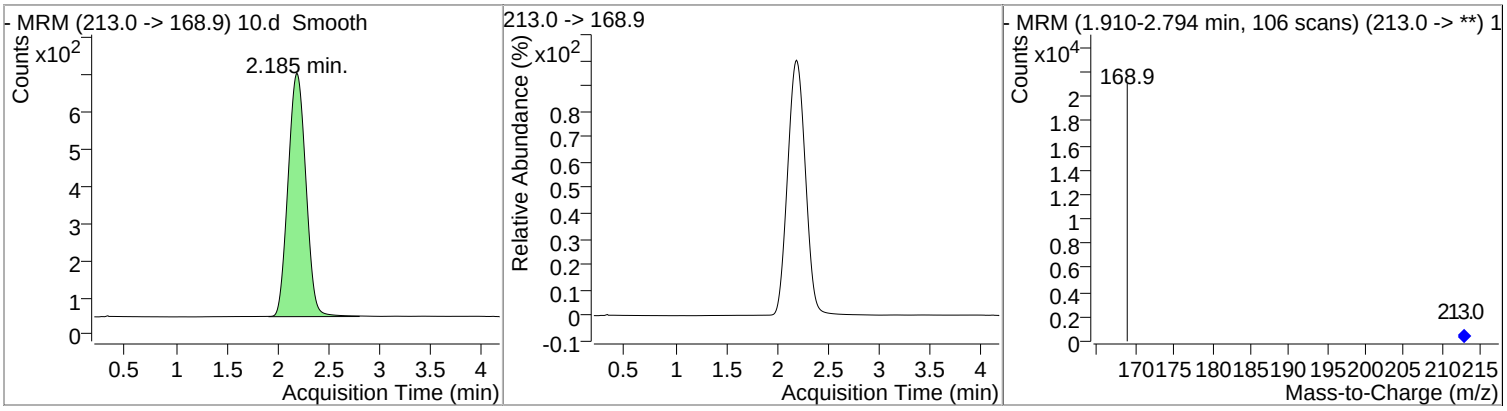


Data File	10.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/20/2018 10:18:55 PM
Sample Name	10	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

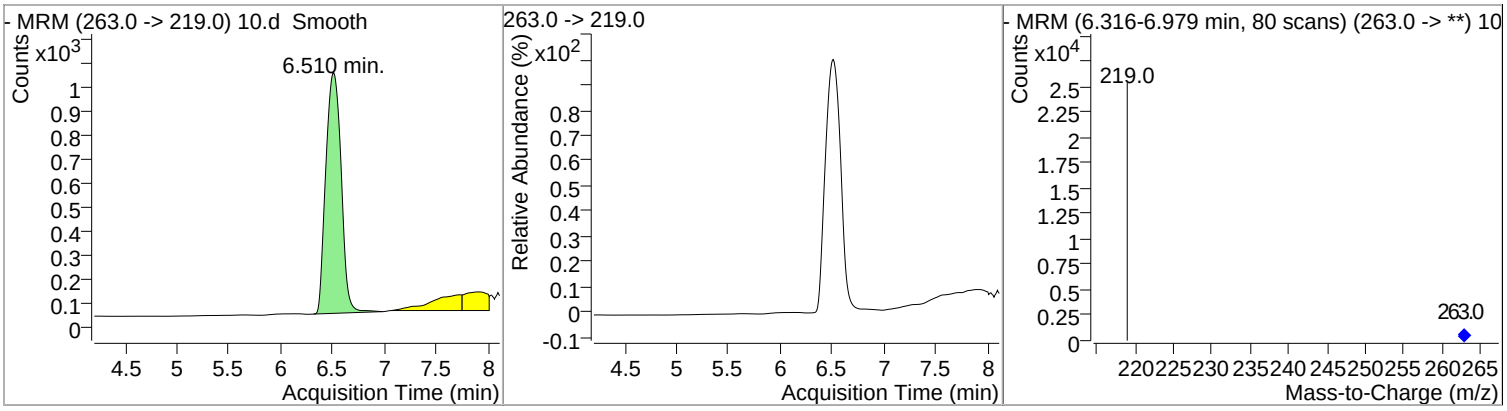
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	8.005	416.9 -> 371.9	13451	10000.0000	pg/ml		0.354
M PFOS C13	8.221	502.9 -> 80.0	11342	28700.0000	pg/ml		0.321
M d3-N-MeFOSAA	8.489	573.2 -> 419.0	11909	40000.0000	pg/ml		0.304
System Monitoring Compounds							
S PFHxA C13	7.350	314.9 -> 269.9	23664	14310.6240	pg/ml		0.413
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 143.11%		*	
S PFDA C13	8.406	514.9 -> 469.9	12662	14527.6889	pg/ml		0.313
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 145.28%		*	
S d5-N-MeFOSAA	8.572	589.2 -> 419.0	15795	60630.5370	pg/ml		0.304
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 151.58%		*	
Target Compounds							QValue
T PFBA	2.185	213.0 -> 168.9	7954	10540.4767	pg/ml		100
T PFPeA	6.510	263.0 -> 219.0	10313	10873.0545	pg/ml		100
T PFBS	6.880	298.9 -> 80.0	3326	9061.9664	pg/ml		100
T PFHxA	7.350	312.9 -> 268.9	16074	10578.1298	pg/ml		100
T PFHpA	7.737	362.9 -> 319.0	17043	10456.0374	pg/ml		100
T 6.2 FTS	8.005	427.0 -> 406.8	807	9671.3827	pg/ml		100
T PFOA-Total	8.005	412.9 -> 368.9	15790	10244.4642	pg/ml		100
T PFHpS	8.021	449.0 -> 79.7	1999	8450.4939	pg/ml		100
T PFHxS-Total	7.762	398.9 -> 80.0	3139	9420.1585	pg/ml		100
T PFNA	8.223	462.9 -> 418.9	7798	9954.3497	pg/ml		100
T PFOS-Total	8.222	498.9 -> 80.0	4808	9641.1778	pg/ml		100
T PFDA	8.406	513.1 -> 469.0	14415	10825.8146	pg/ml		100
T 8.2 FTS	8.414	527.0 -> 81.0	994	11134.8942	pg/ml		100
T N-MeFOSAA	8.489	570.2 -> 419.1	3524	10368.4550	pg/ml		100
T FOSA	8.550	497.9 -> 77.9	11255	10667.7827	pg/ml		100
T PFDS	8.563	599.0 -> 80.0	3039	10290.5888	pg/ml		100
T N-EtFOSAA	8.581	584.2 -> 419.0	3218	11635.5315	pg/ml		100
T PFUnA	8.573	563.1 -> 519.0	13957	10428.2155	pg/ml		100
T PFDoA	8.739	613.1 -> 569.0	18057	9972.1573	pg/ml		100
T PFTrDA	8.924	663.1 -> 619.0	20309	10146.2362	pg/ml		100
T PFTA	9.142	713.1 -> 669.1	15515	10043.2813	pg/ml	m	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

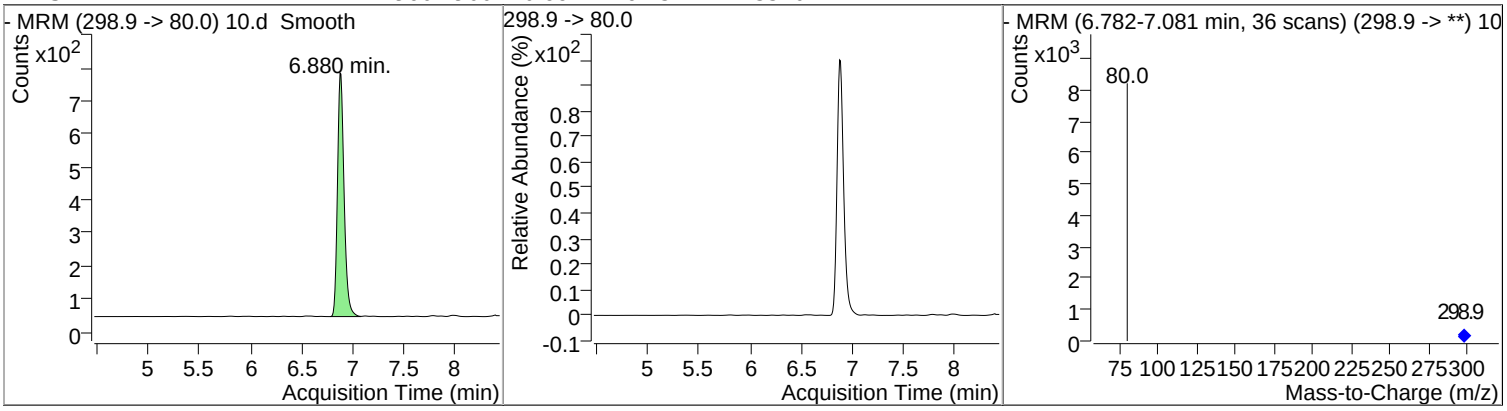
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	10540.4767	2.19	0.01	7954				



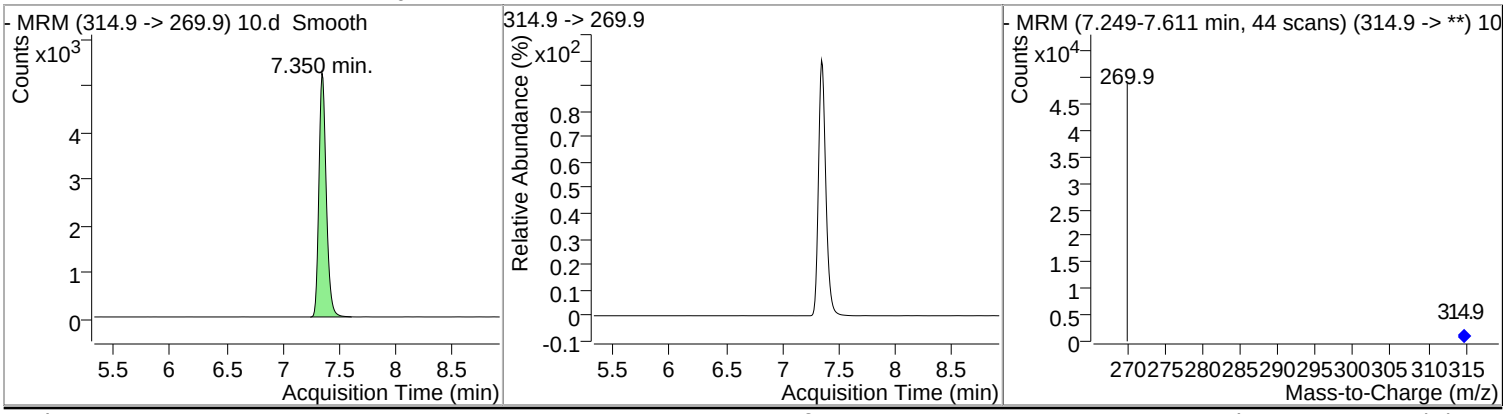
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	10873.0545	6.51	0.40	10313				



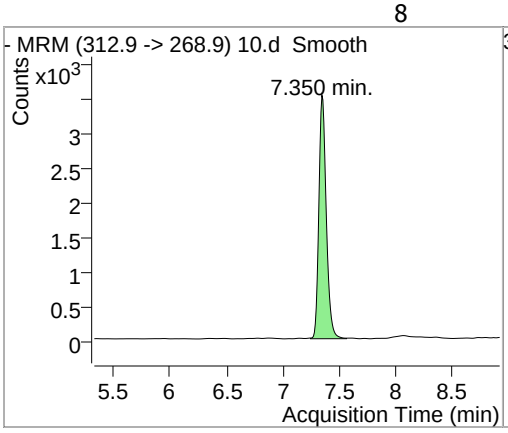
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	9061.9664	6.88	0.43	3326				

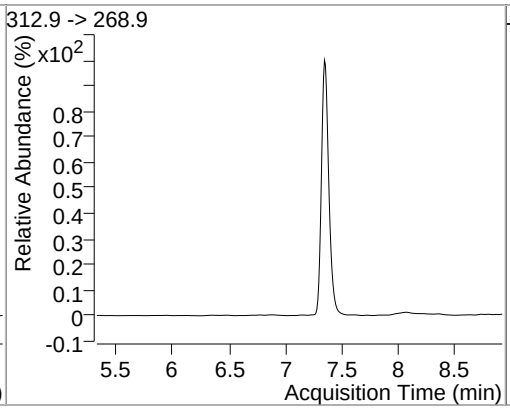


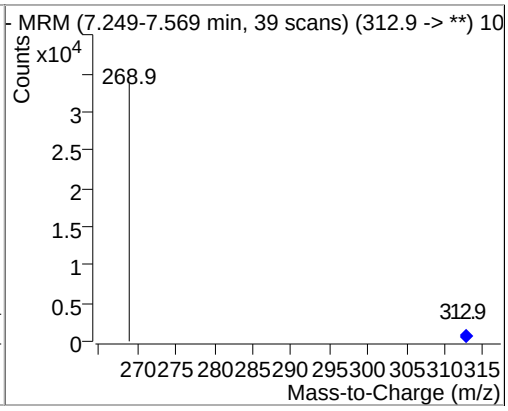
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	14310.6240	7.35	0.41	23664				



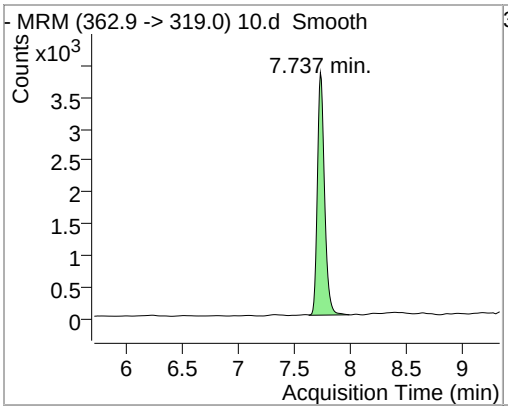
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PFHxA	10578.1298	7.35	0.41	16074				

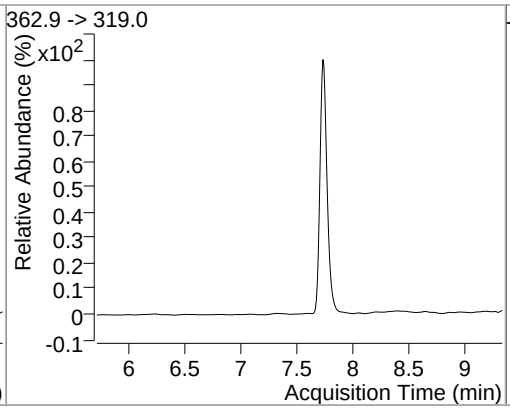


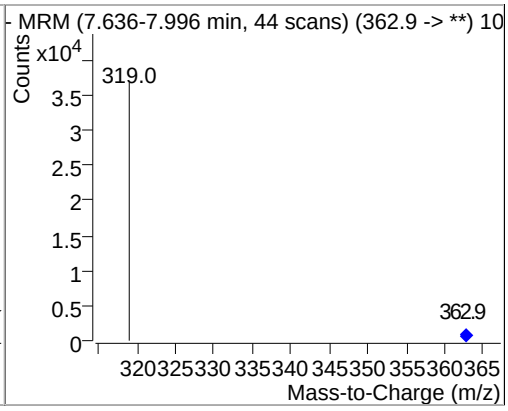




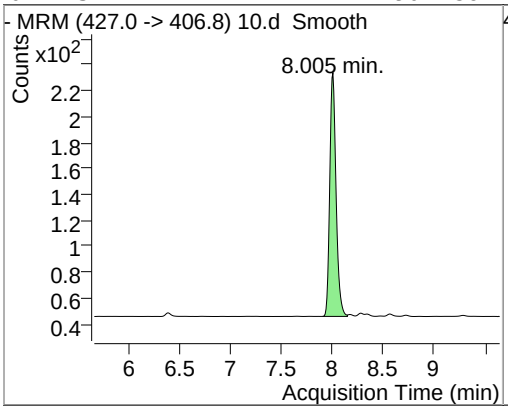
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	10456.0374	7.74	0.39	17043				

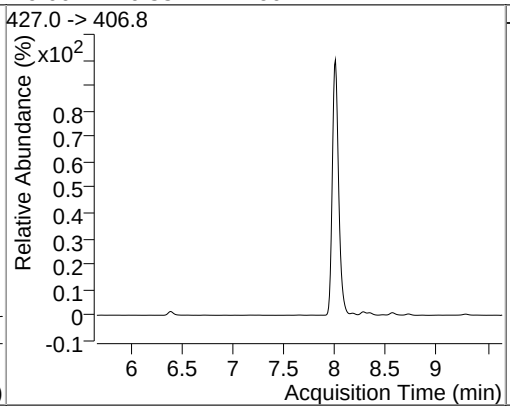


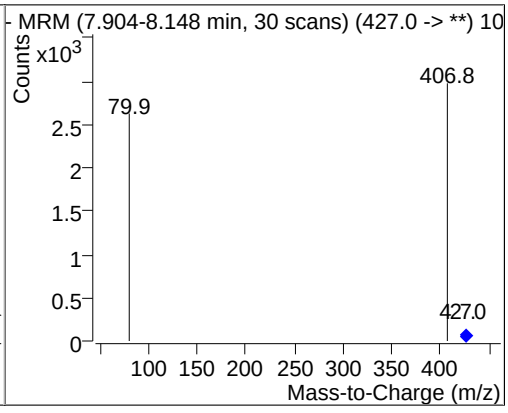




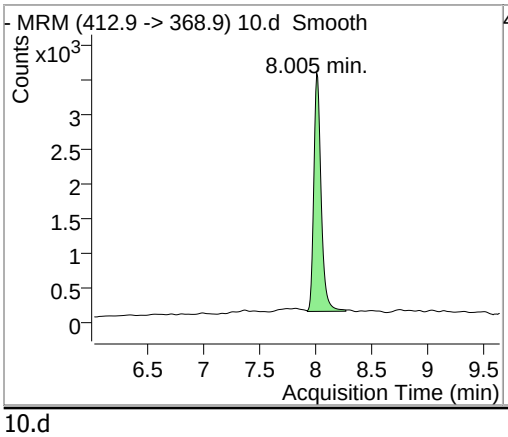
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	9671.3827	8.00	0.35	807				

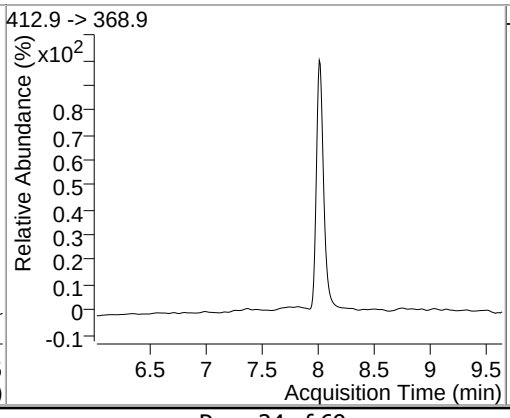


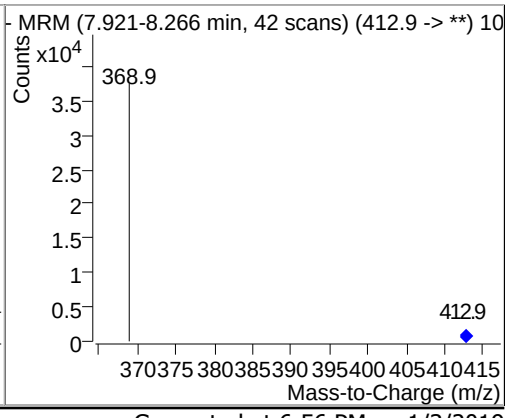




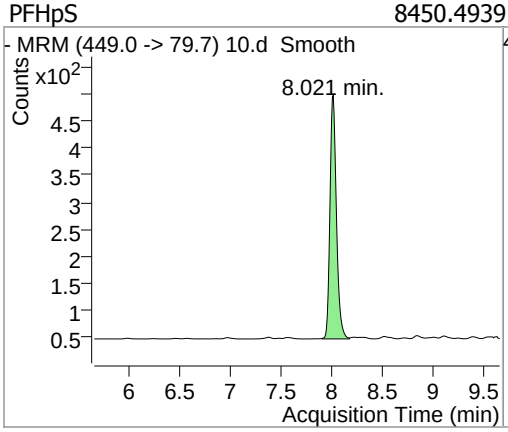
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	10244.4642	8.01	0.35	15790				

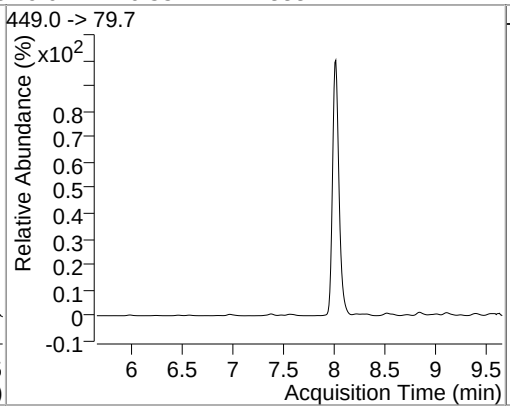


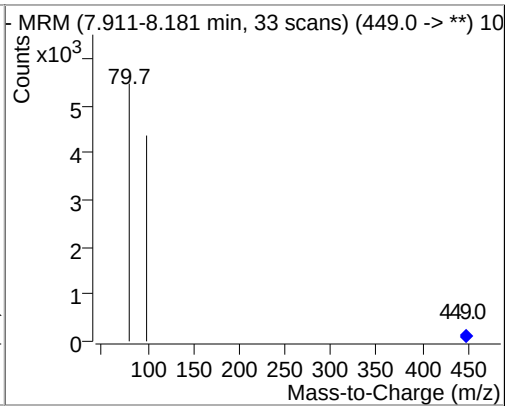




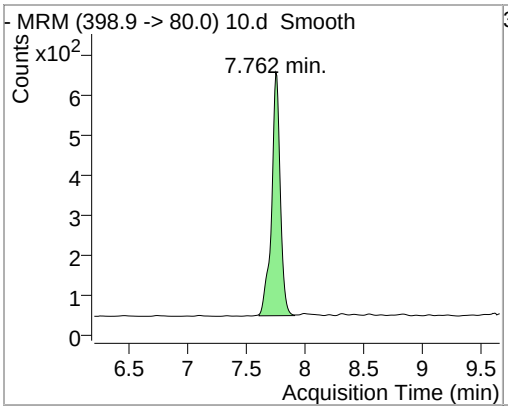
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	8450.4939	8.02	0.35	1999				

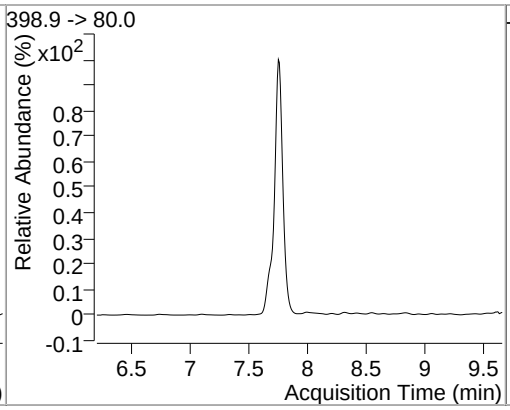


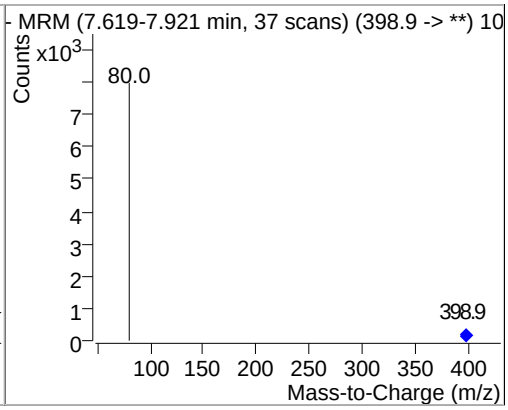




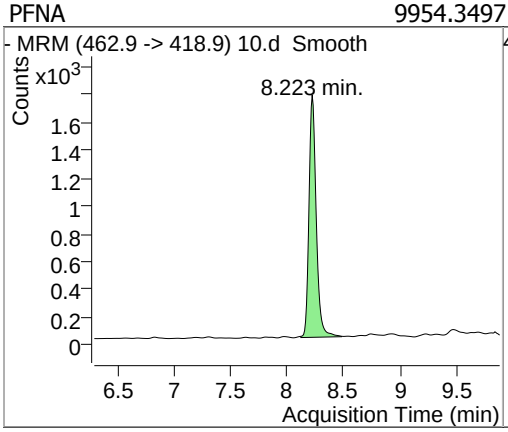
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	9420.1585	7.76	0.08	3139				

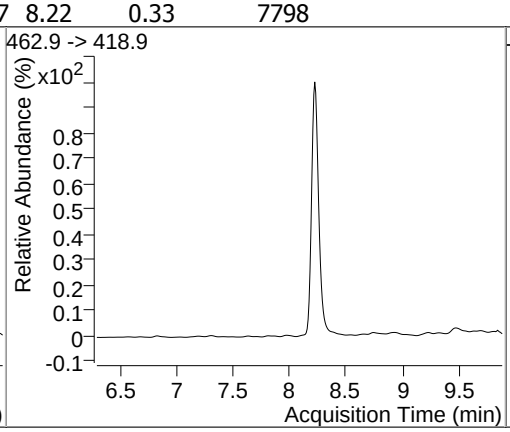


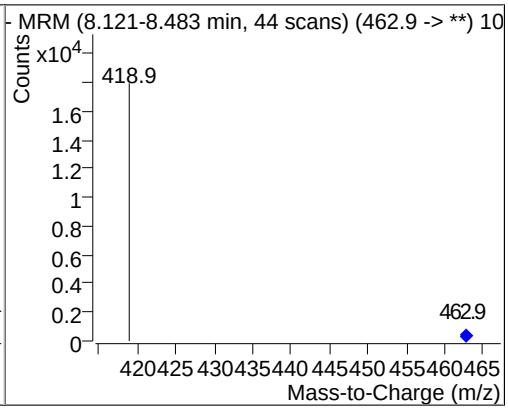




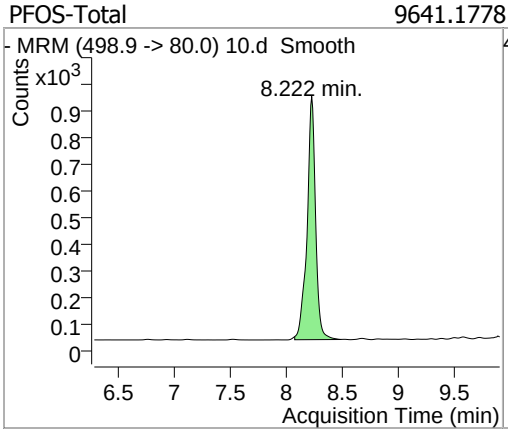
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	9954.3497	8.22	0.33	7798				

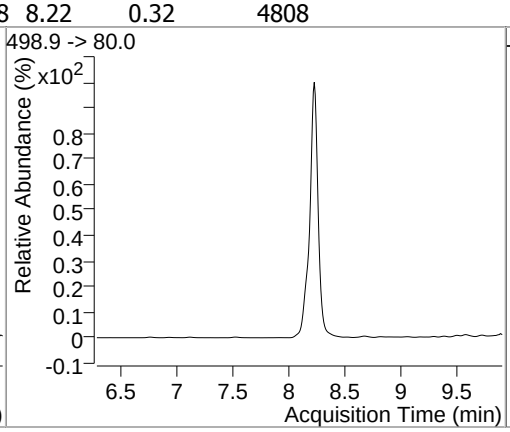


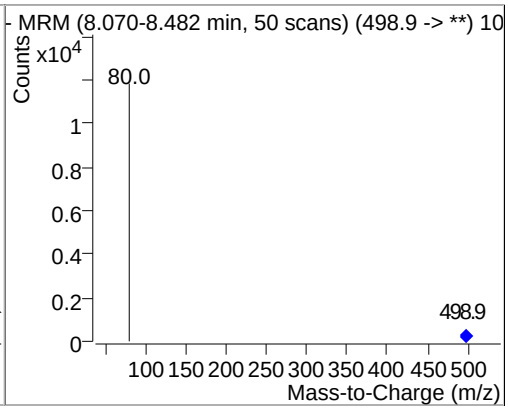




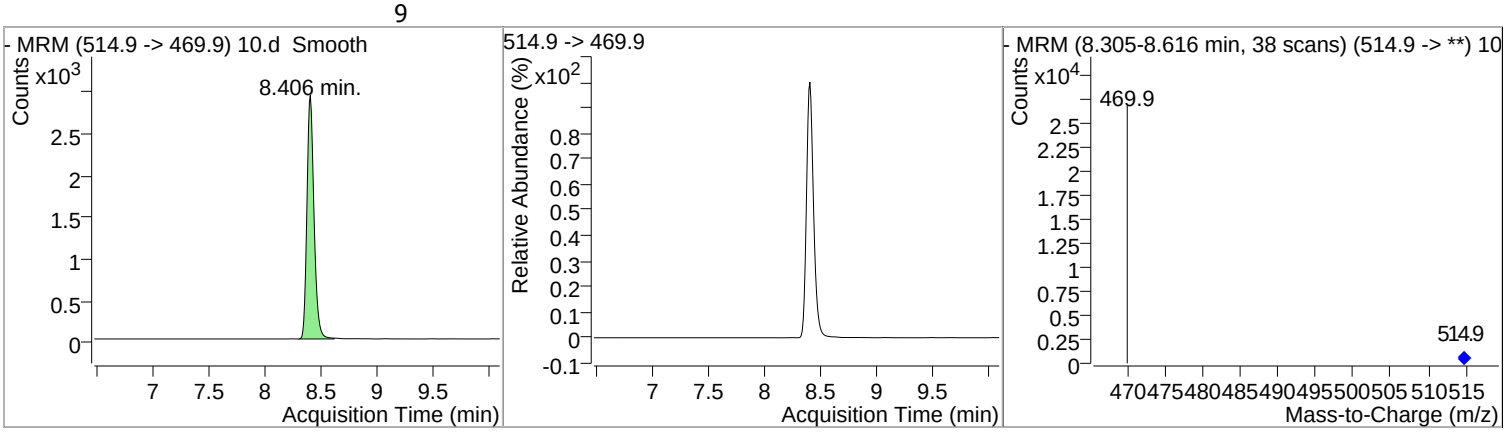
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	9641.1778	8.22	0.32	4808				



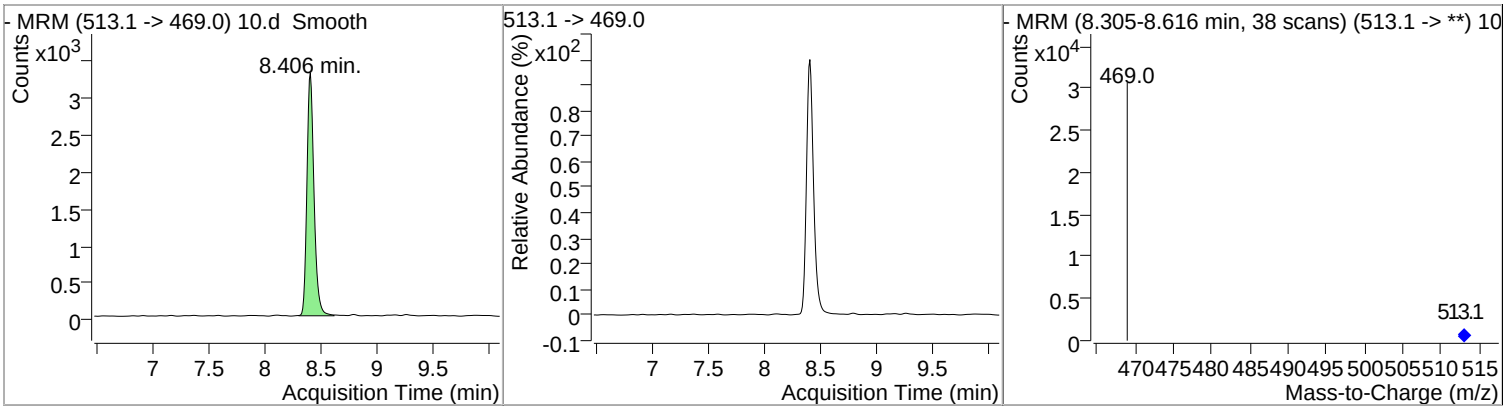




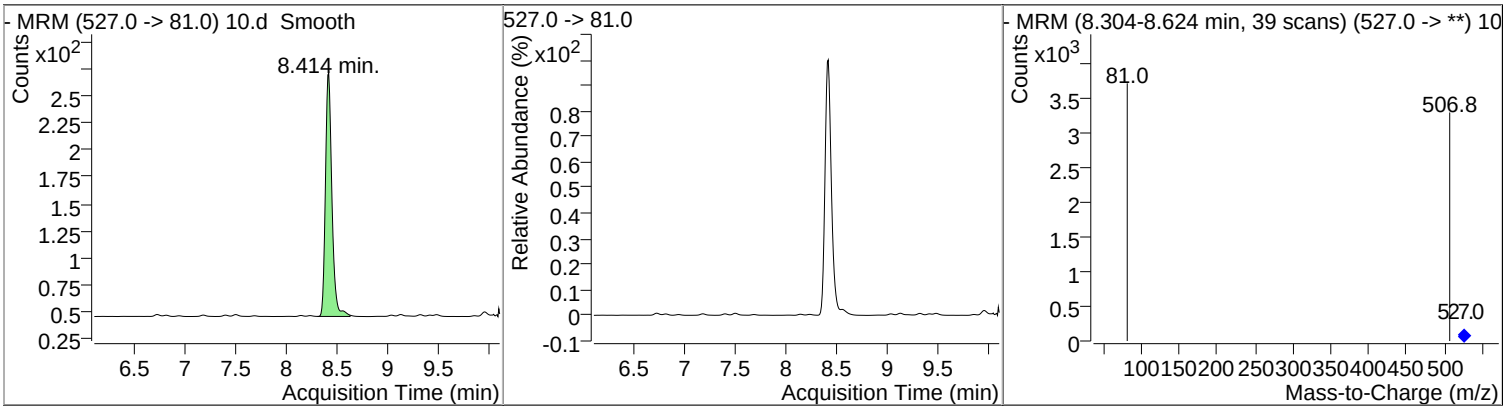
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	14527.6889	8.41	0.31	12662				



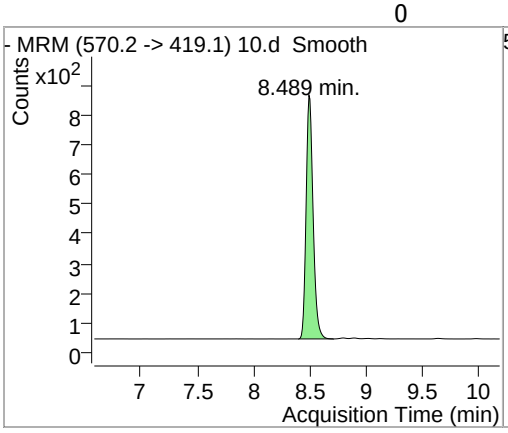
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	10825.8146	8.41	0.31	14415				

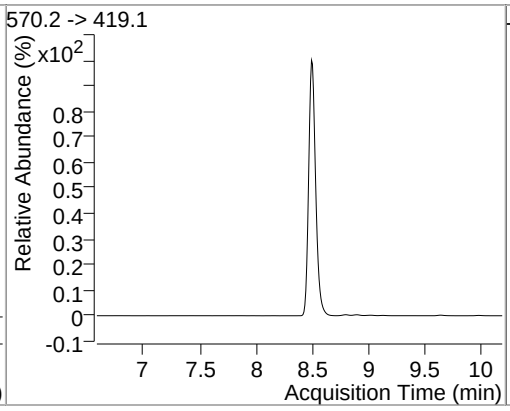


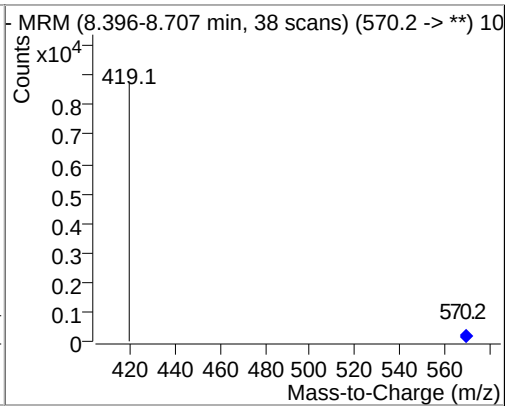
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	11134.8942	8.41	0.31	994				



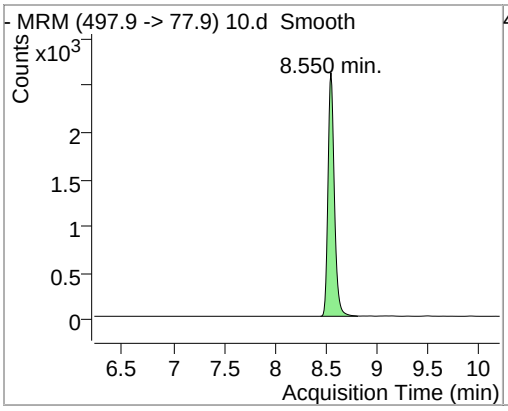
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	10368.4550	8.49	0.30	3524				

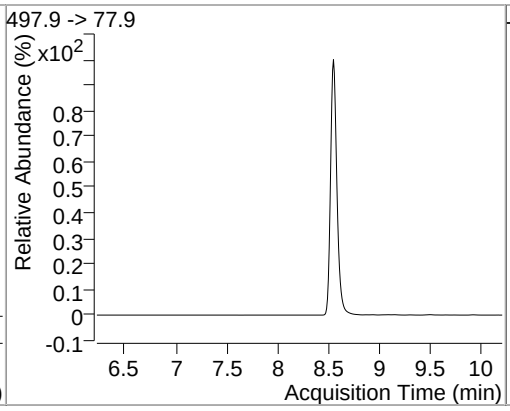


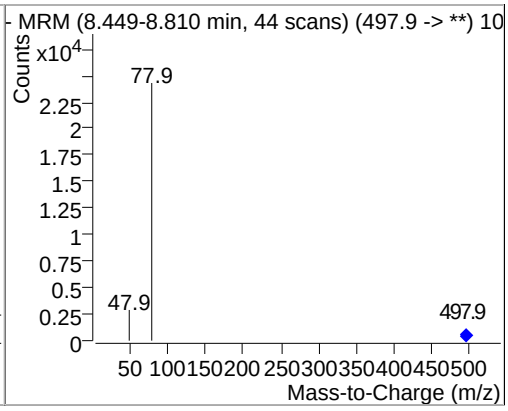




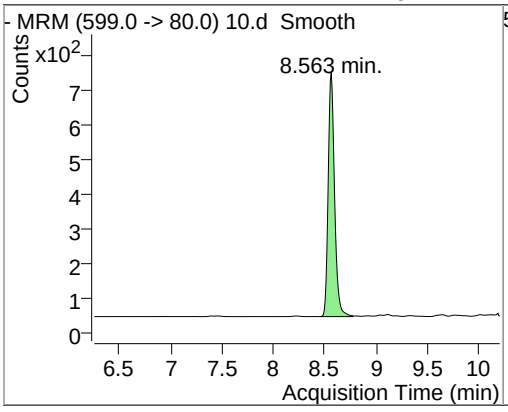
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	10667.7827	8.55	0.33	11255				

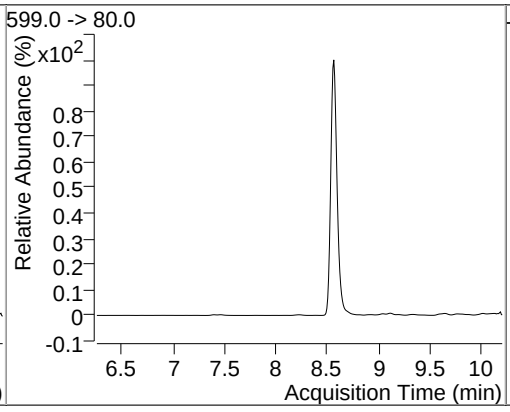


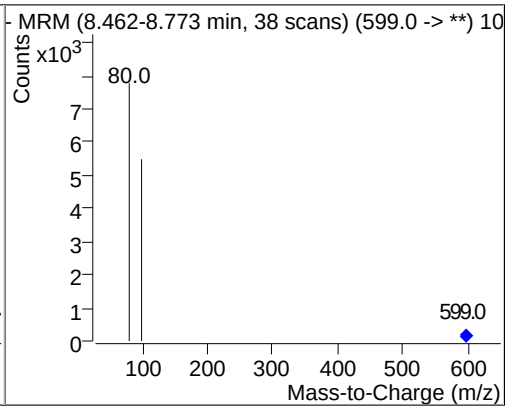




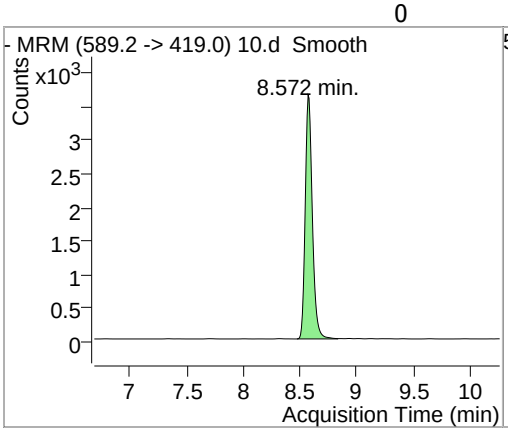
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	10290.5888	8.56	0.30	3039				

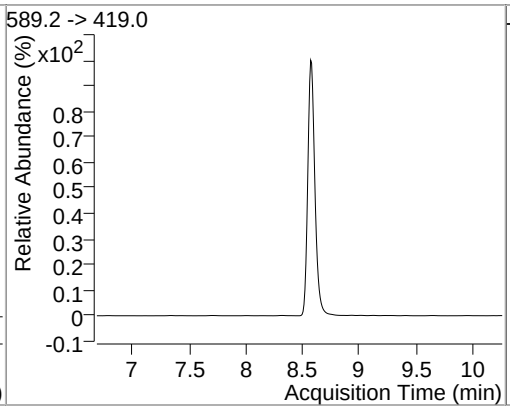


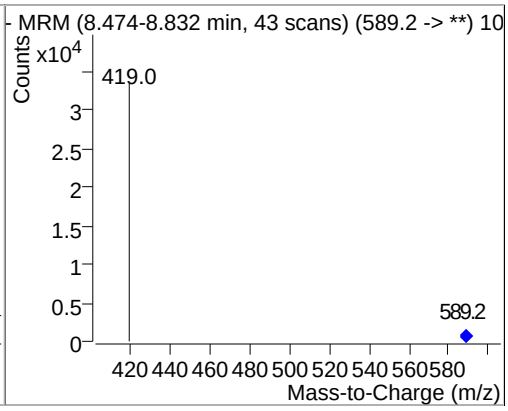




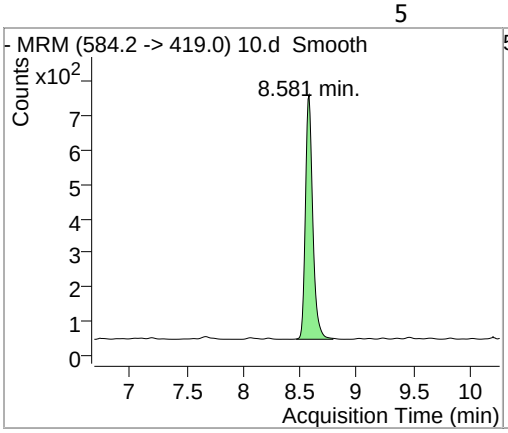
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	60630.5370	8.57	0.30	15795				

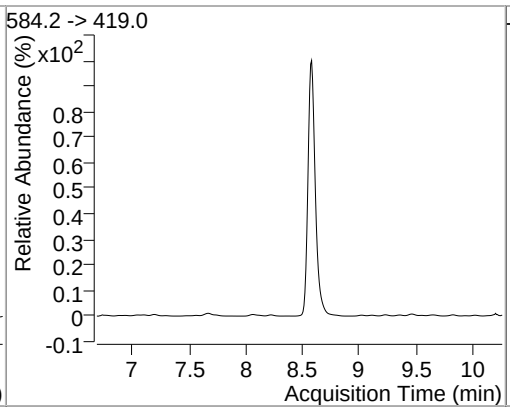


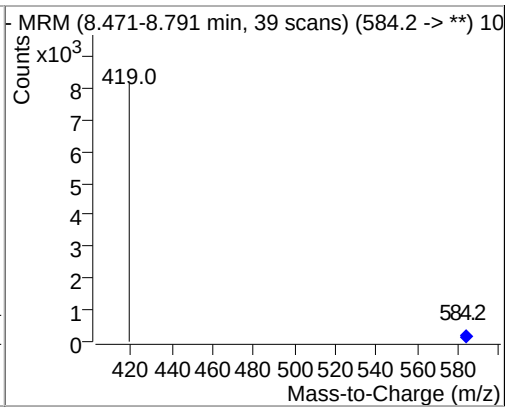




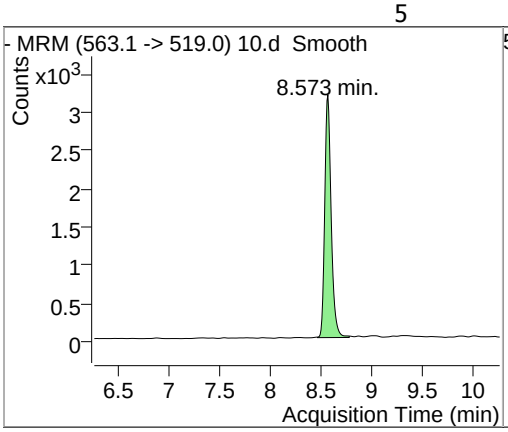
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	11635.5315	8.58	0.31	3218				

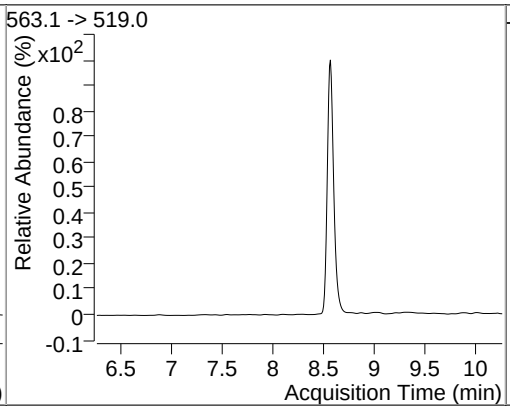


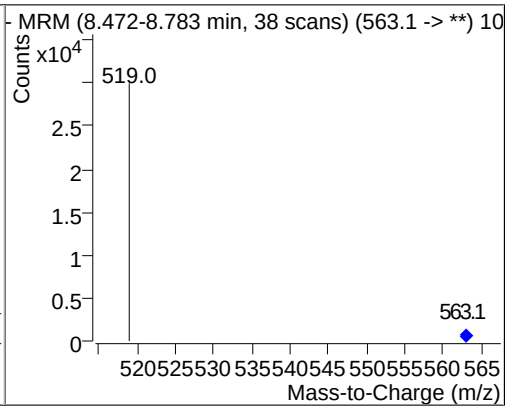




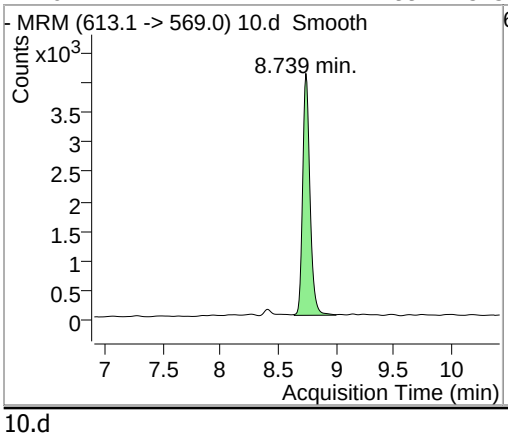
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	10428.2155	8.57	0.30	13957				

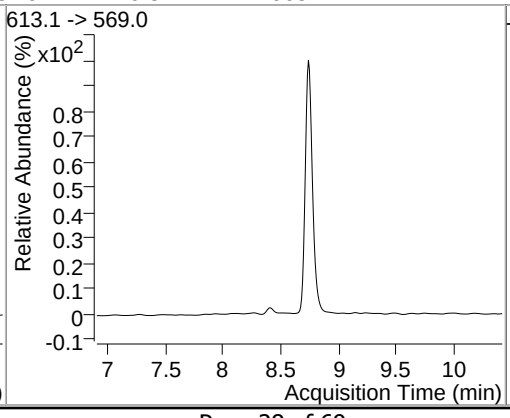


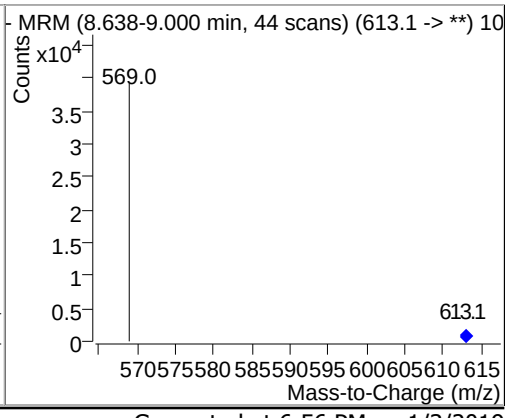




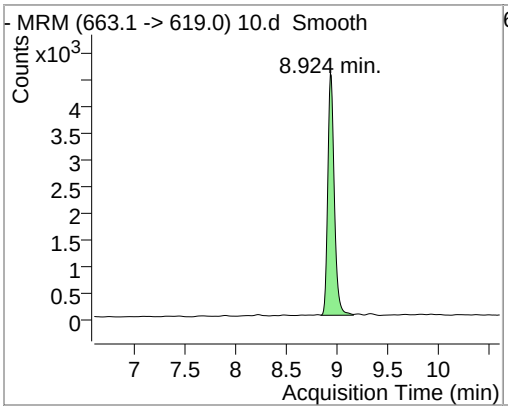
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	9972.1573	8.74	0.31	18057				

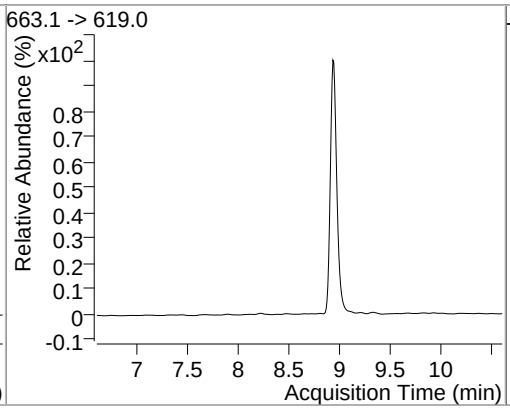


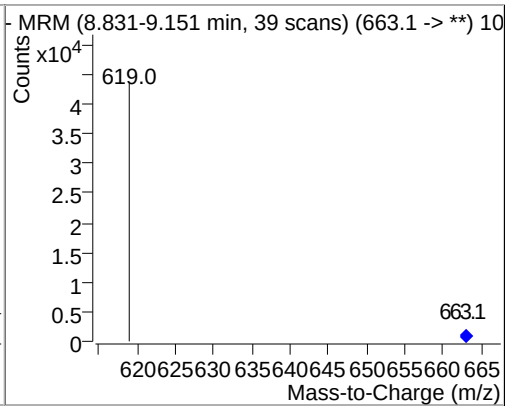




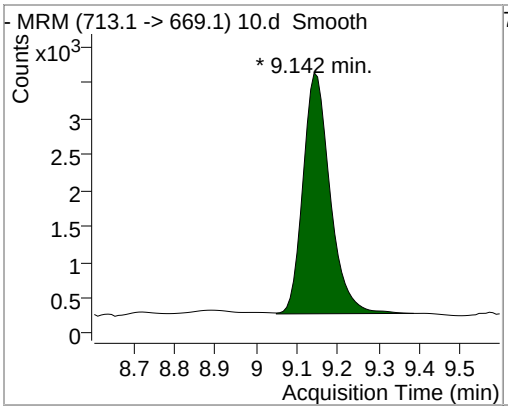
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	10146.2362	8.92	0.33	20309				

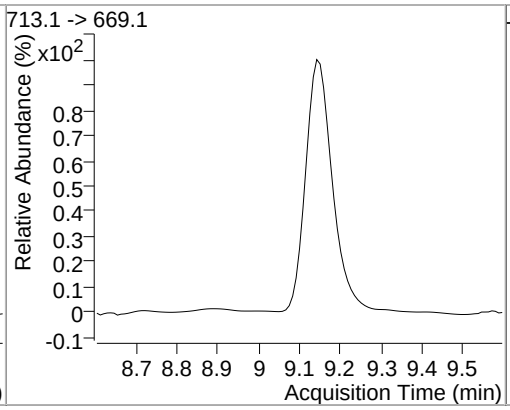


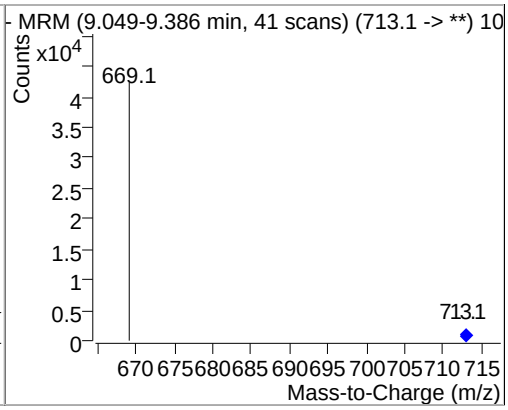




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	10043.2813	9.14	0.04	15515 (m)				





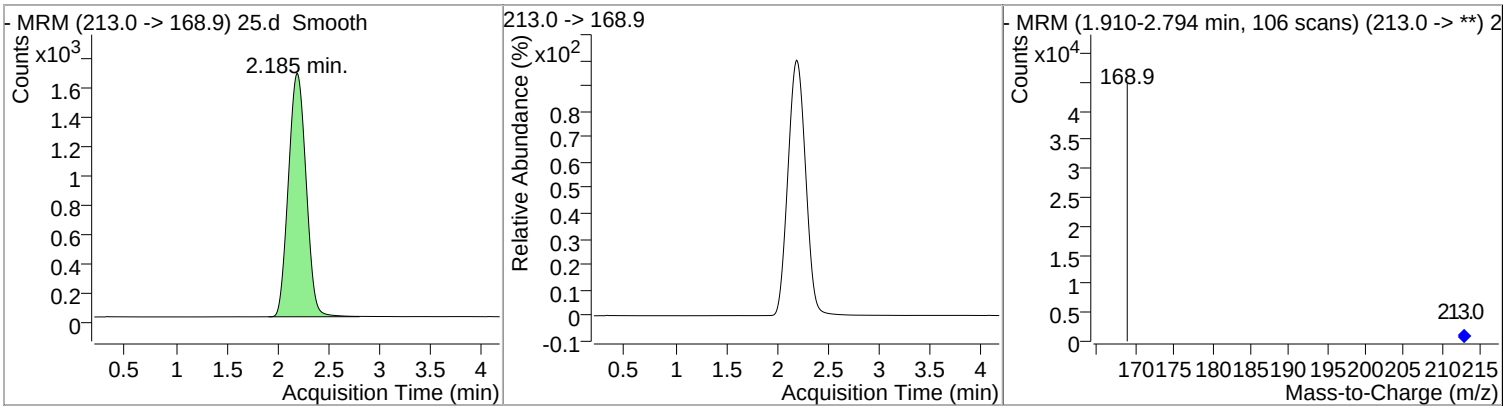


Data File	25.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/20/2018 10:31:41 PM
Sample Name	25	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

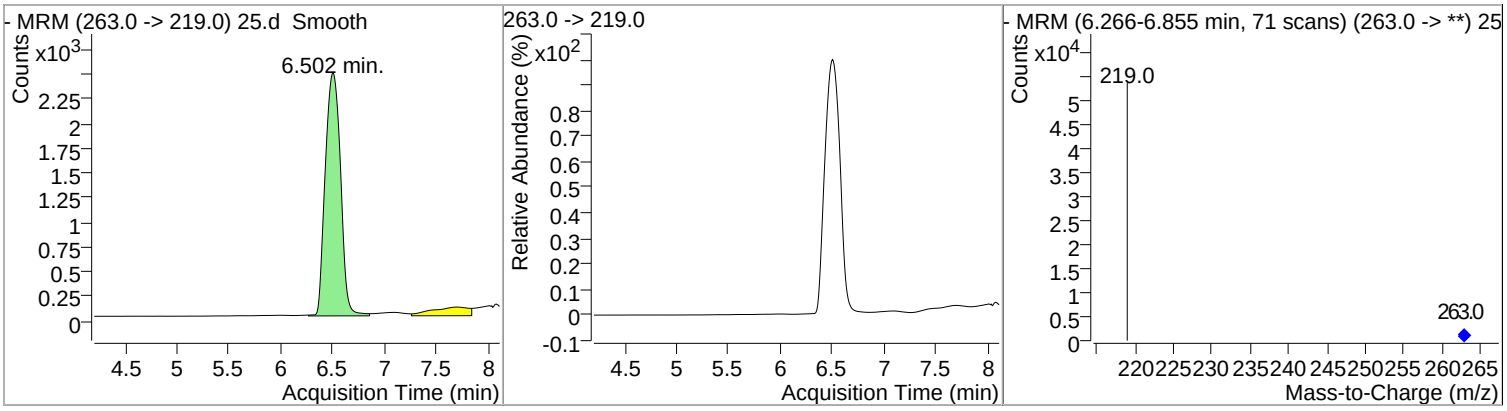
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	8.005	416.9 -> 371.9	14279	10000.0000	pg/ml		0.354
M PFOS C13	8.221	502.9 -> 80.0	11577	28700.0000	pg/ml		0.321
M d3-N-MeFOSAA	8.489	573.2 -> 419.0	12257	40000.0000	pg/ml		0.304
System Monitoring Compounds							
S PFHxA C13	7.342	314.9 -> 269.9	34496	19651.6761	pg/ml		0.404
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 196.52%		*	
S PFDA C13	8.397	514.9 -> 469.9	18040	19497.8695	pg/ml		0.304
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 194.98%		*	
S d5-N-MeFOSAA	8.572	589.2 -> 419.0	20993	78296.0233	pg/ml		0.304
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 195.74%		*	
Target Compounds							QValue
T PFBA	2.185	213.0 -> 168.9	19796	24711.4337	pg/ml		100
T PFPeA	6.502	263.0 -> 219.0	25334	25162.2173	pg/ml		100
T PFBS	6.871	298.9 -> 80.0	8708	23246.2365	pg/ml		100
T PFHxA	7.342	312.9 -> 268.9	39386	24416.8285	pg/ml		100
T PFHpA	7.728	362.9 -> 319.0	42428	24521.1564	pg/ml		100
T 6.2 FTS	7.996	427.0 -> 406.8	1889	22183.2171	pg/ml		100
T PFOA-Total	7.997	412.9 -> 368.9	41631	25443.7059	pg/ml		100
T PFHpS	8.012	449.0 -> 79.7	5789	23970.1912	pg/ml		100
T PFHxS-Total	7.753	398.9 -> 80.0	7707	22658.4478	pg/ml		100
T PFNA	8.214	462.9 -> 418.9	20587	24757.1012	pg/ml		100
T PFOS-Total	8.213	498.9 -> 80.0	11813	23208.5674	pg/ml		100
T PFDA	8.398	513.1 -> 469.0	35652	25223.2193	pg/ml		100
T 8.2 FTS	8.405	527.0 -> 81.0	2165	23754.0340	pg/ml		100
T N-MeFOSAA	8.489	570.2 -> 419.1	8698	24866.3181	pg/ml		100
T FOSA	8.550	497.9 -> 77.9	27153	25004.4944	pg/ml		100
T PFDS	8.563	599.0 -> 80.0	7640	25342.1880	pg/ml		100
T N-EtFOSAA	8.572	584.2 -> 419.0	7242	25440.6221	pg/ml		100
T PFUnA	8.565	563.1 -> 519.0	35726	25145.2094	pg/ml		100
T PFDoA	8.739	613.1 -> 569.0	47703	24817.7427	pg/ml		100
T PFTrDA	8.932	663.1 -> 619.0	51507	24240.5352	pg/ml		100
T PFTA	9.150	713.1 -> 669.1	41362	25222.5815	pg/ml		100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

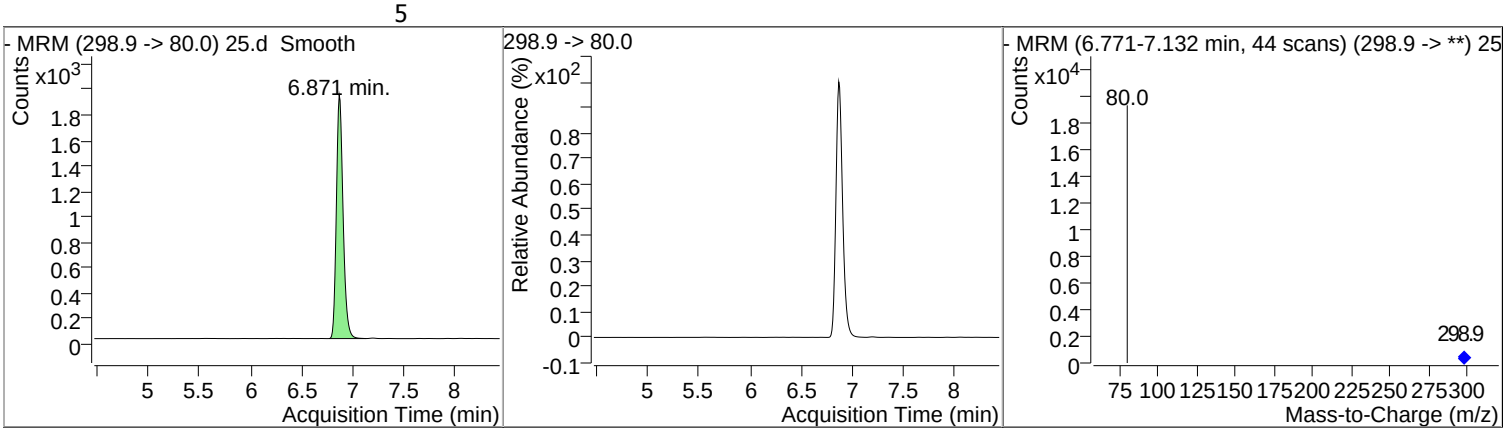
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	24711.4337	2.19	0.01	19796				



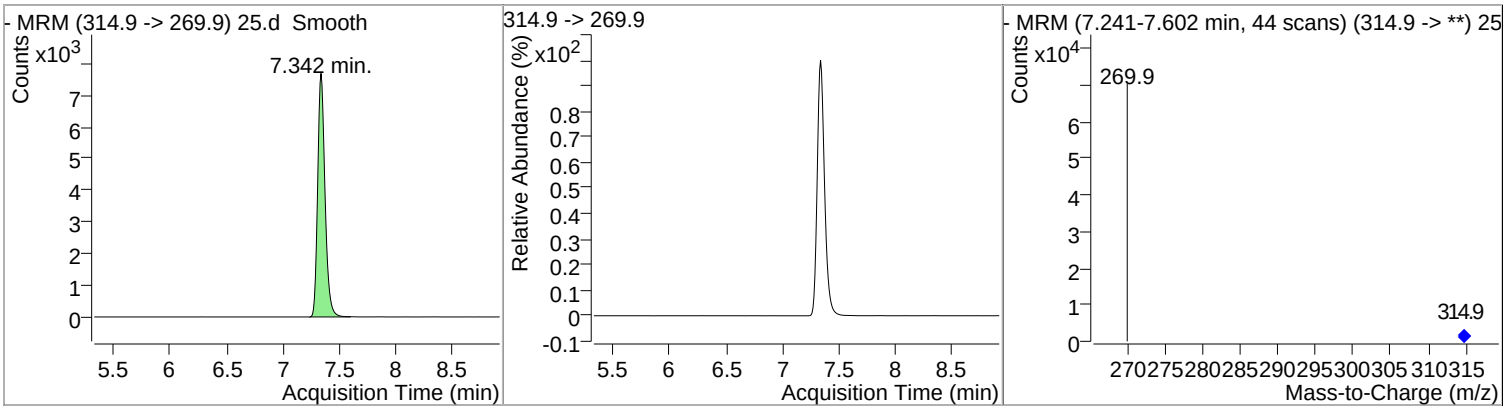
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	25162.2173	6.50	0.39	25334				



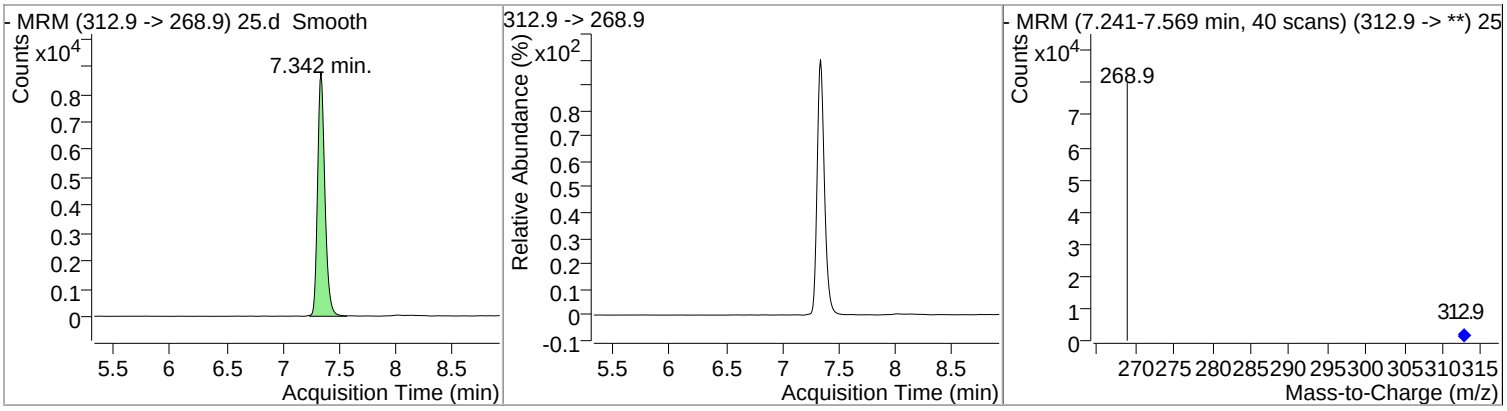
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PFBS	23246.2365	6.87	0.42	8708				



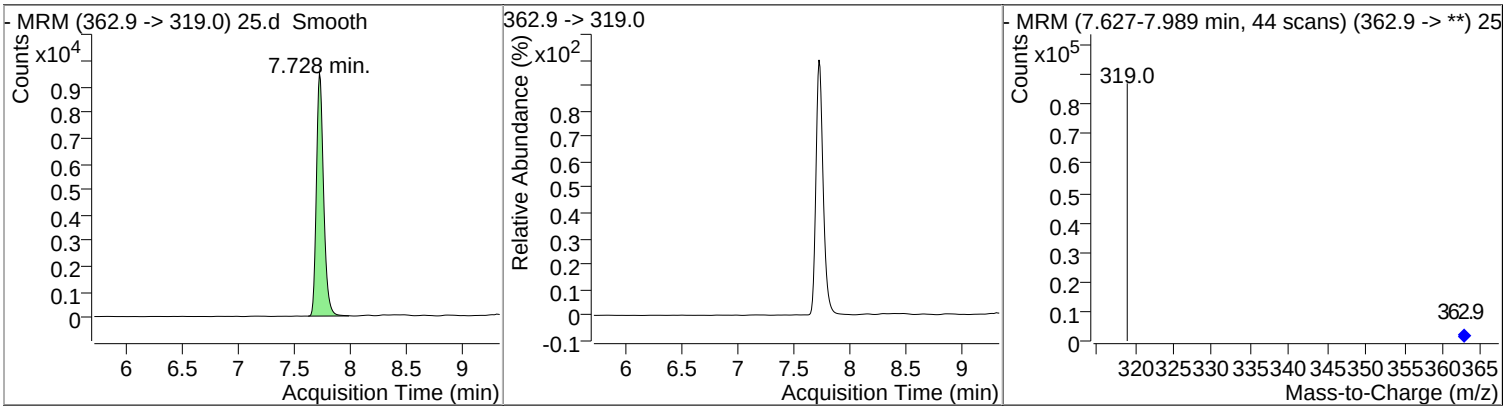
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	19651.6761	7.34	0.40	34496				



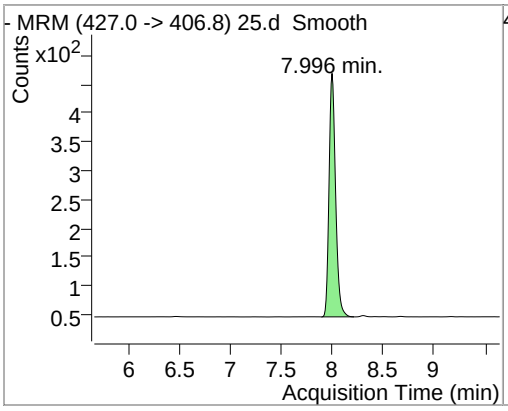
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	24416.8285	7.34	0.40	39386				

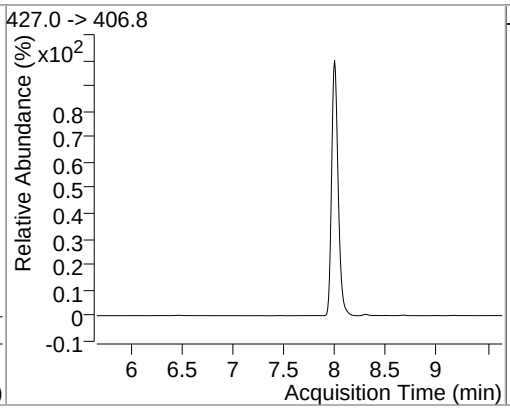


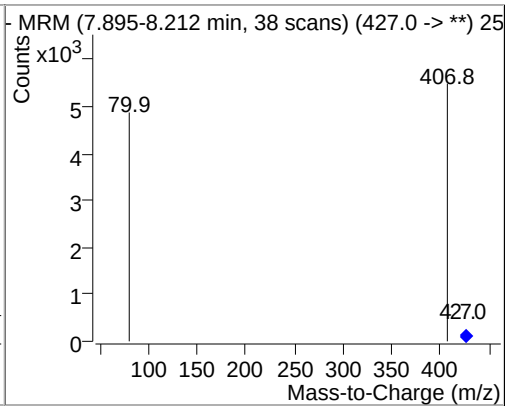
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	24521.1564	7.73	0.38	42428				



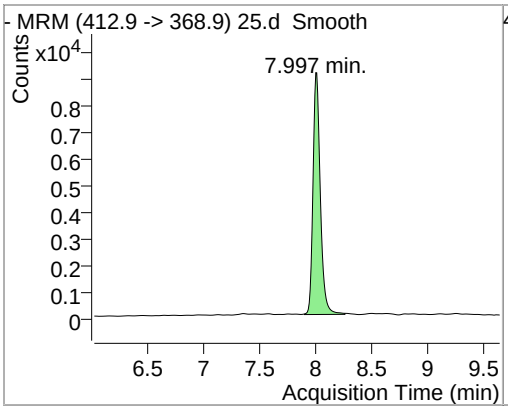
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	22183.2171	8.00	0.35	1889				

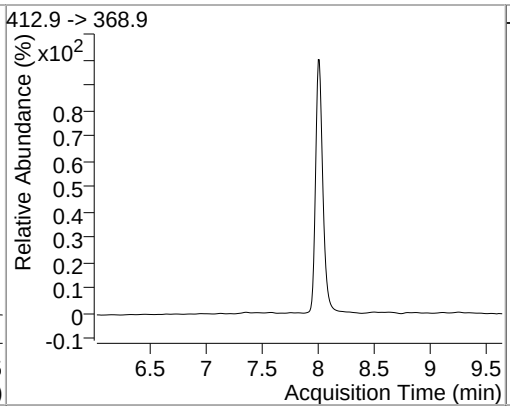


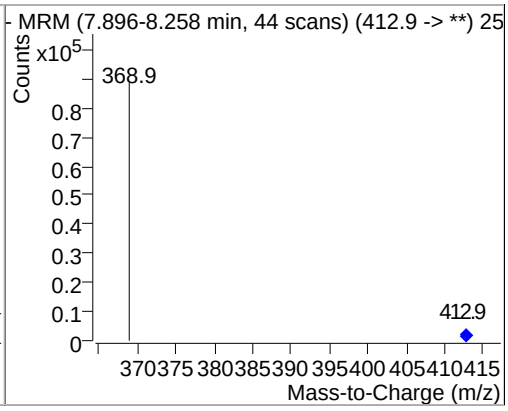




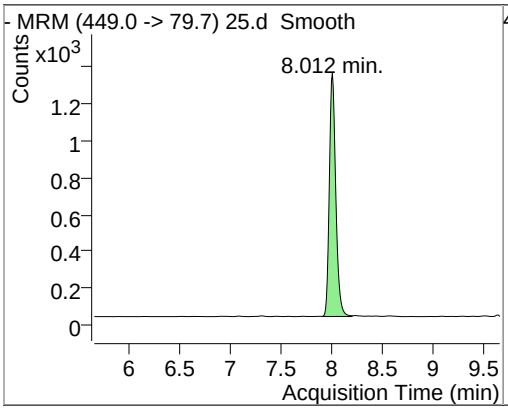
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	25443.7059	8.00	0.35	41631				

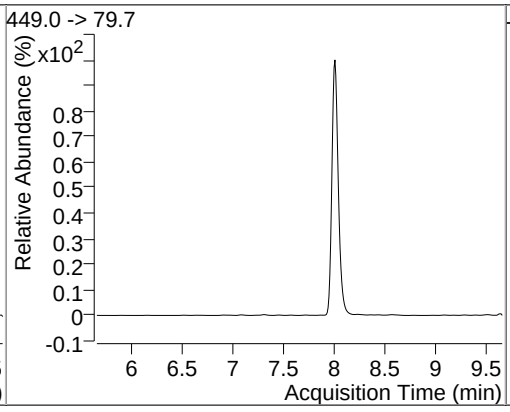


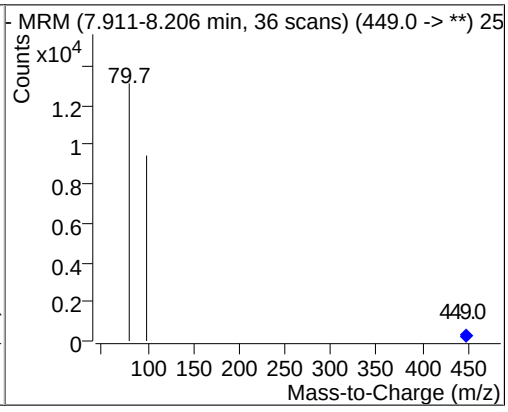




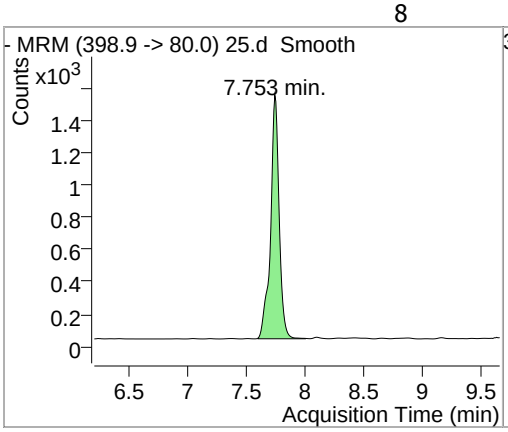
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	23970.1912	8.01	0.35	5789				

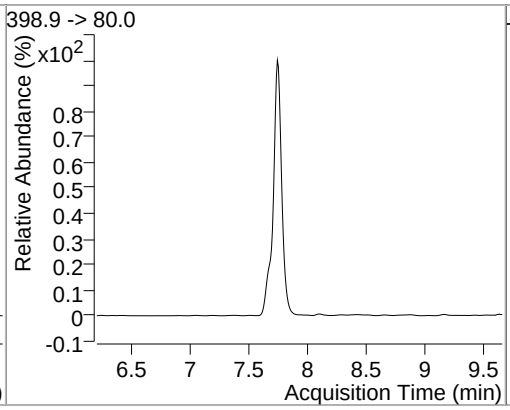


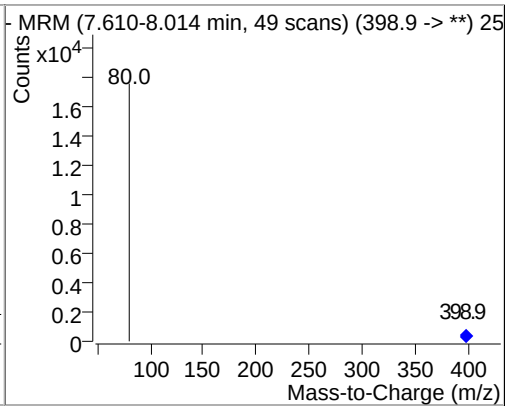




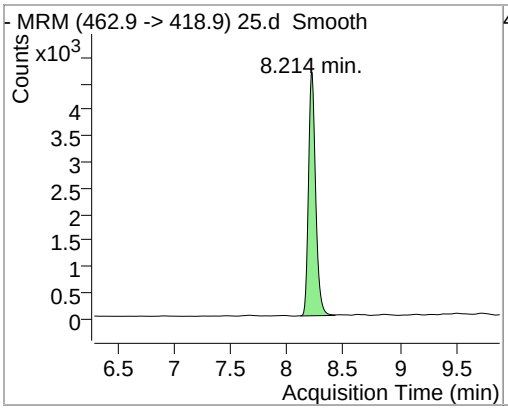
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	22658.4478	7.75	0.08	7707				

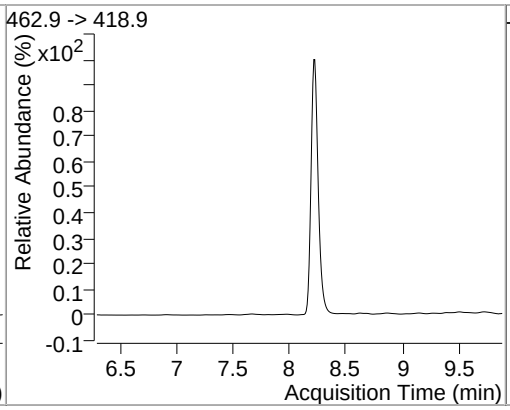


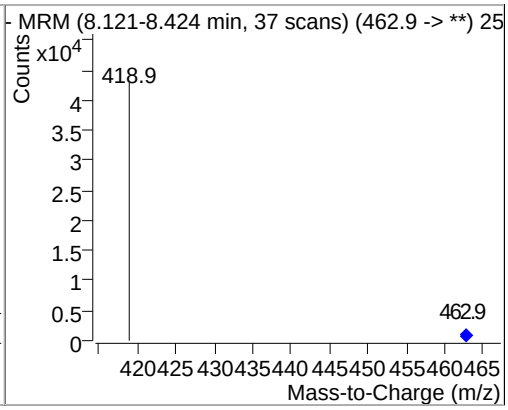




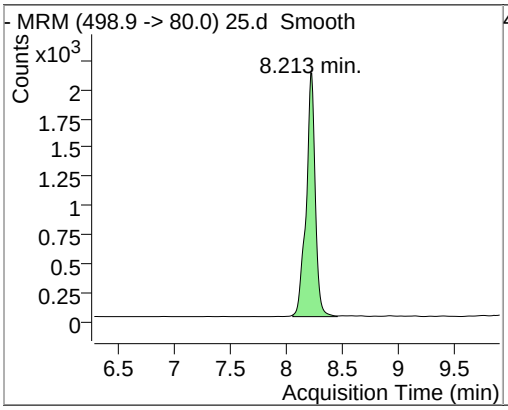
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	24757.1012	8.21	0.32	20587				

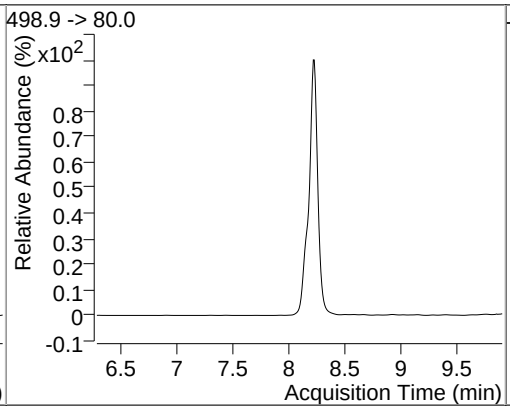


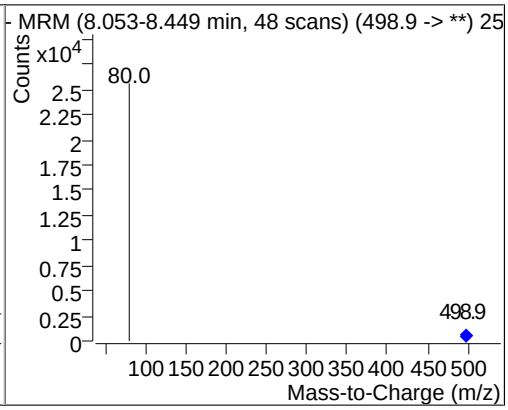




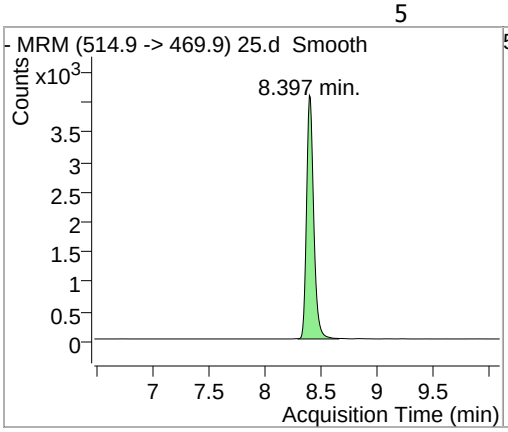
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	23208.5674	8.21	0.31	11813				

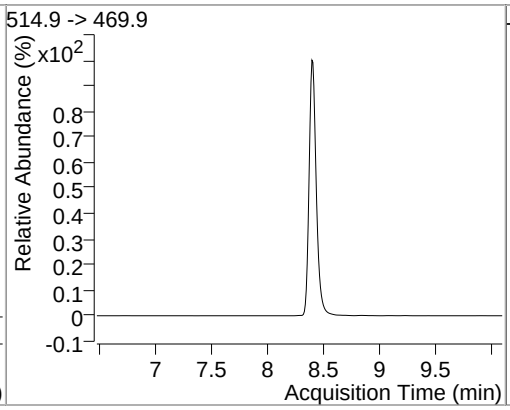


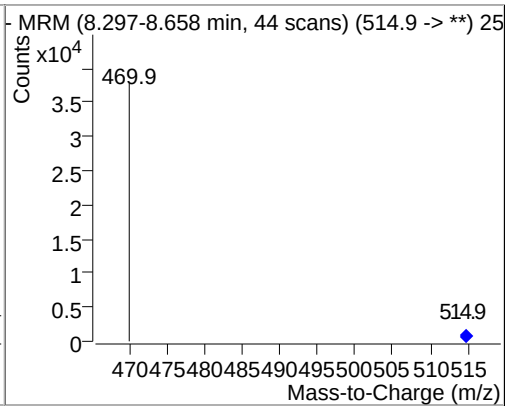




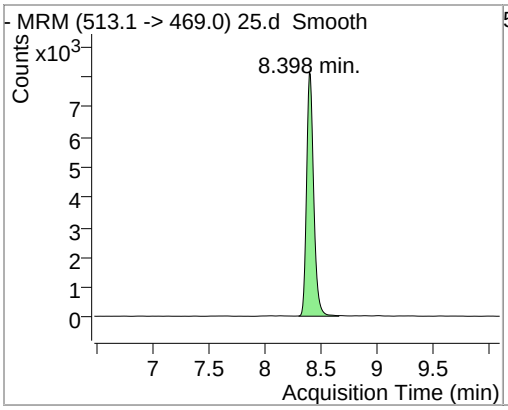
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	19497.8695	8.40	0.30	18040				

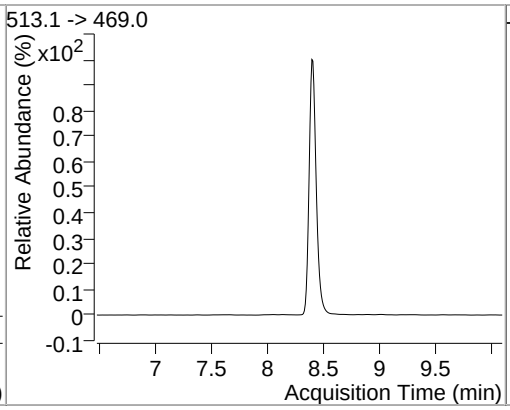


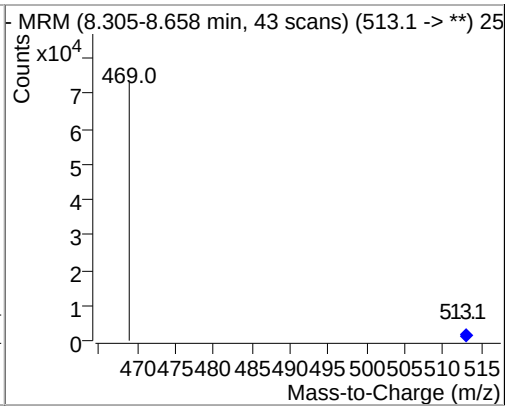




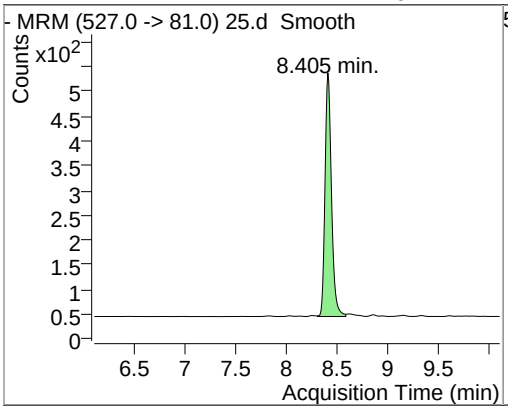
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	25223.2193	8.40	0.30	35652				

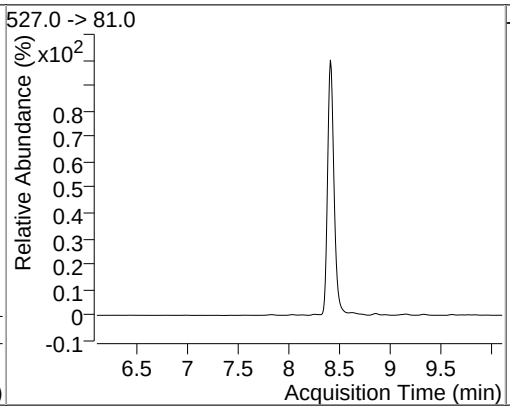


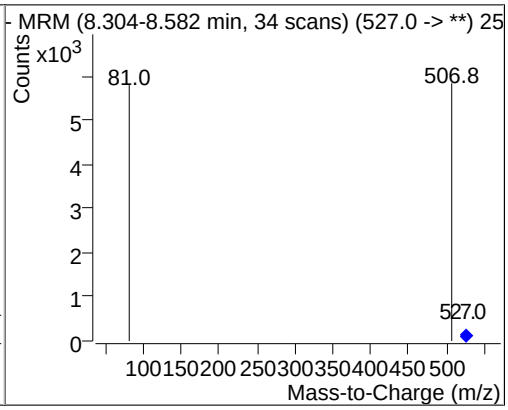




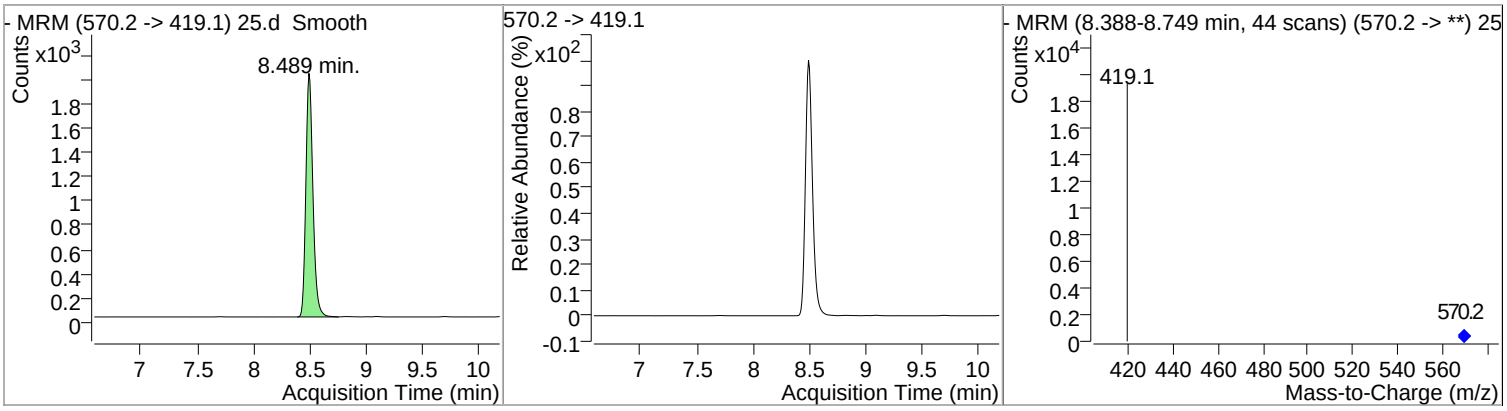
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	23754.0340	8.41	0.30	2165				



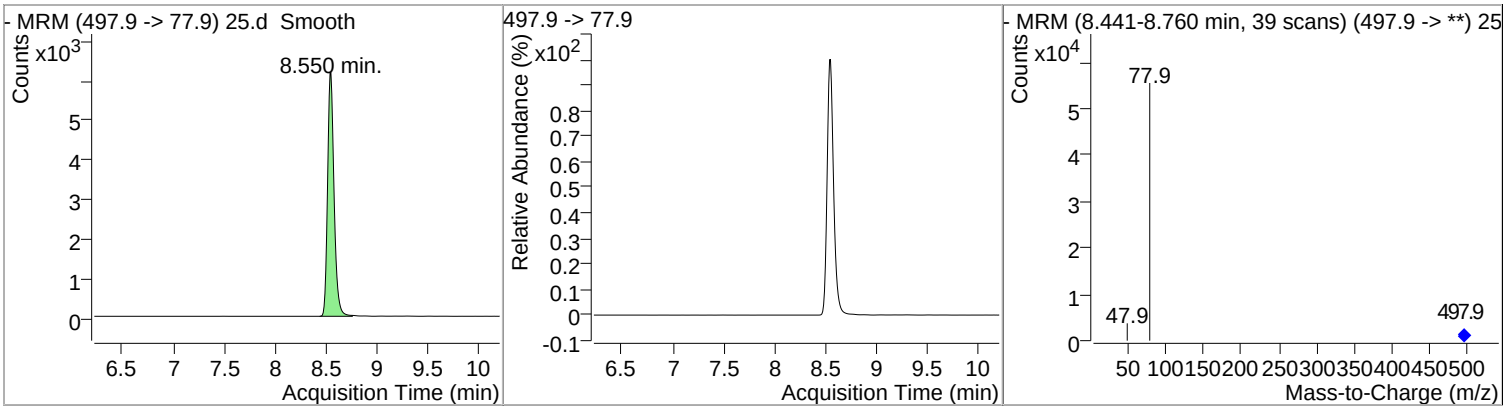




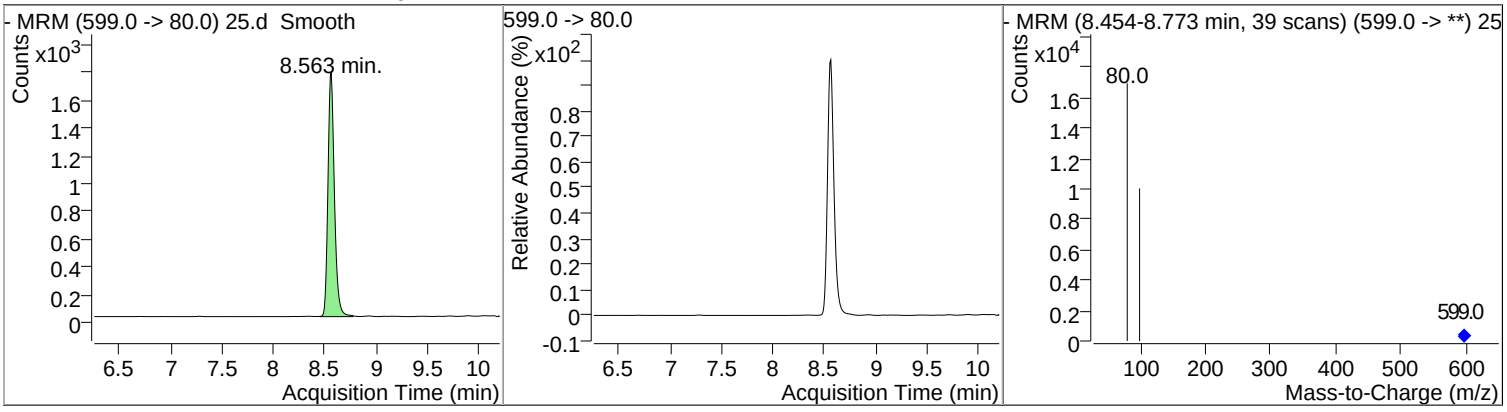
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	24866.3181	8.49	0.30	8698				



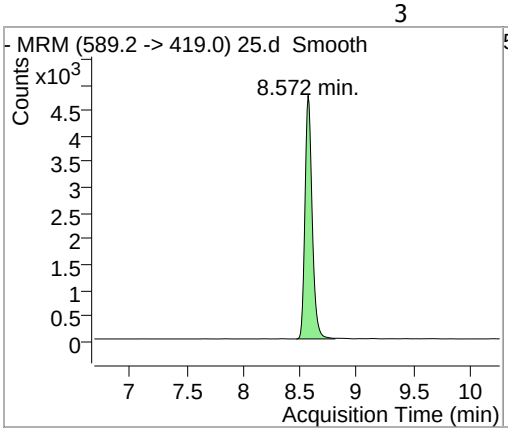
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	25004.4944	8.55	0.33	27153				

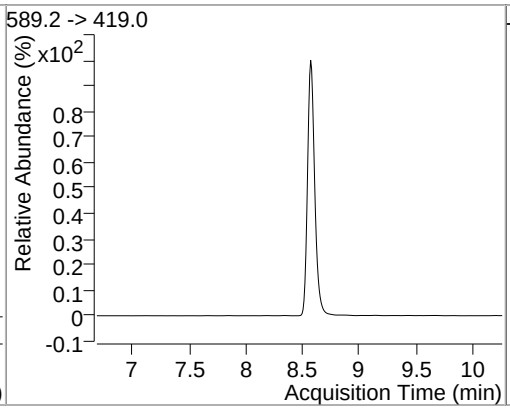


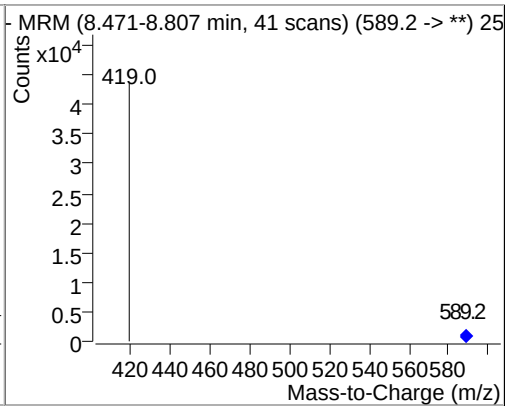
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	25342.1880	8.56	0.30	7640				



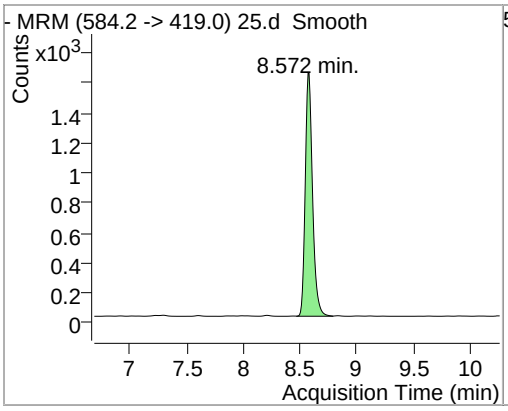
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	78296.0233	8.57	0.30	20993				

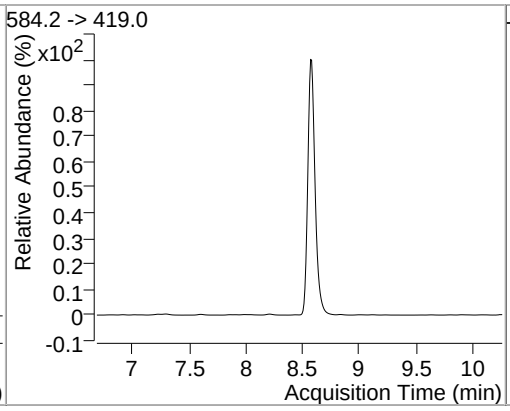


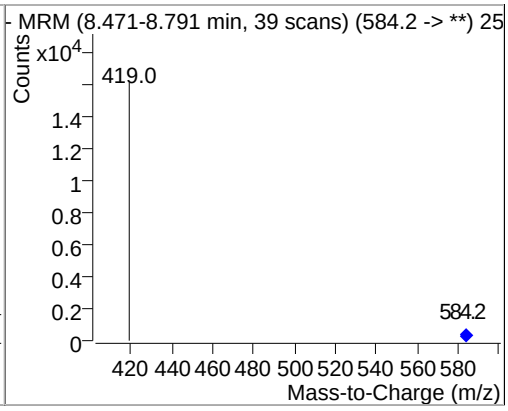




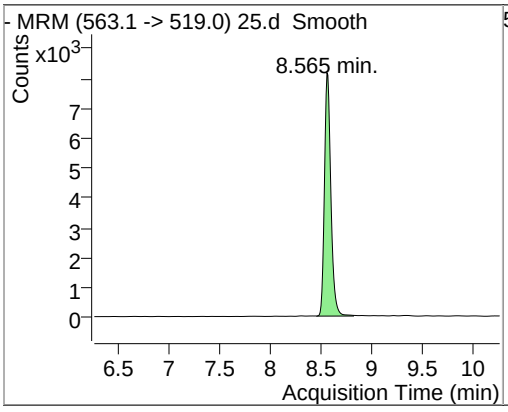
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	25440.6221	8.57	0.30	7242				

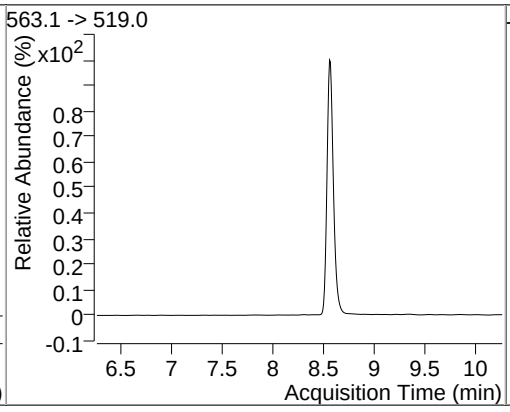


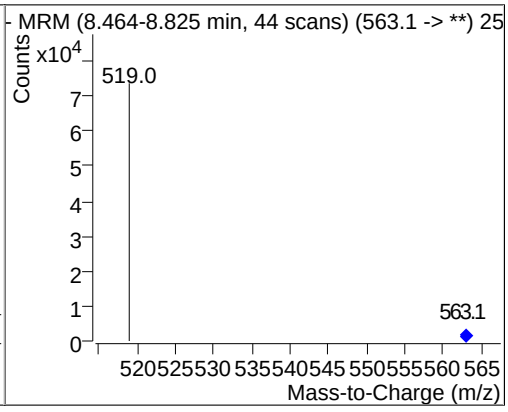




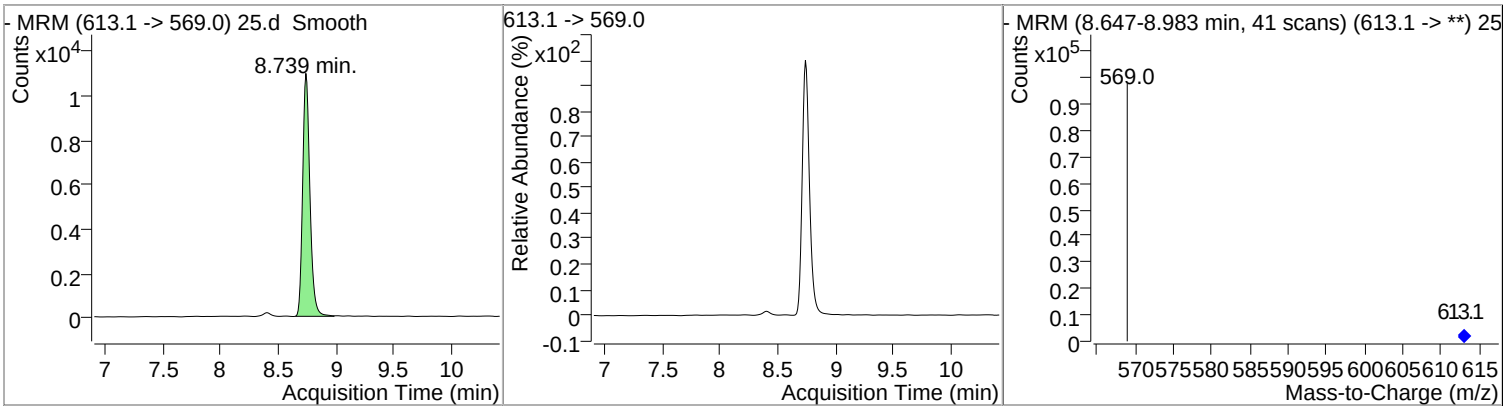
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PFUnA	25145.2094	8.56	0.30	35726				



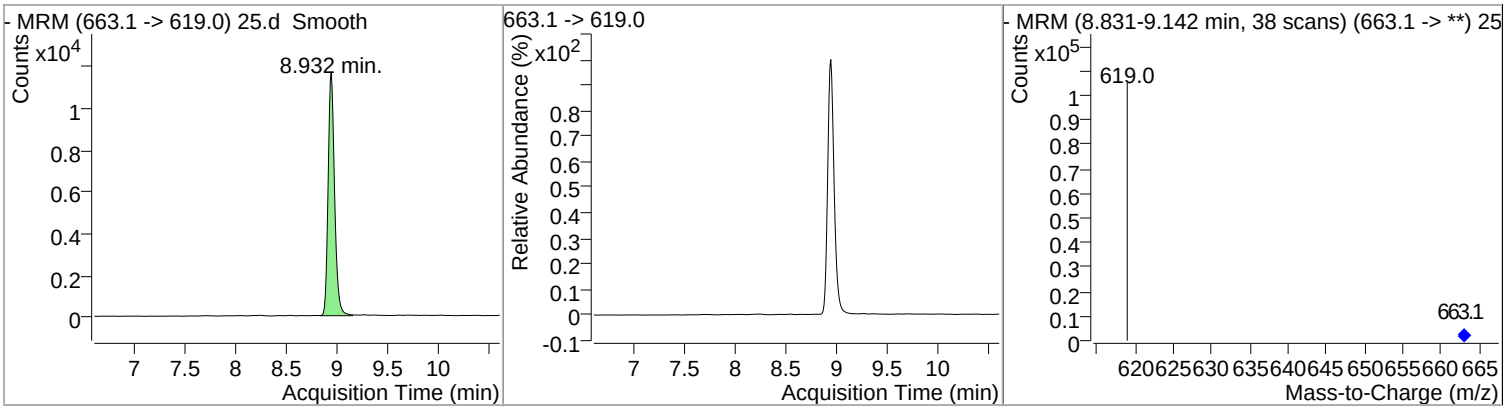




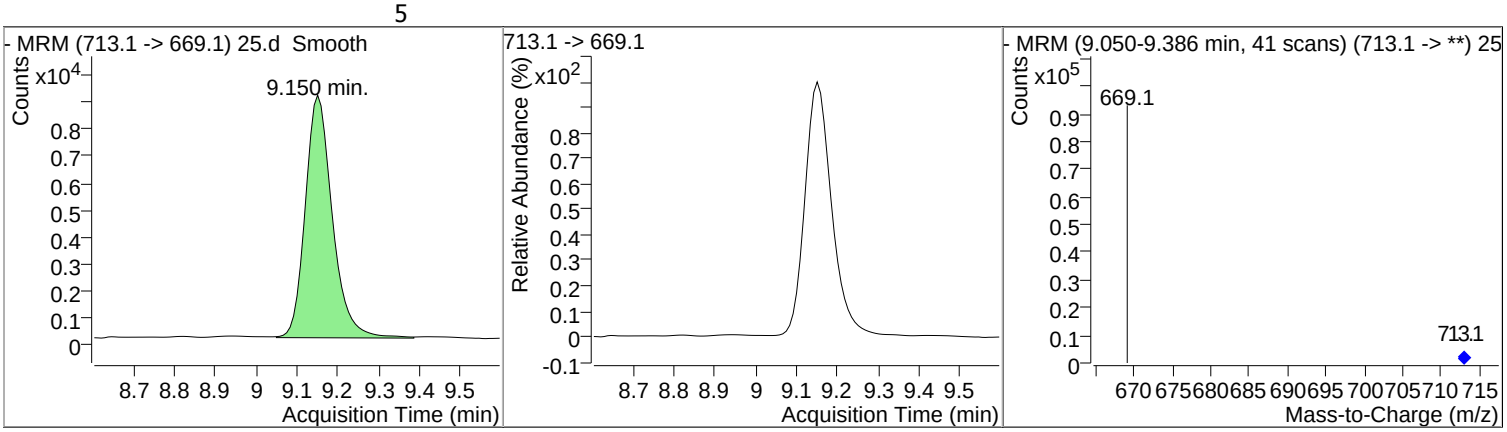
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	24817.7427	8.74	0.31	47703				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	24240.5352	8.93	0.34	51507				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	25222.5815	9.15	0.05	41362				

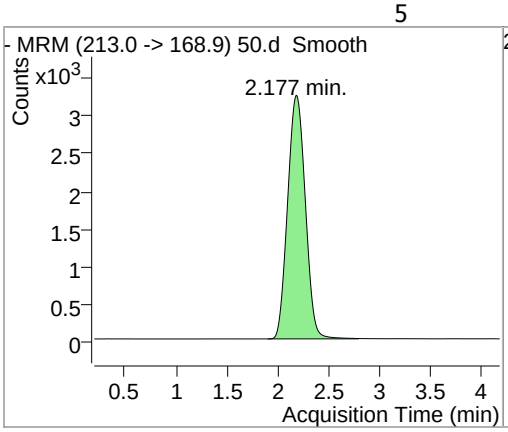


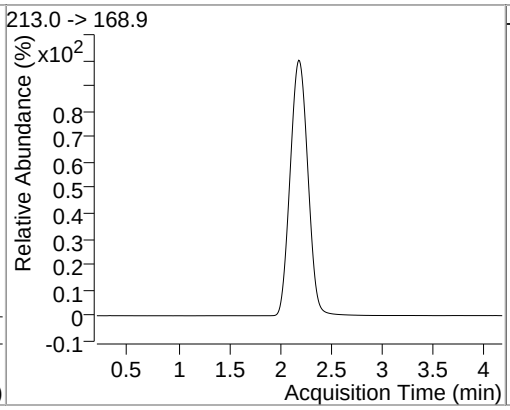
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Acq. Method	21List042718.m	Acq. Date-Time	12/20/2018 10:44:25 PM
Sample Name	50	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

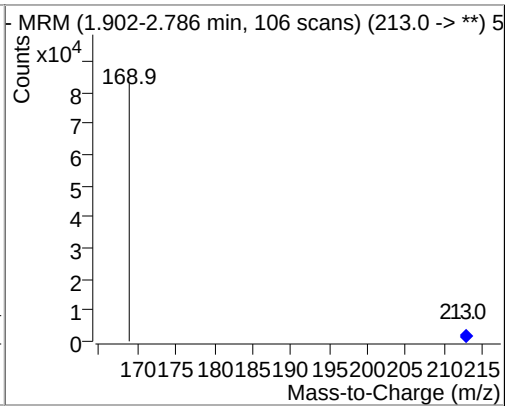
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	8.005	416.9 -> 371.9	13892	10000.0000	pg/ml		0.354
M PFOS C13	8.221	502.9 -> 80.0	11497	28700.0000	pg/ml		0.321
M d3-N-MeFOSAA	8.497	573.2 -> 419.0	11931	40000.0000	pg/ml		0.312
System Monitoring Compounds							
S PFHxA C13	7.350	314.9 -> 269.9	43527	25488.5598	pg/ml		0.413
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 254.89%		*	
S PFDA C13	8.406	514.9 -> 469.9	22574	25078.8607	pg/ml		0.313
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 250.79%		*	
S d5-N-MeFOSAA	8.580	589.2 -> 419.0	25913	99290.0940	pg/ml		0.313
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 248.23%		*	
Target Compounds							QValue
T PFBA	2.177	213.0 -> 168.9	38855	49857.5035	pg/ml		100
T PFPeA	6.510	263.0 -> 219.0	47993	48996.9078	pg/ml		100
T PFBS	6.880	298.9 -> 80.0	16005	43024.9202	pg/ml		100
T PFHxA	7.350	312.9 -> 268.9	78514	50031.7338	pg/ml		100
T PFHpA	7.737	362.9 -> 319.0	84676	50304.0995	pg/ml		100
T 6.2 FTS	7.996	427.0 -> 406.8	4067	48086.9640	pg/ml		100
T PFOA-Total	8.005	412.9 -> 368.9	78032	49021.4564	pg/ml		100
T PFHpS	8.012	449.0 -> 79.7	11535	48095.5619	pg/ml		100
T PFHxS-Total	7.762	398.9 -> 80.0	15365	45485.2302	pg/ml		100
T PFNA	8.223	462.9 -> 418.9	41520	51323.7026	pg/ml		100
T PFOS-Total	8.222	498.9 -> 80.0	22801	45106.0077	pg/ml		100
T PFDA	8.406	513.1 -> 469.0	67284	48929.9883	pg/ml		100
T 8.2 FTS	8.414	527.0 -> 81.0	4149	45829.6252	pg/ml		100
T N-MeFOSAA	8.497	570.2 -> 419.1	17101	50229.2476	pg/ml		100
T FOSA	8.550	497.9 -> 77.9	51782	48988.3206	pg/ml		100
T PFDS	8.563	599.0 -> 80.0	13707	45784.2022	pg/ml		100
T N-EtFOSAA	8.581	584.2 -> 419.0	13187	47588.2551	pg/ml		100
T PFUnA	8.573	563.1 -> 519.0	67783	49039.5016	pg/ml		100
T PFDoA	8.748	613.1 -> 569.0	94844	50719.8152	pg/ml		100
T PFTrDA	8.932	663.1 -> 619.0	104870	50730.9007	pg/ml		100
T PFTA	9.150	713.1 -> 669.1	79405	49771.7315	pg/ml		100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

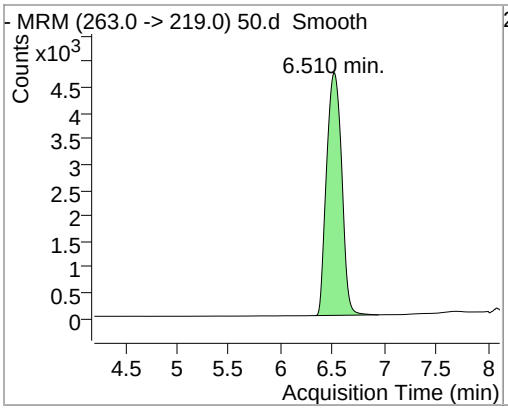
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	49857.5035	2.18	0.01	38855				

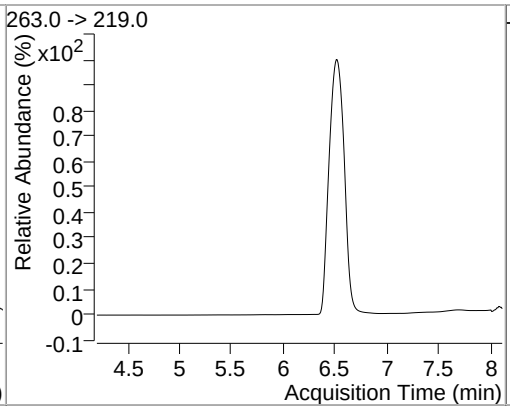


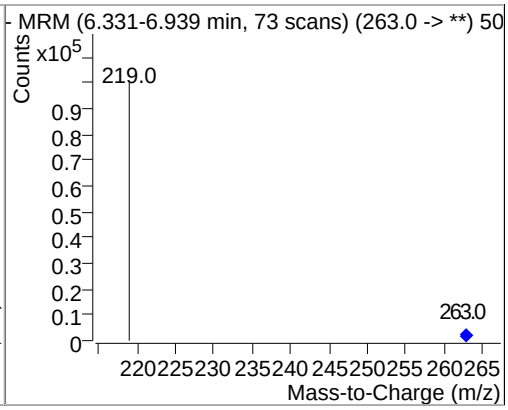




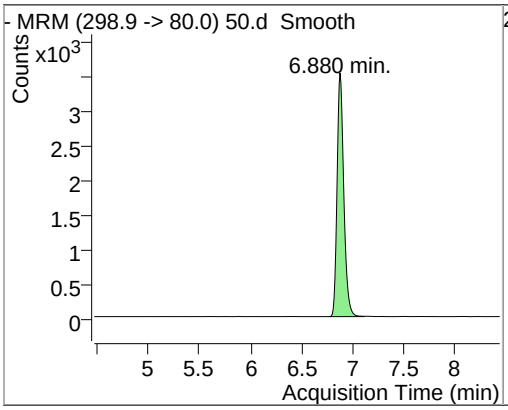
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	48996.9078	6.51	0.40	47993				

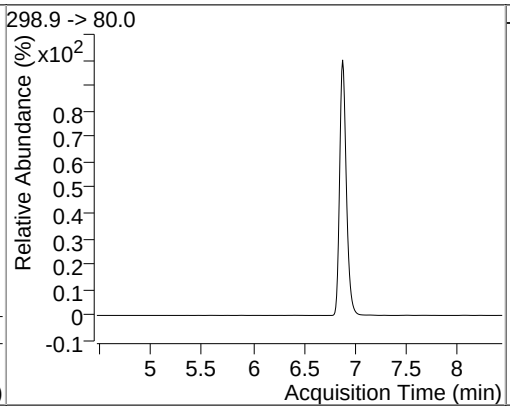


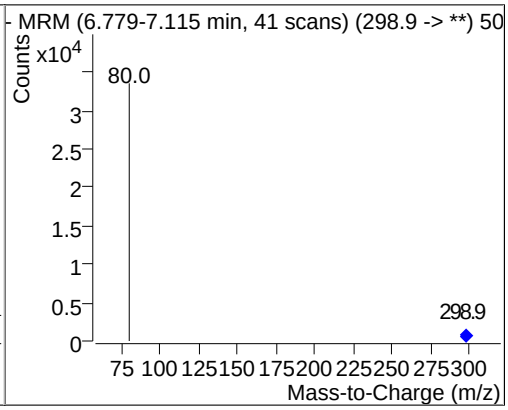




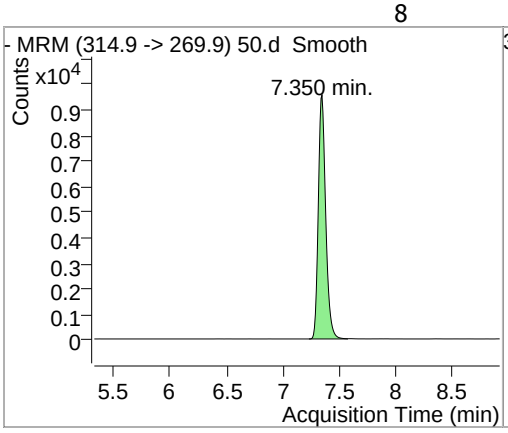
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	43024.9202	6.88	0.43	16005				

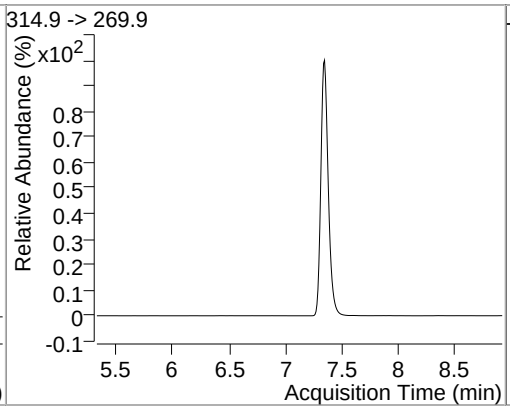


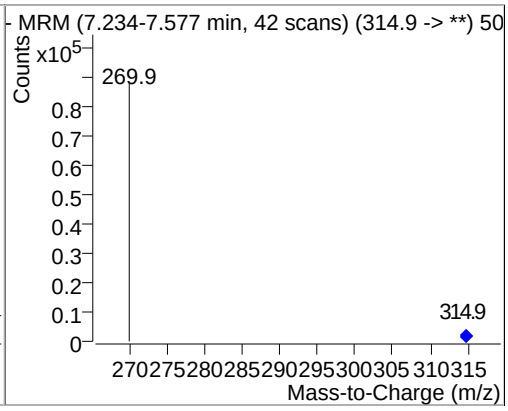




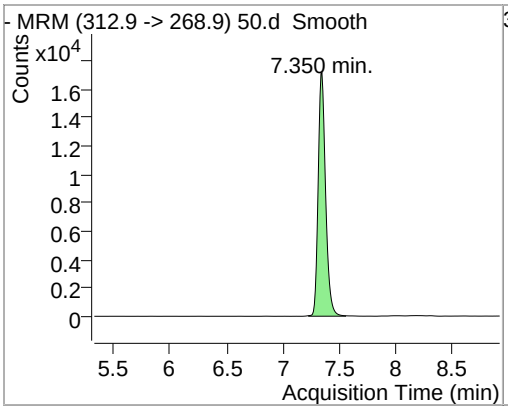
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	25488.5598	7.35	0.41	43527				

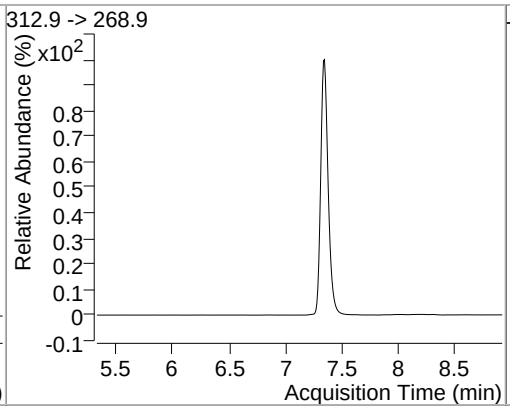


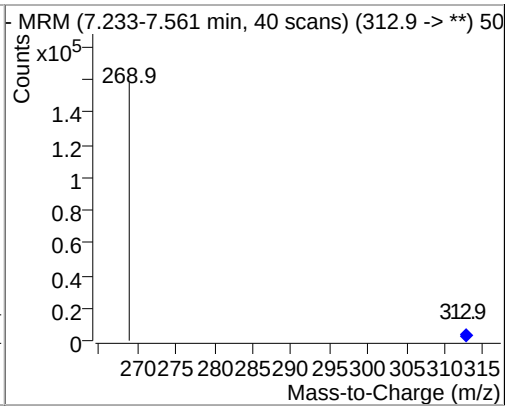




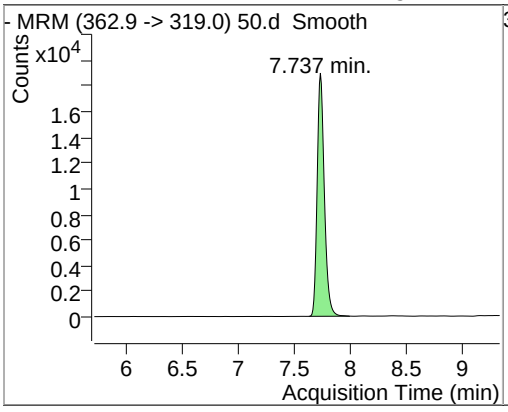
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	50031.7338	7.35	0.41	78514				

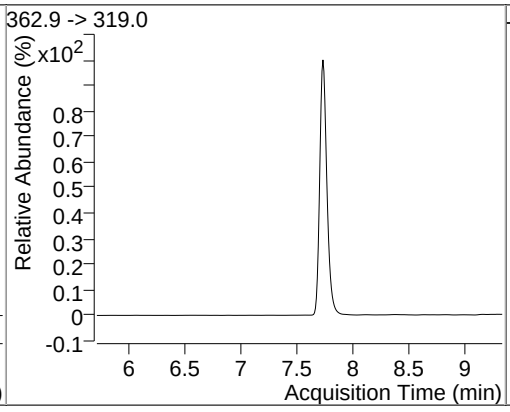


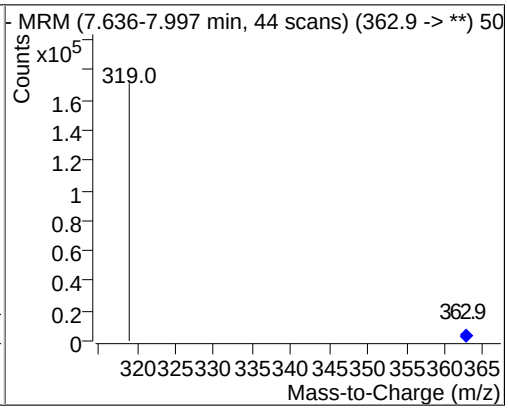




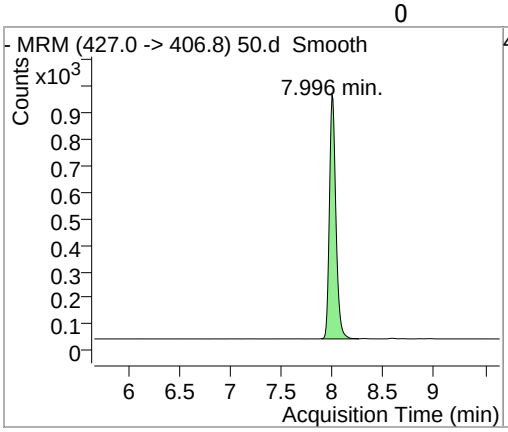
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	50304.0995	7.74	0.39	84676				

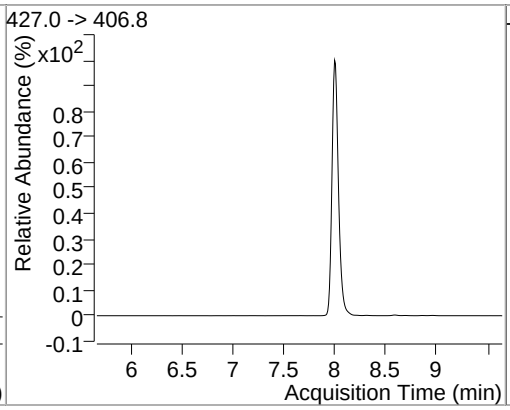


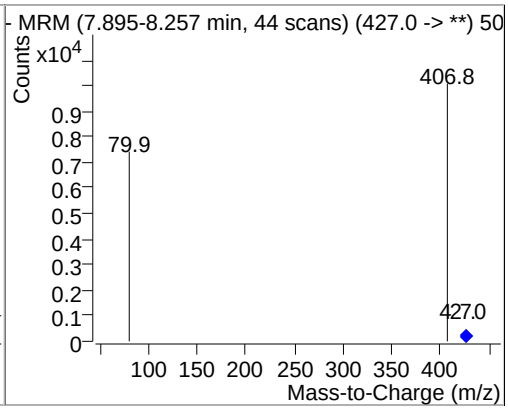




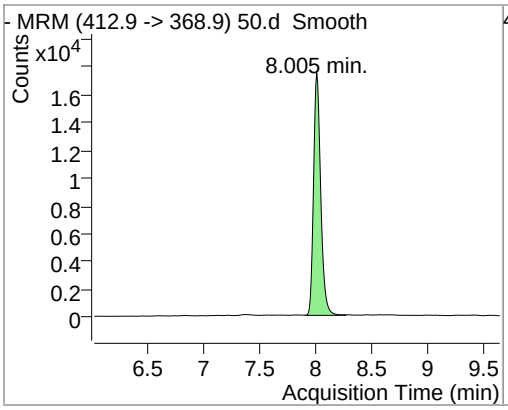
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	48086.9640	8.00	0.35	4067				

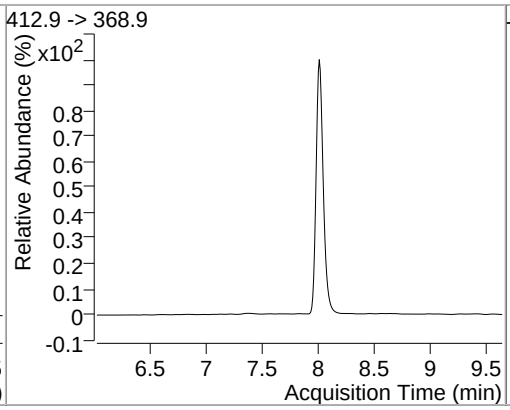


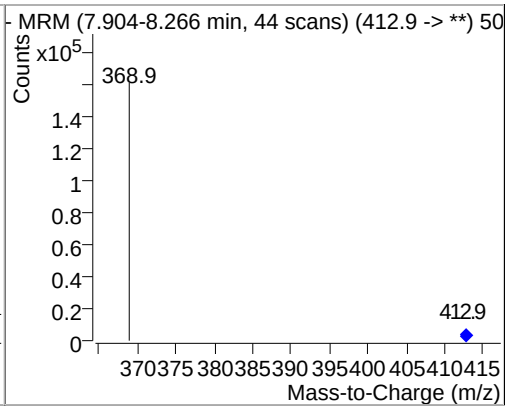




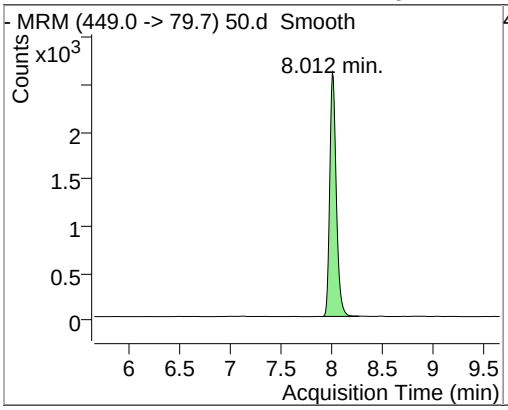
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	49021.4564	8.01	0.35	78032				

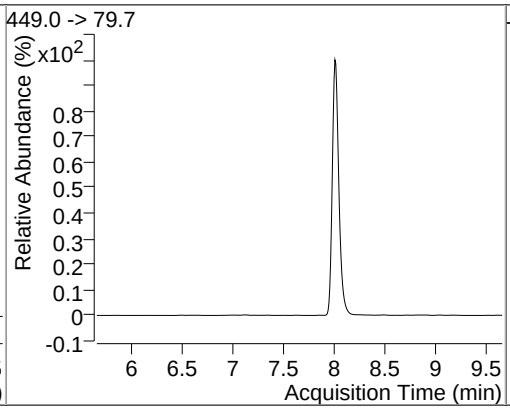


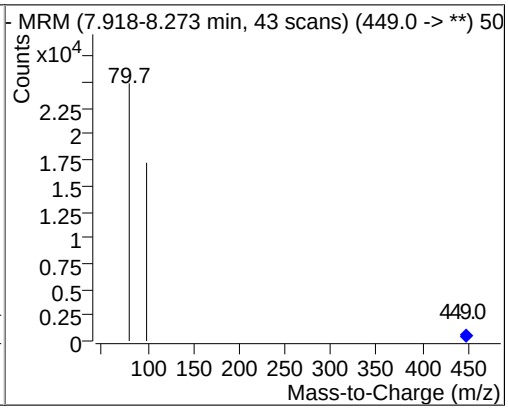




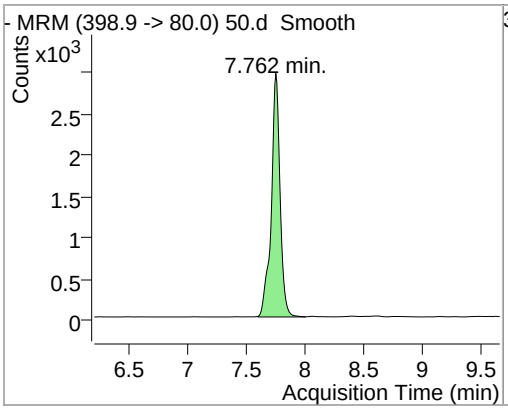
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	48095.5619	8.01	0.35	11535				

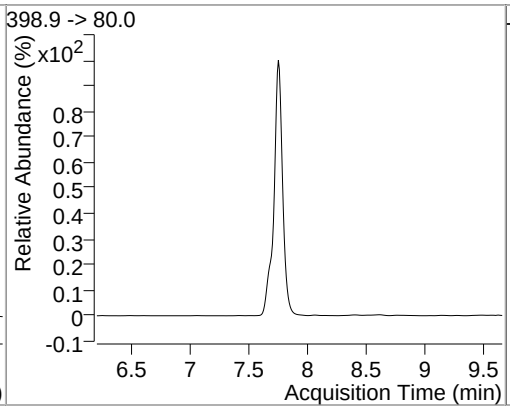


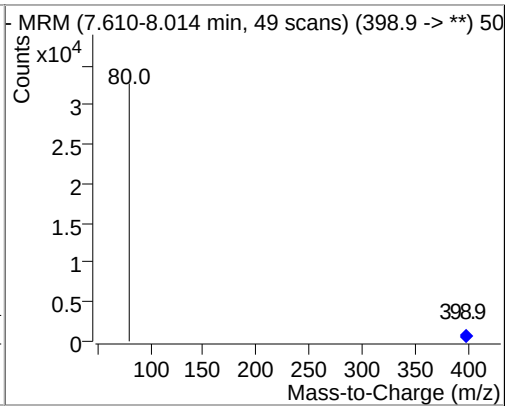




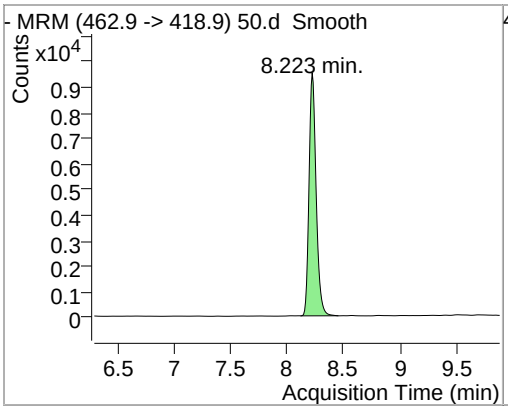
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	45485.2302	7.76	0.08	15365				

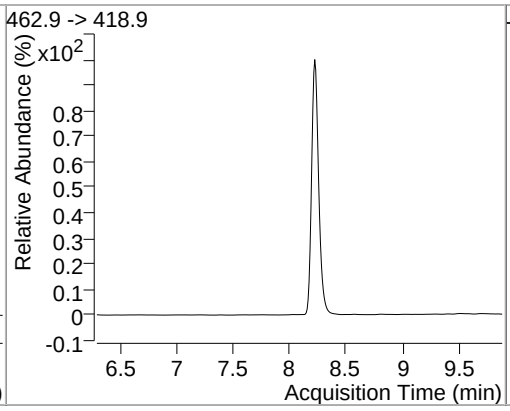


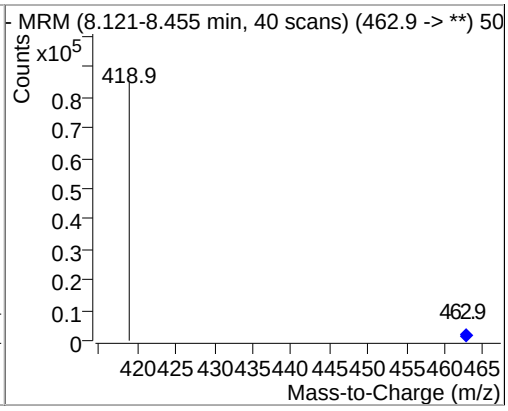




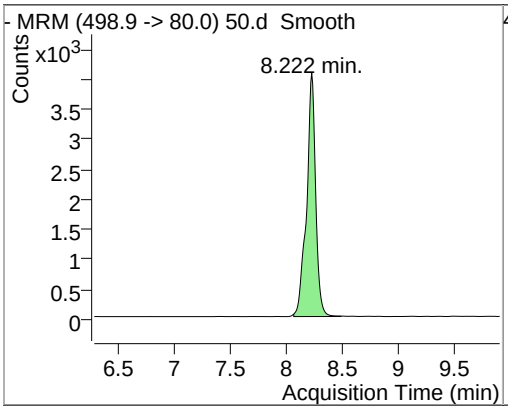
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	51323.7026	8.22	0.33	41520				

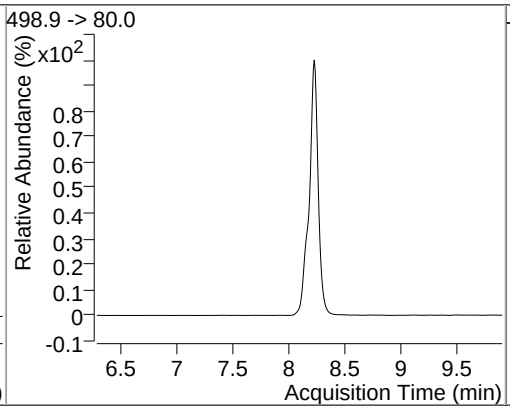


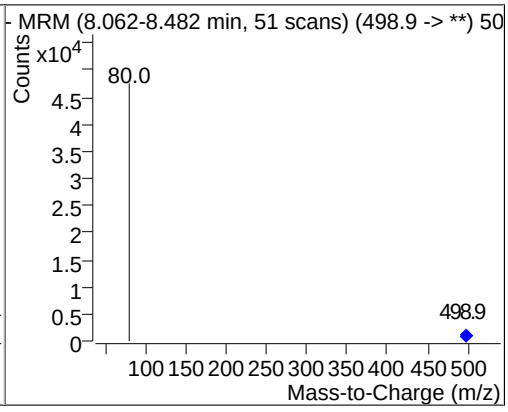




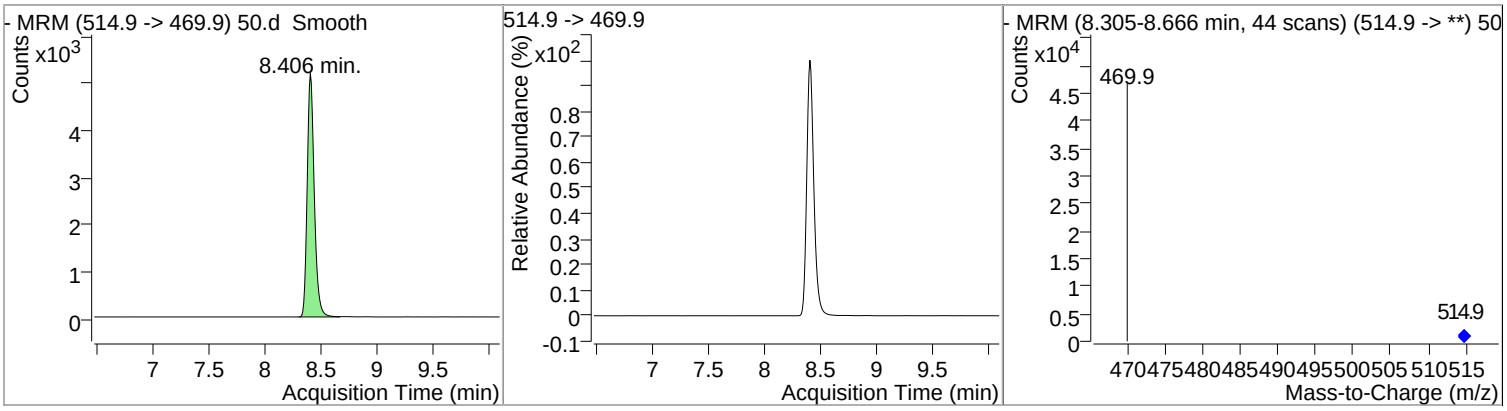
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	45106.0077	8.22	0.32	22801				



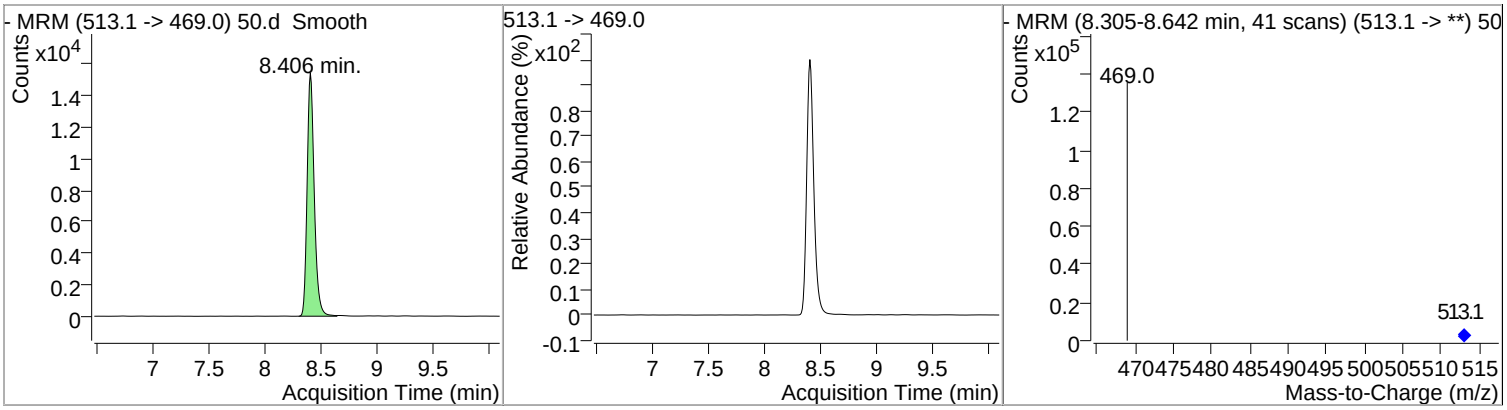




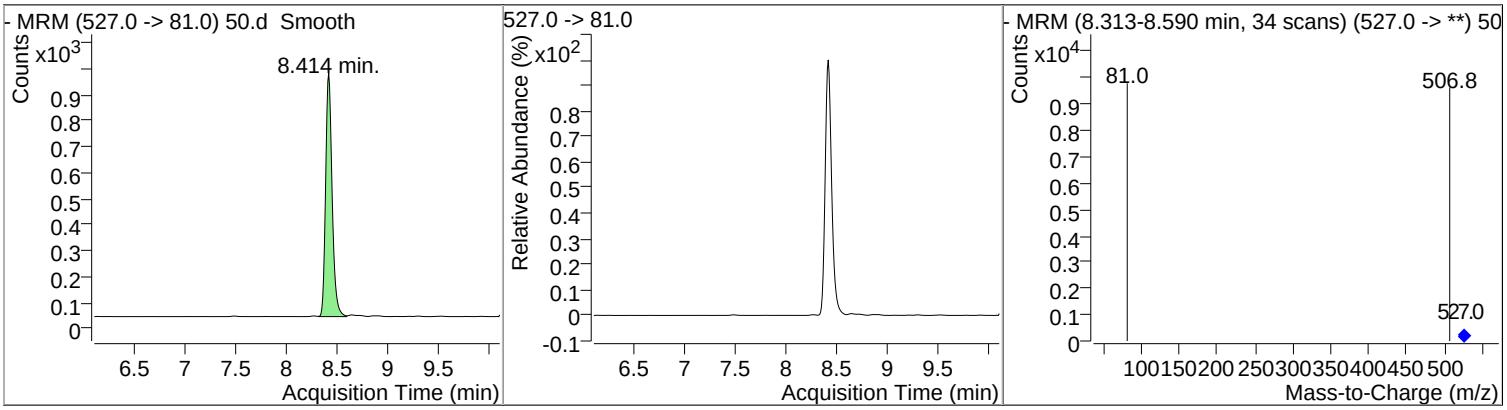
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PFDA C13	25078.8607	8.41	0.31	22574				



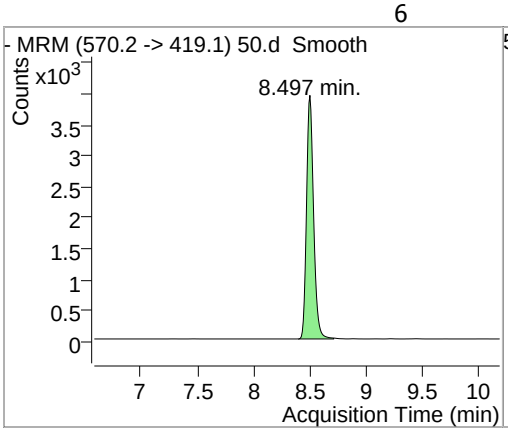
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PFDA	48929.9883	8.41	0.31	67284				

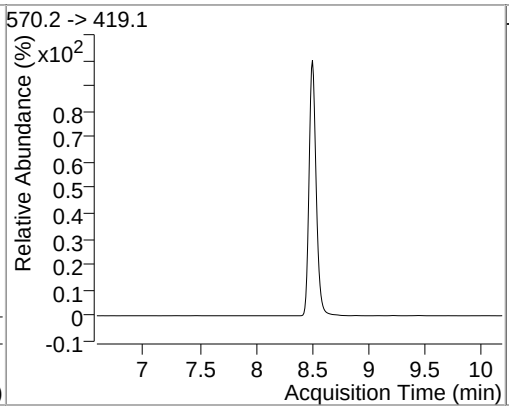


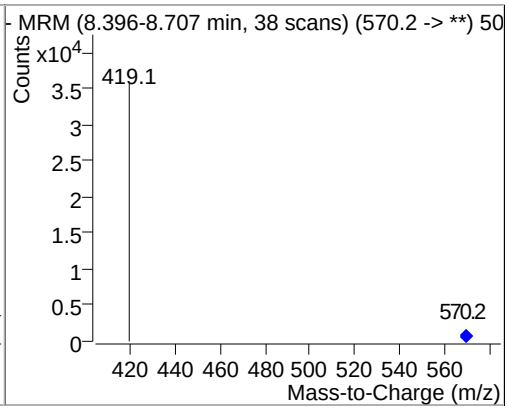
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	45829.6252	8.41	0.31	4149				



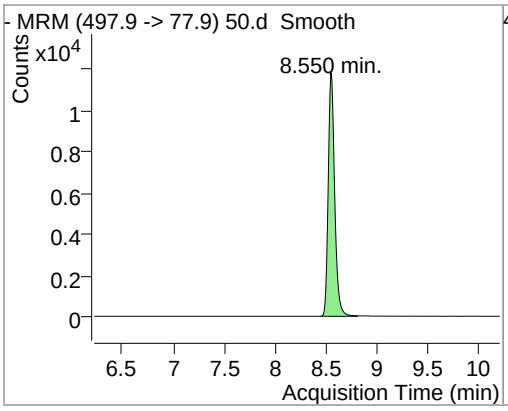
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	50229.2476	8.50	0.31	17101				

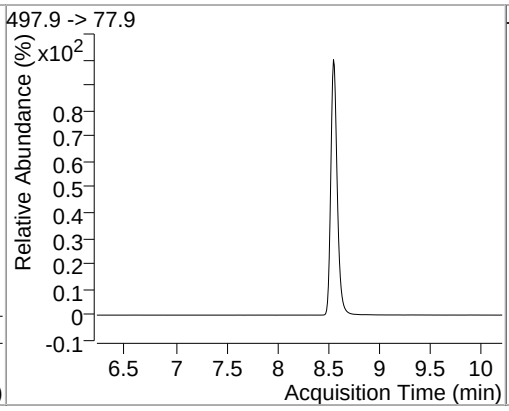


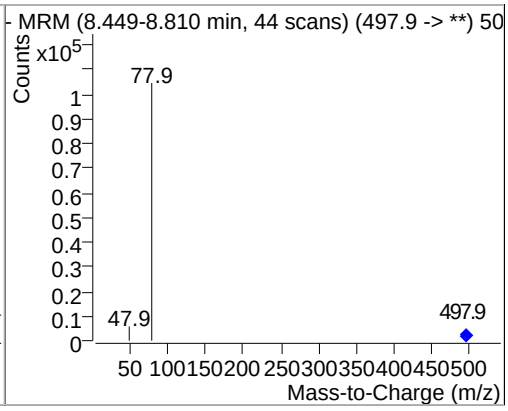




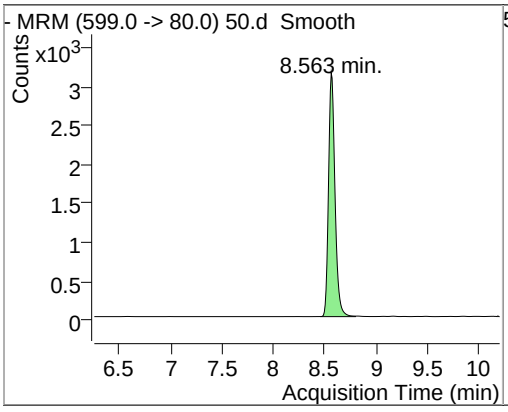
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	48988.3206	8.55	0.33	51782				

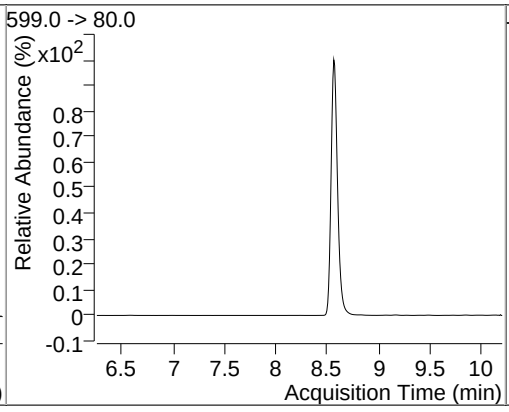


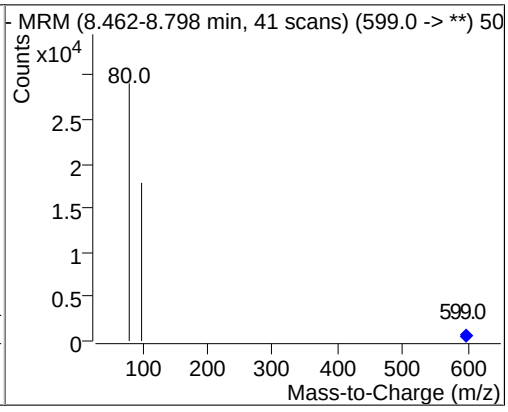




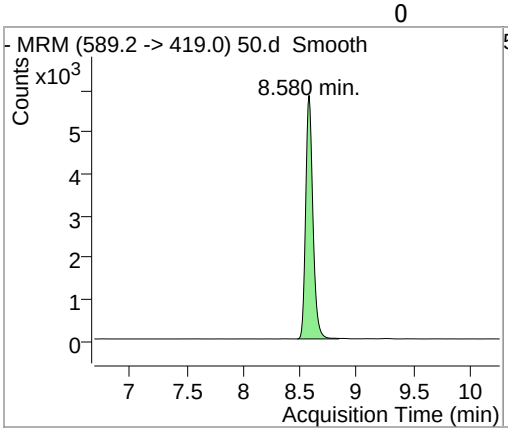
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	45784.2022	8.56	0.30	13707				

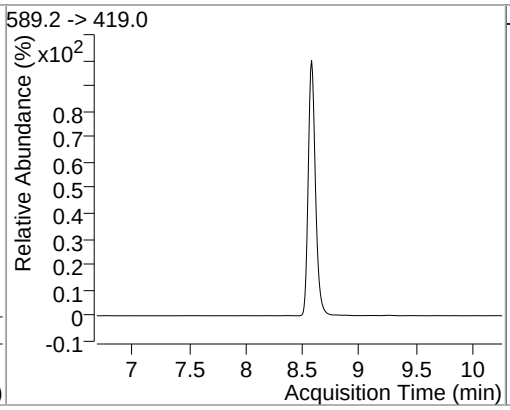


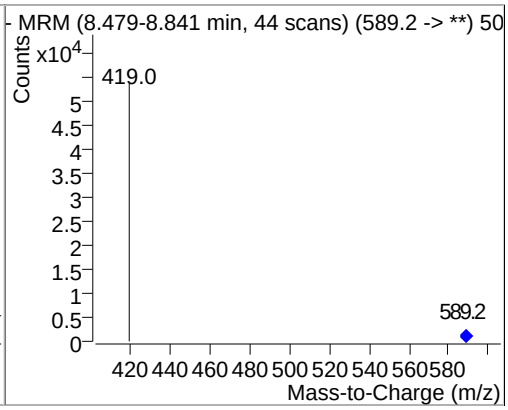




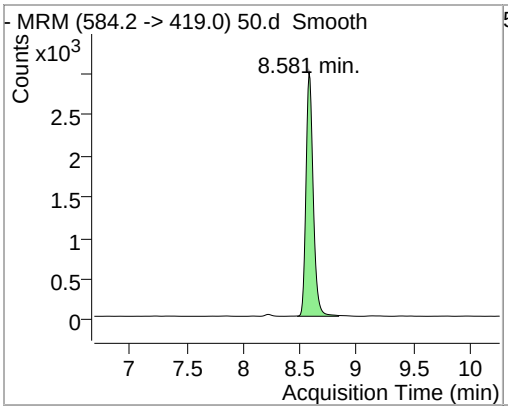
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	99290.0940	8.58	0.31	25913				

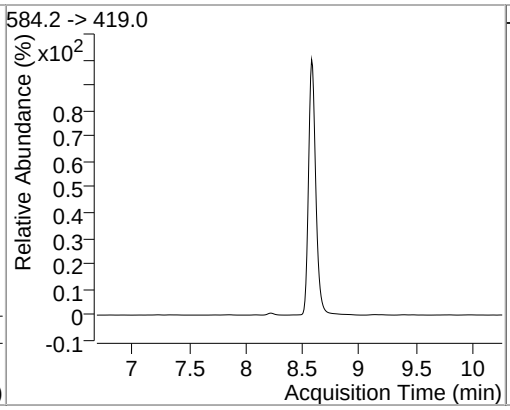


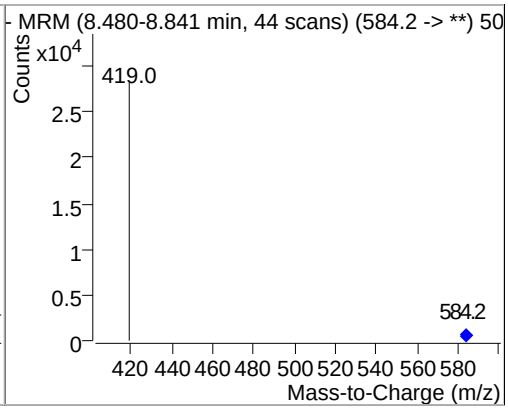




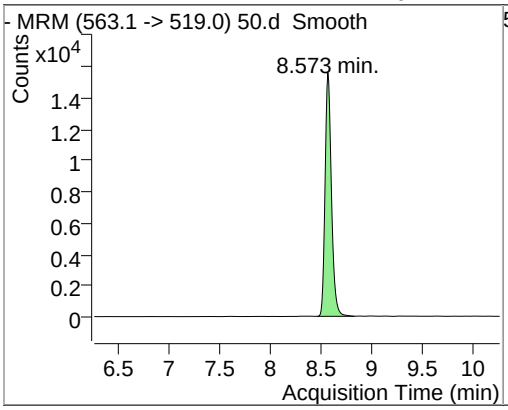
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	47588.2551	8.58	0.31	13187				

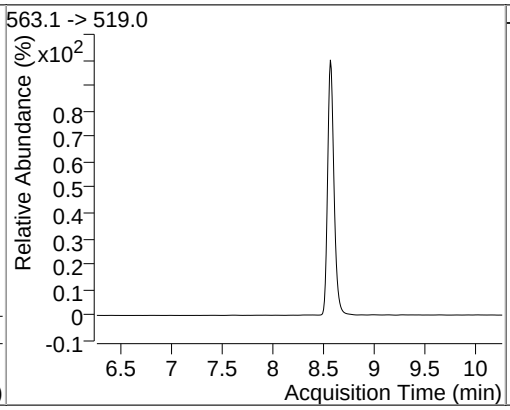


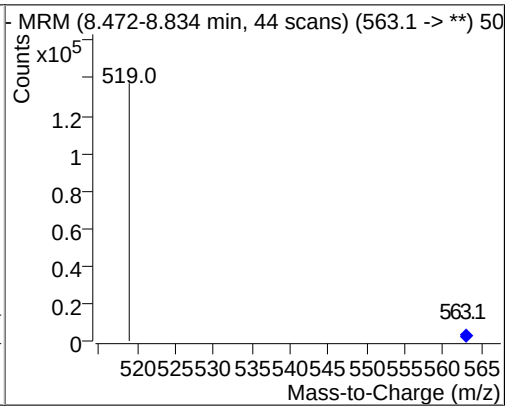




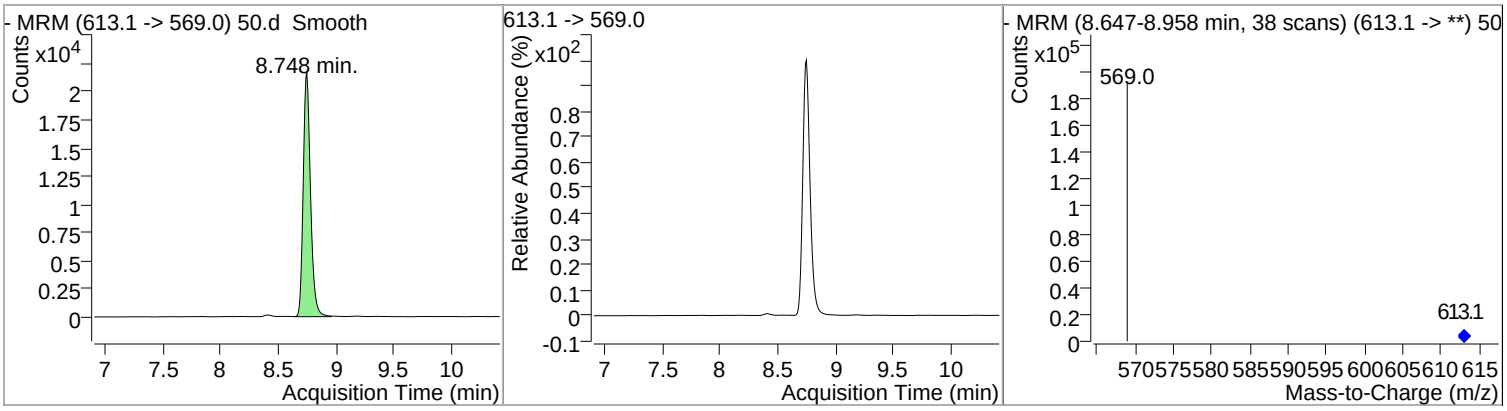
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	49039.5016	8.57	0.30	67783				



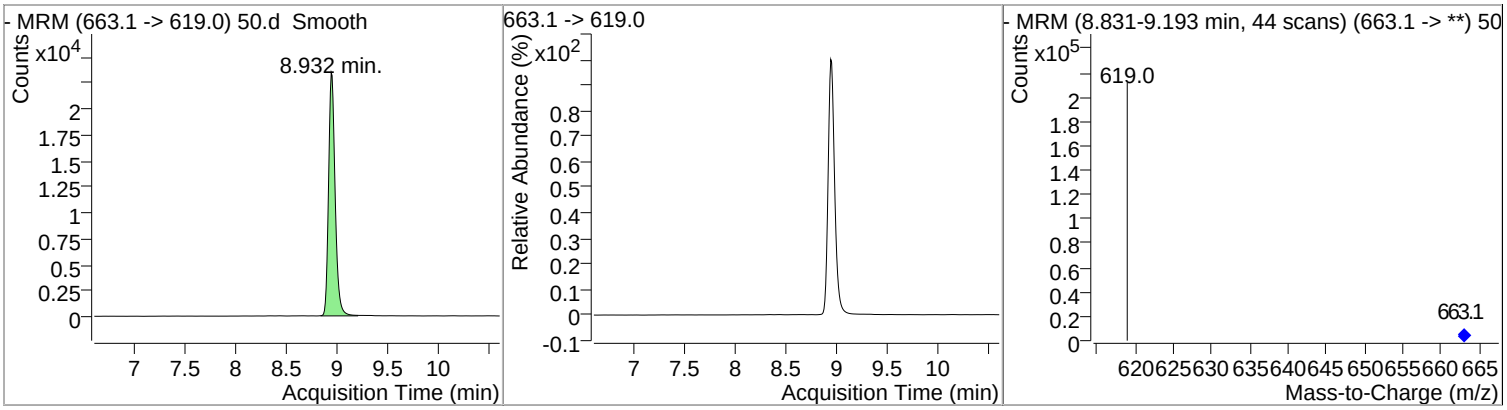




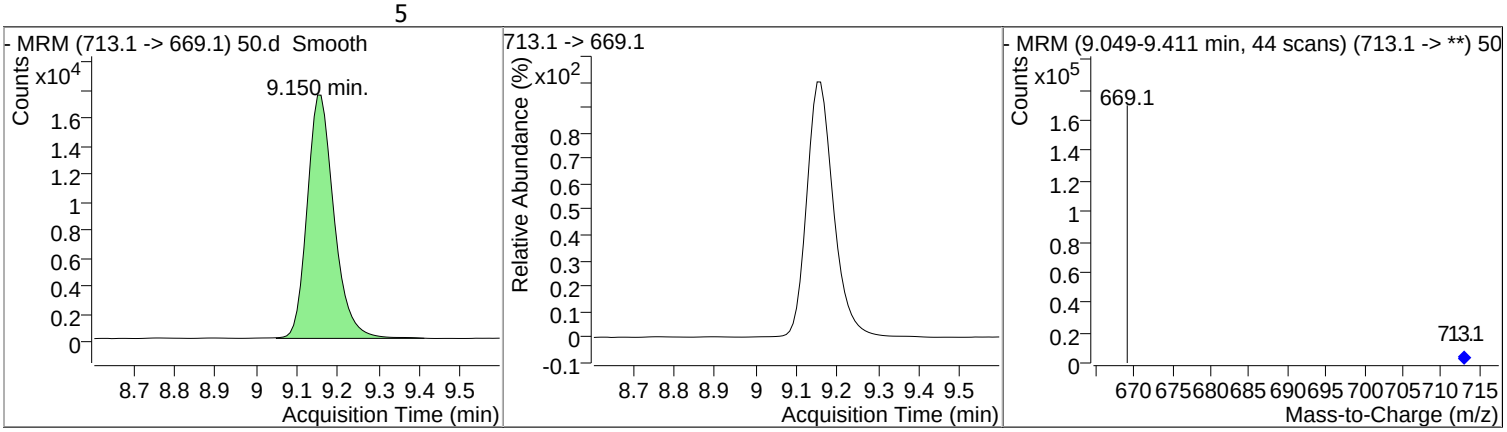
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	50719.8152	8.75	0.32	94844				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	50730.9007	8.93	0.34	104870				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	49771.7315	9.15	0.05	79405				

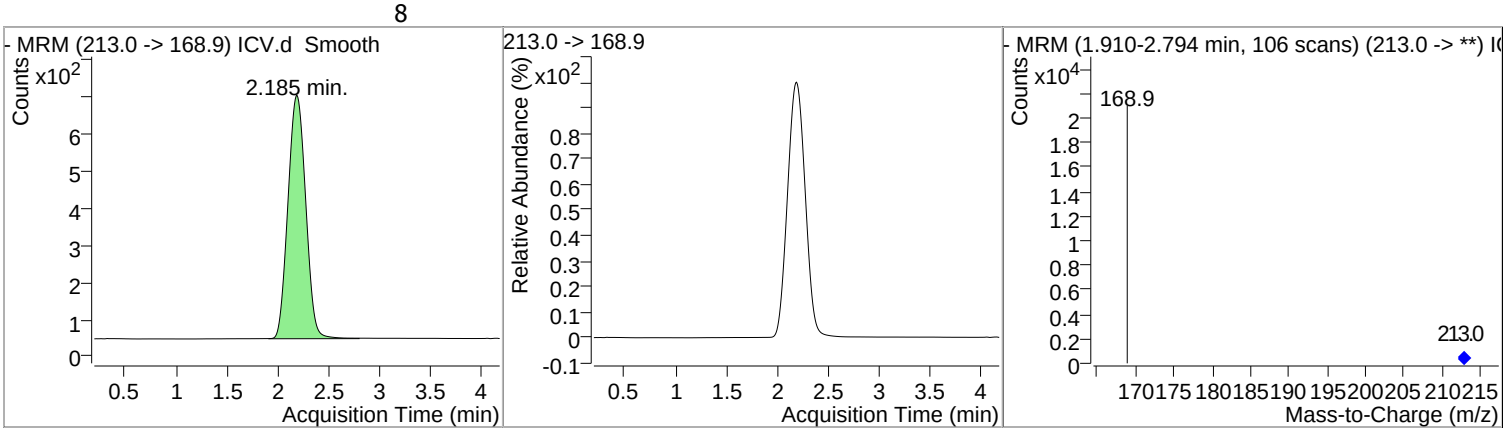


Data File	ICV.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/20/2018 10:57:08 PM
Sample Name	ICV	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

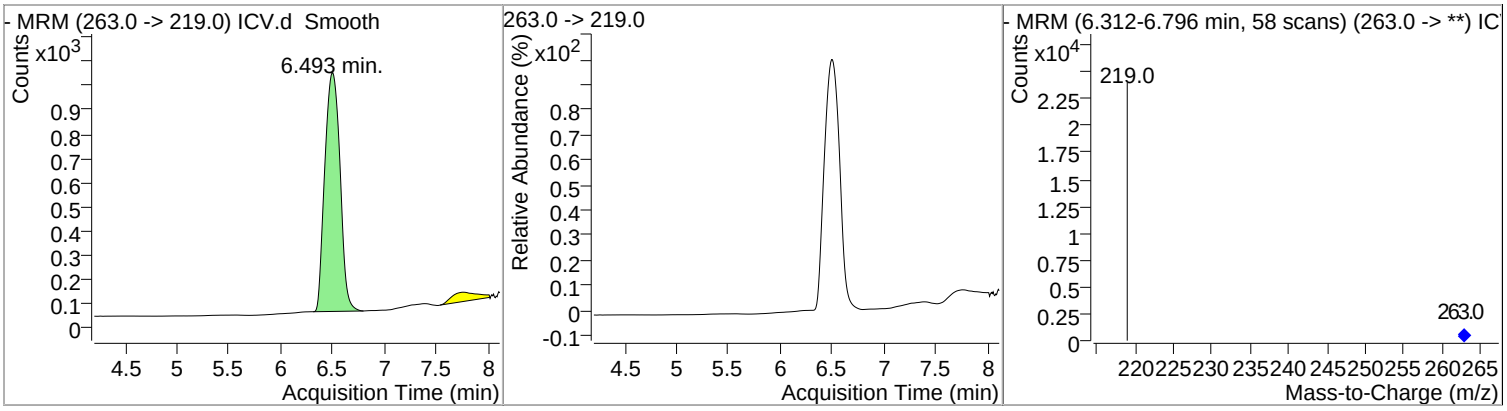
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	8.005	416.9 -> 371.9	13735	10000.0000	pg/ml		0.354
M PFOS C13	8.221	502.9 -> 80.0	11155	28700.0000	pg/ml		0.321
M d3-N-MeFOSAA	8.489	573.2 -> 419.0	10925	40000.0000	pg/ml		0.304
System Monitoring Compounds							
S PFHxA C13	7.342	314.9 -> 269.9	17066	10107.6871	pg/ml		0.404
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 101.08%			
S PFDA C13	8.406	514.9 -> 469.9	8813	9902.2067	pg/ml		0.313
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 99.02%			
S d5-N-MeFOSAA	8.580	589.2 -> 419.0	11015	46090.6571	pg/ml		0.313
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 115.23%			
Target Compounds							QValue
T PFBA	2.185	213.0 -> 168.9	7933	10295.7288	pg/ml		100
T PFPeA	6.493	263.0 -> 219.0	10113	10442.7698	pg/ml		100
T PFBS	6.863	298.9 -> 80.0	3245	8989.1108	pg/ml		100
T PFHxA	7.342	312.9 -> 268.9	15967	10291.0139	pg/ml		100
T PFHpA	7.728	362.9 -> 319.0	16995	10211.9558	pg/ml		100
T 6.2 FTS	7.996	427.0 -> 406.8	762	9281.9572	pg/ml		100
T PFOA-Total	8.005	412.9 -> 368.9	16058	10203.2306	pg/ml		100
T PFHpS	8.012	449.0 -> 79.7	2392	10279.0861	pg/ml		100
T PFHxS-Total	7.753	398.9 -> 80.0	2879	8782.8360	pg/ml		100
T PFNA	8.223	462.9 -> 418.9	8739	10925.8625	pg/ml		100
T PFOS-Total	8.222	498.9 -> 80.0	4670	9520.7142	pg/ml		100
T PFDA	8.406	513.1 -> 469.0	14393	10586.1450	pg/ml		100
T 8.2 FTS	8.414	527.0 -> 81.0	902	10273.3116	pg/ml		100
T N-MeFOSAA	8.497	570.2 -> 419.1	3234	10374.5202	pg/ml		100
T FOSA	8.550	497.9 -> 77.9	10996	11359.7956	pg/ml		100
T PFDS	8.563	599.0 -> 80.0	2926	10073.4505	pg/ml		100
T N-EtFOSAA	8.581	584.2 -> 419.0	3009	11857.9901	pg/ml		100
T PFUnA	8.573	563.1 -> 519.0	14743	10788.1223	pg/ml		100
T PFDoA	8.748	613.1 -> 569.0	17705	9576.1844	pg/ml		100
T PFTrDA	8.932	663.1 -> 619.0	20926	10238.4398	pg/ml		100
T PFTA	9.159	713.1 -> 669.1	16939	10738.9997	pg/ml	m	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

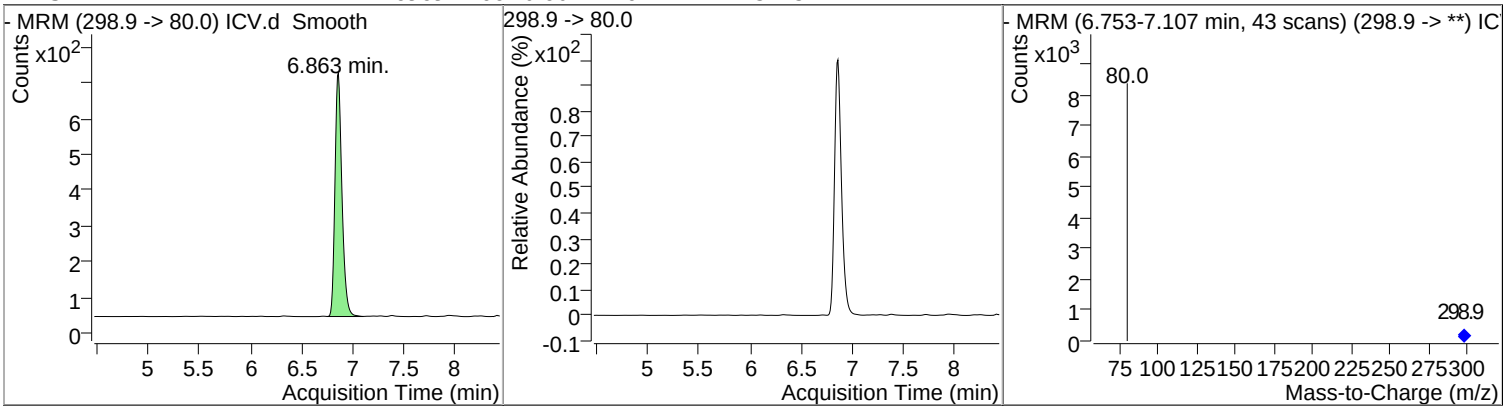
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	10295.7288	2.19	0.01	7933				



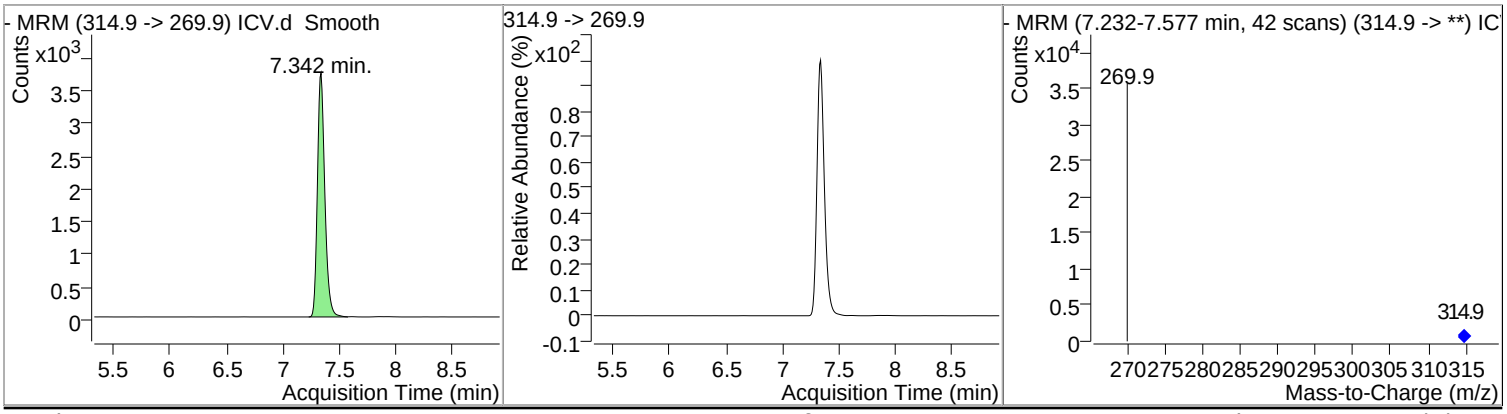
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	10442.7698	6.49	0.38	10113				



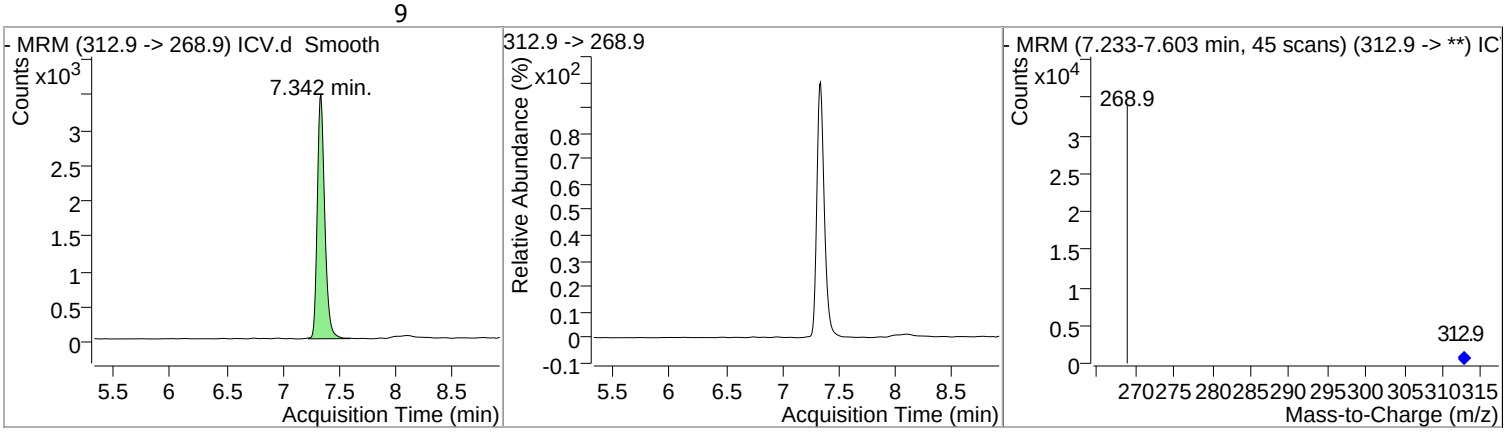
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	8989.1108	6.86	0.41	3245				



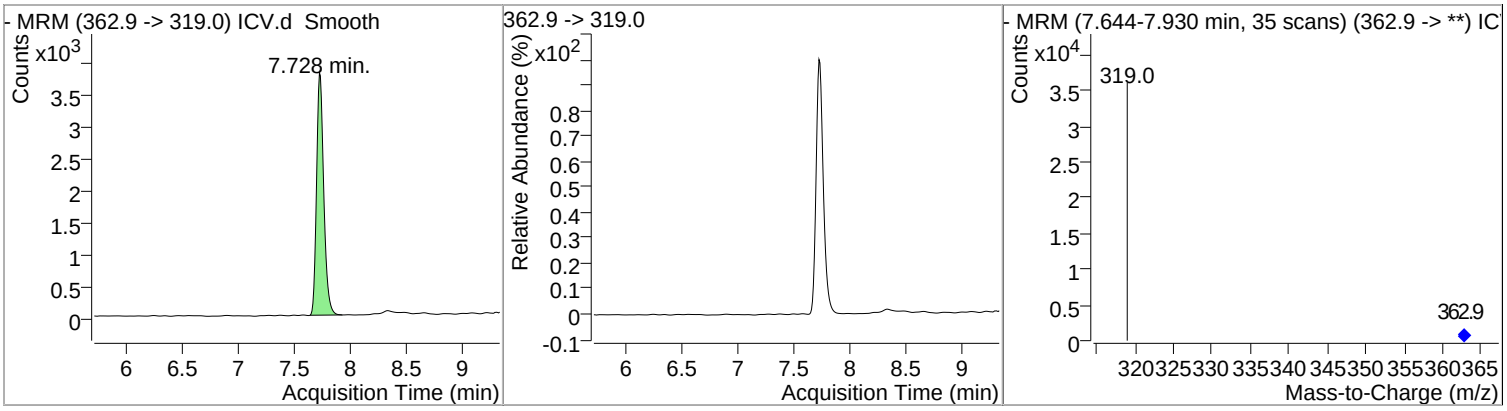
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	10107.6871	7.34	0.40	17066				



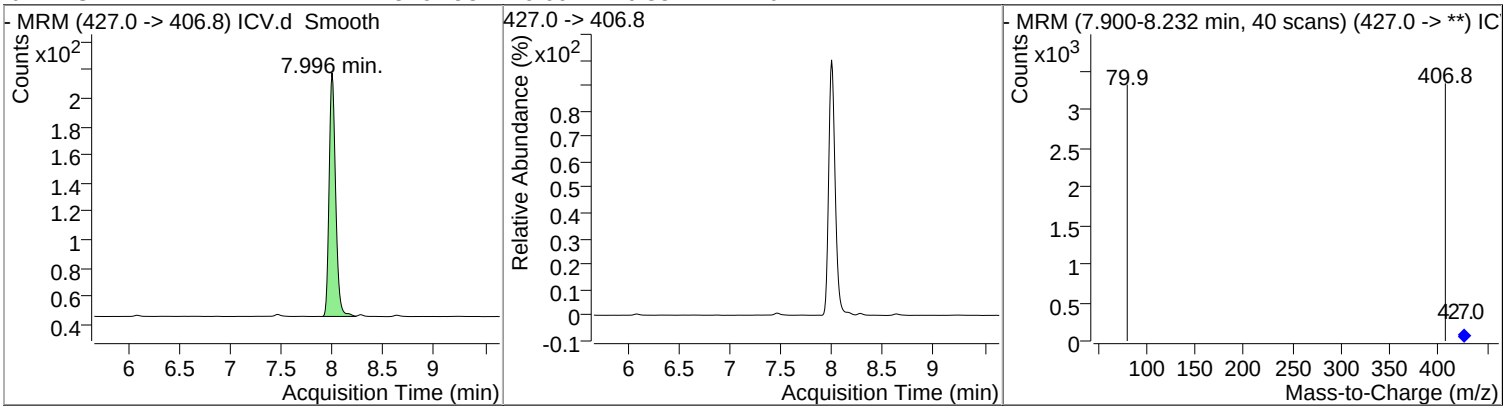
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	10291.0139	7.34	0.40	15967				



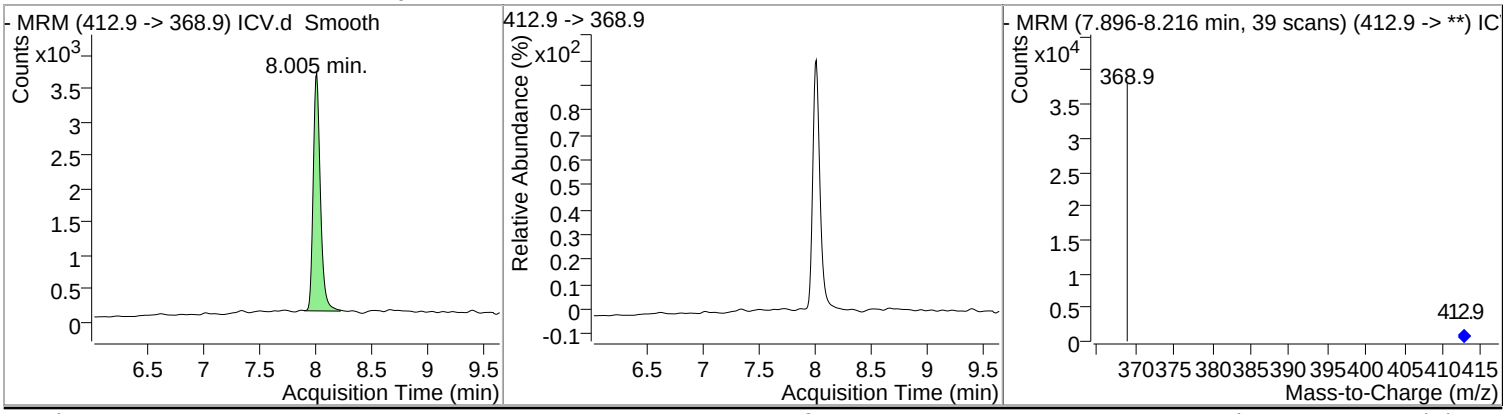
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	10211.9558	7.73	0.38	16995				



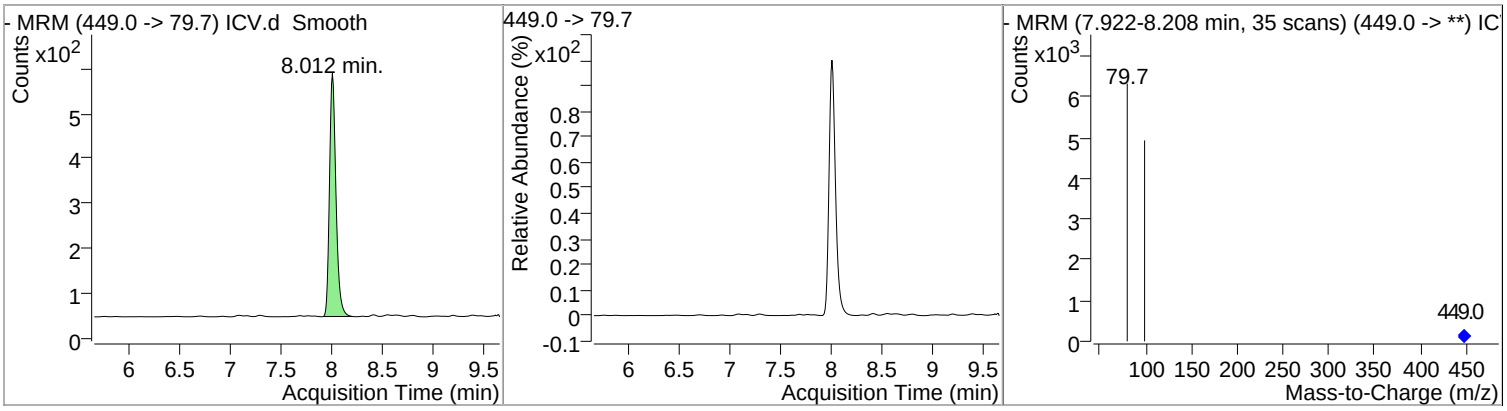
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	9281.9572	8.00	0.35	762				



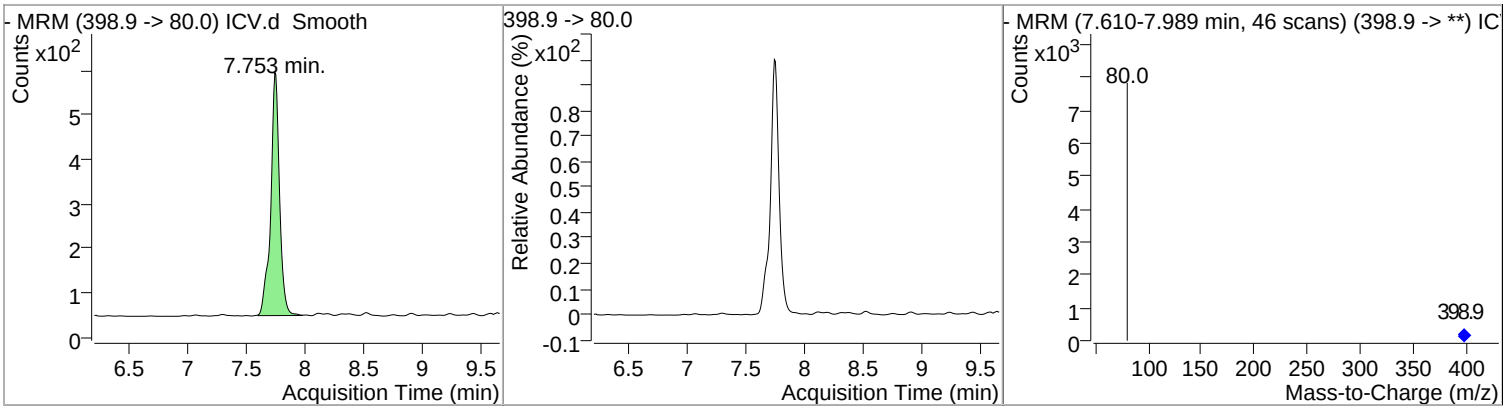
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	10203.2306	8.01	0.35	16058				



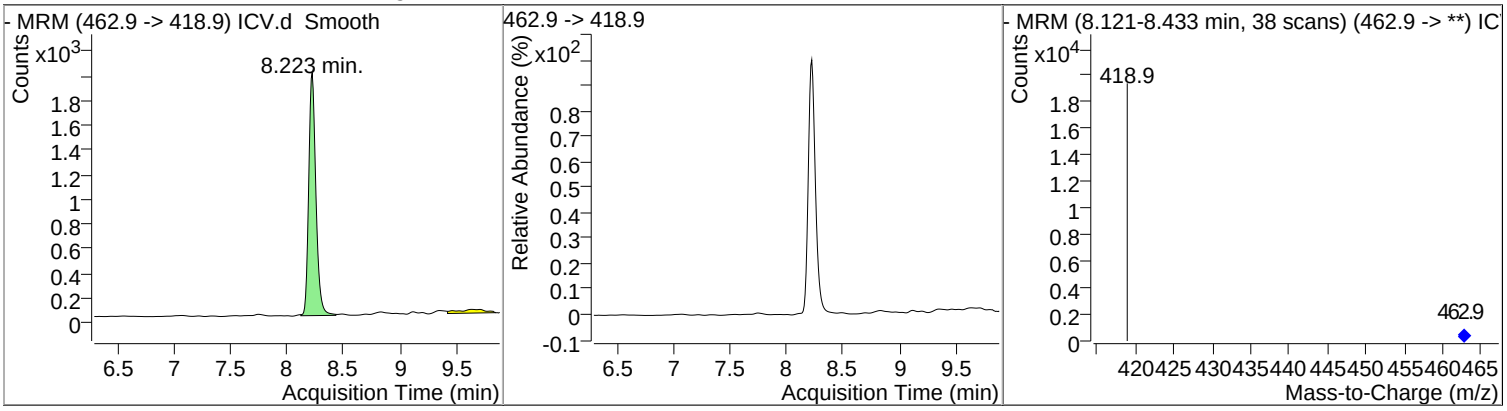
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	10279.0861	8.01	0.35	2392				



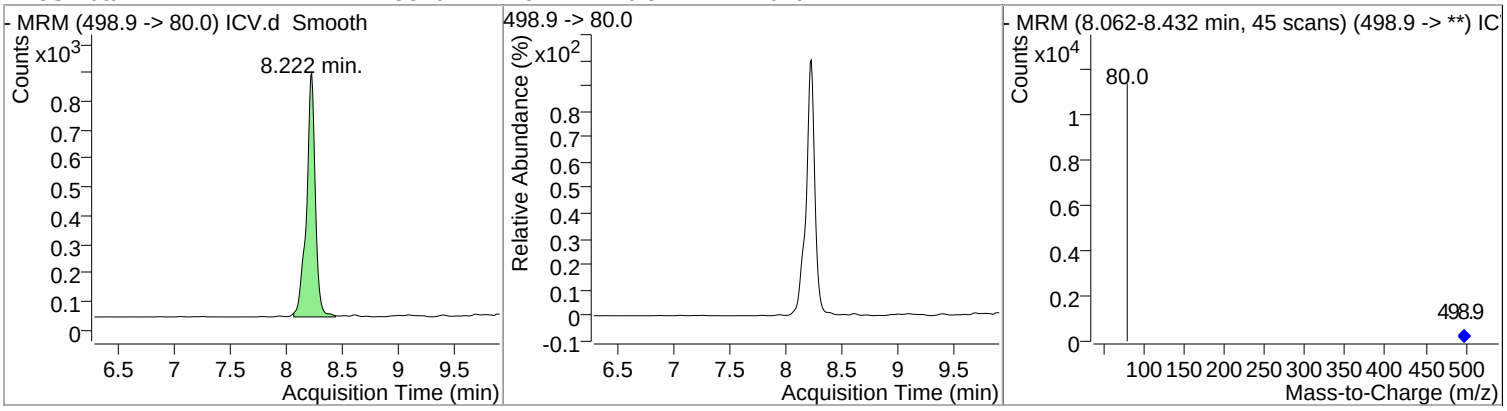
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	8782.8360	7.75	0.08	2879				



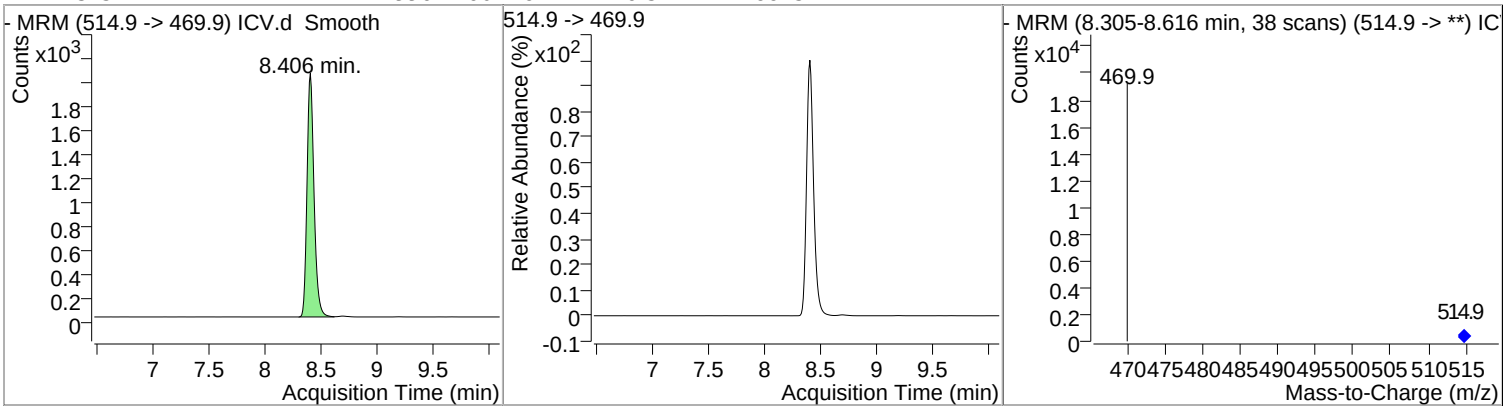
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	10925.8625	8.22	0.33	8739				



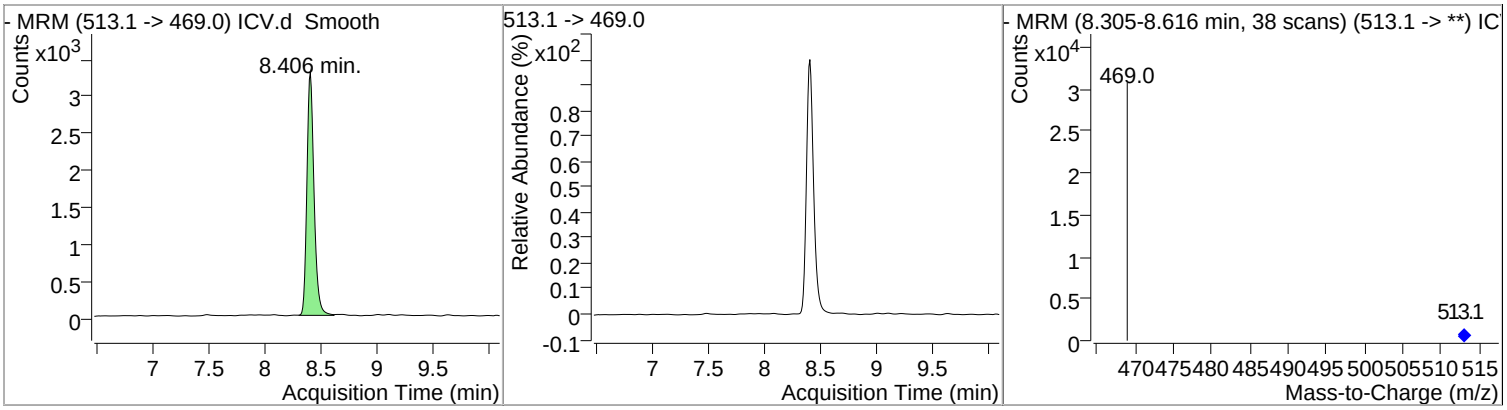
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	9520.7142	8.22	0.32	4670				



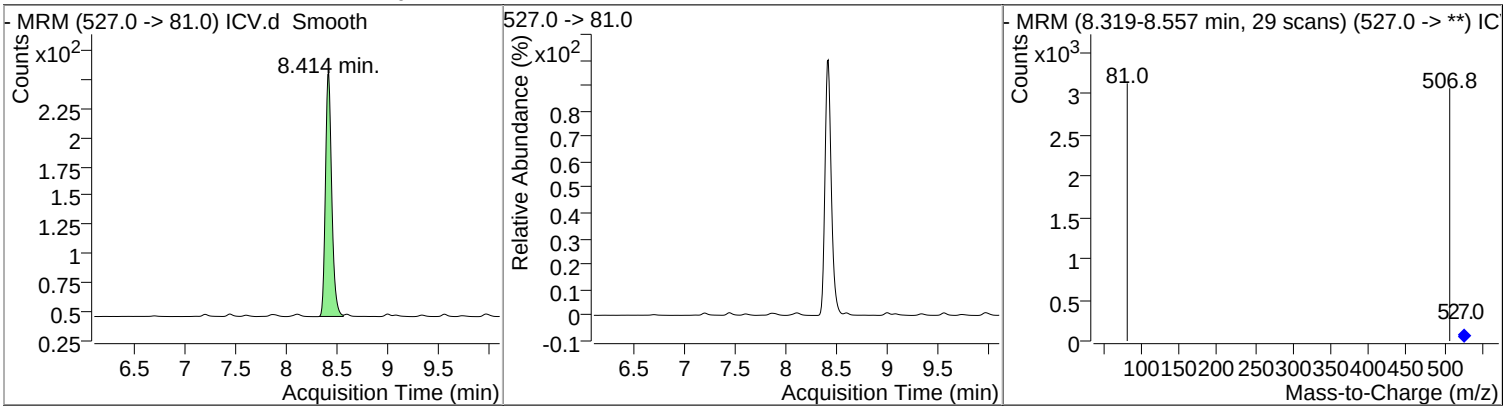
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PFDA C13	9902.2067	8.41	0.31	8813				



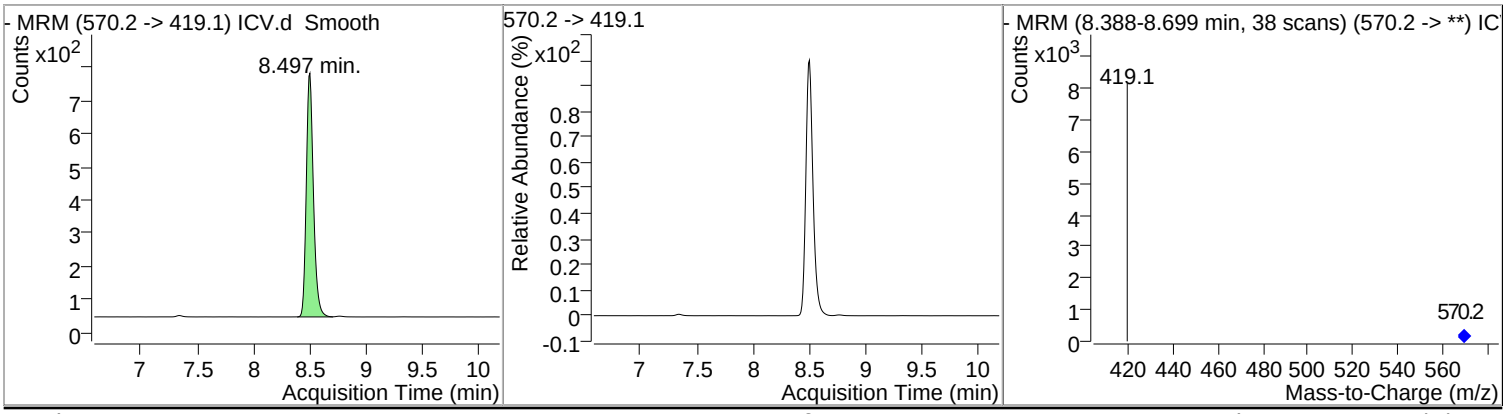
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PFDA	10586.1450	8.41	0.31	14393				



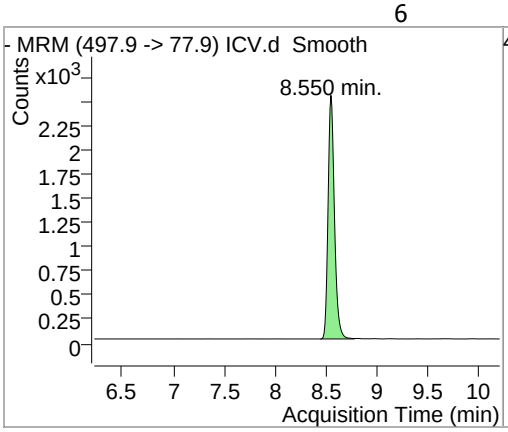
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	10273.3116	8.41	0.31	902				

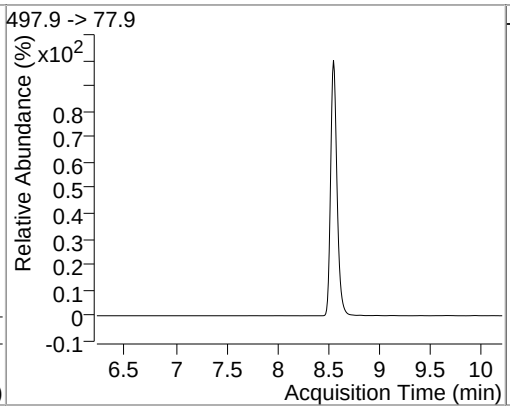


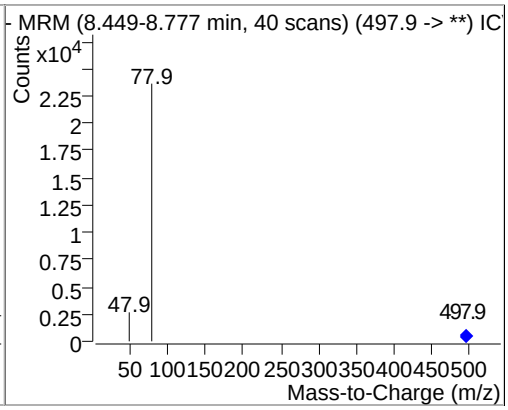
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	10374.5202	8.50	0.31	3234				



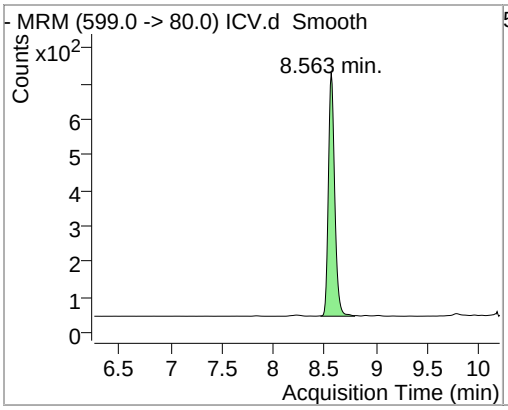
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FOSA	11359.7956	8.55	0.33	10996				

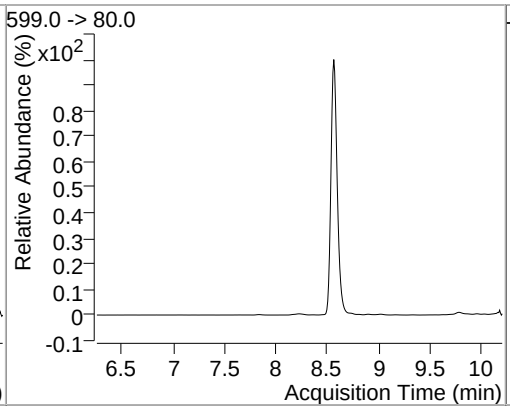


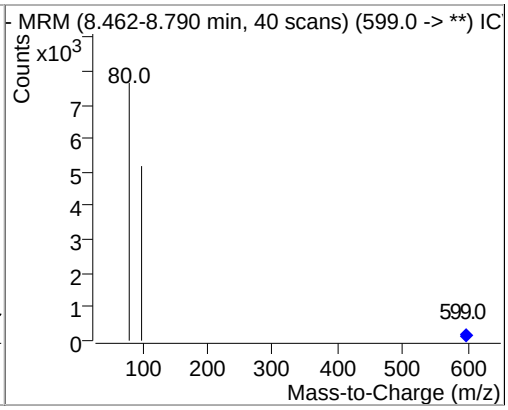




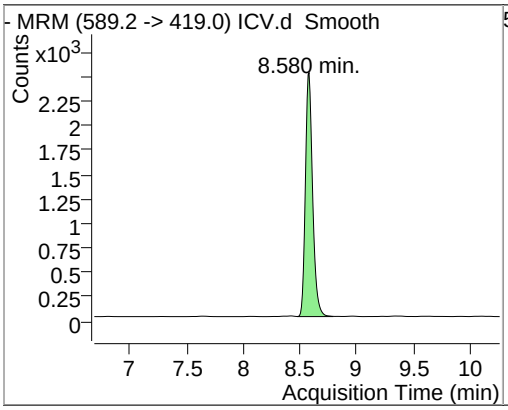
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	10073.4505	8.56	0.30	2926				

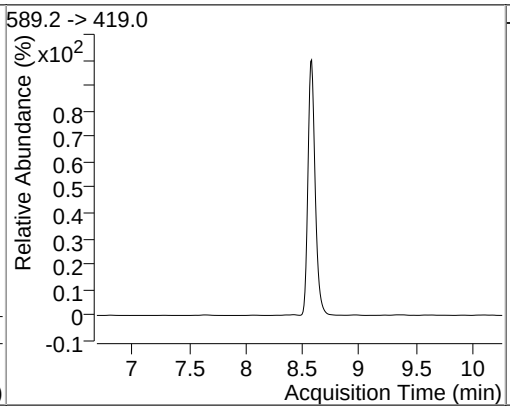


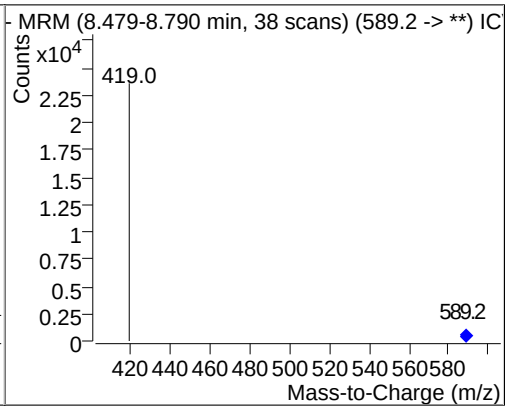




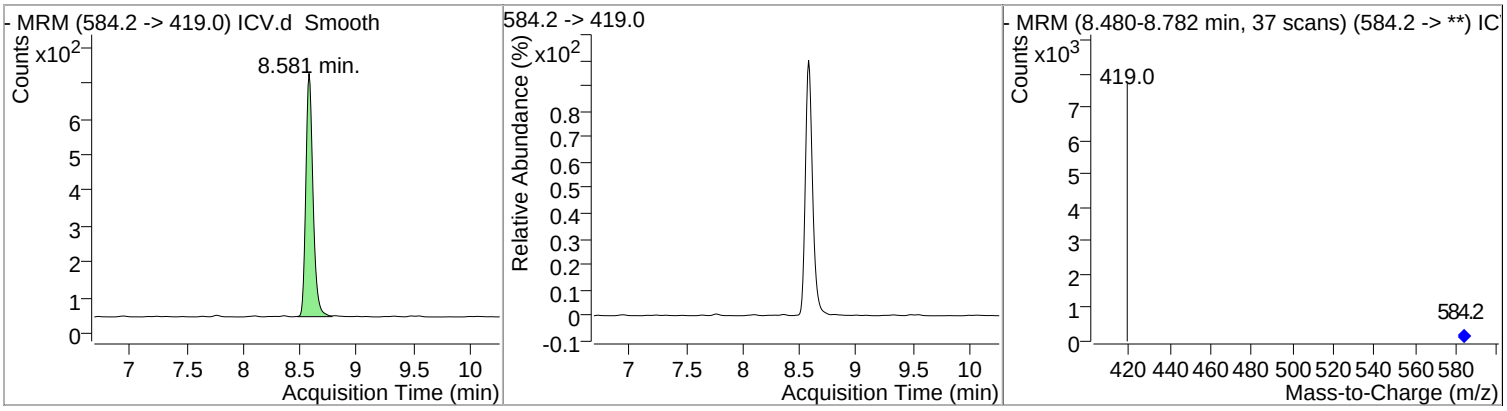
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	46090.6571	8.58	0.31	11015				



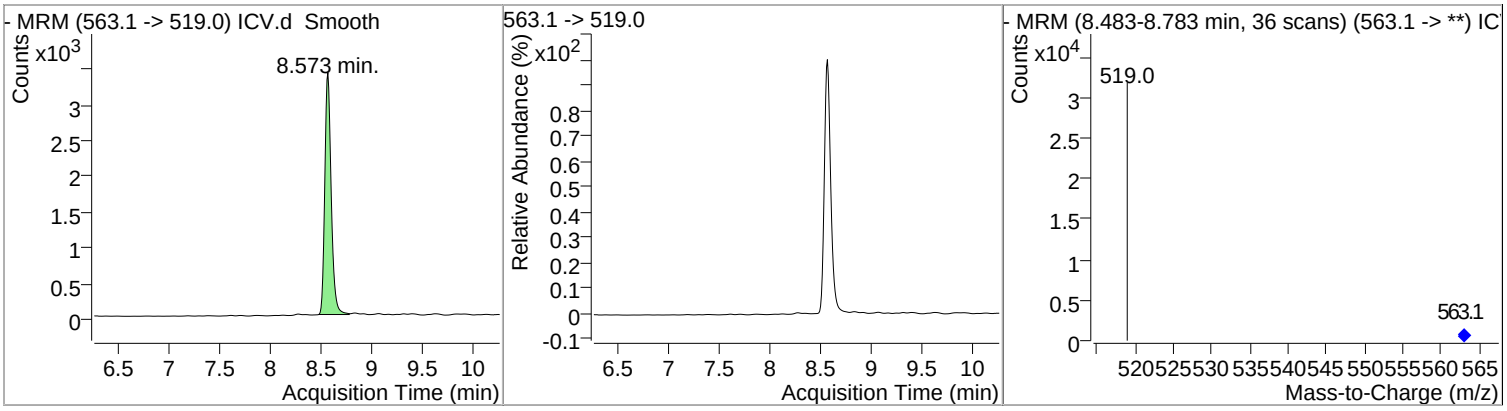




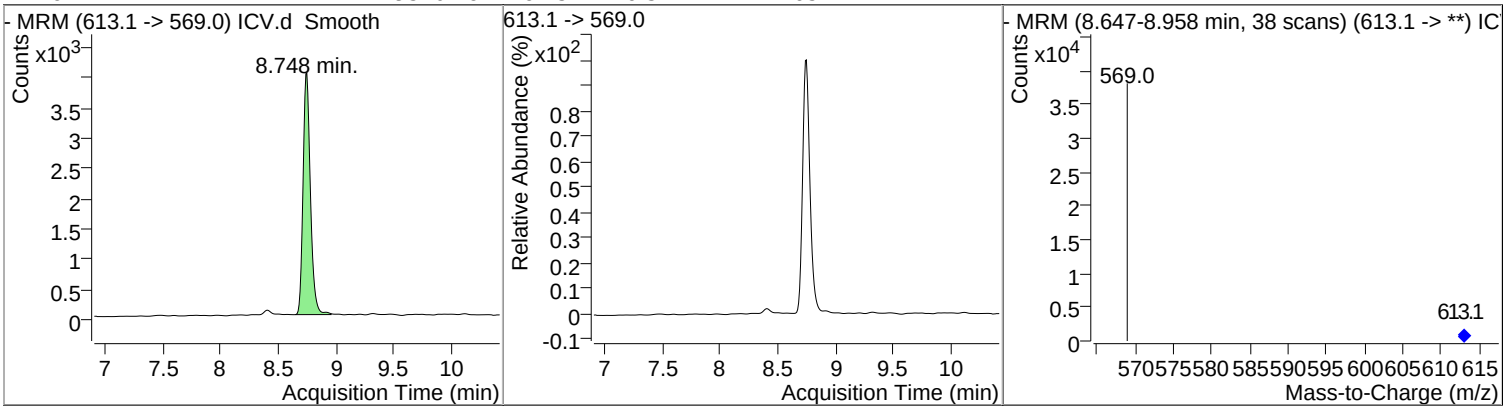
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	11857.9901	8.58	0.31	3009				



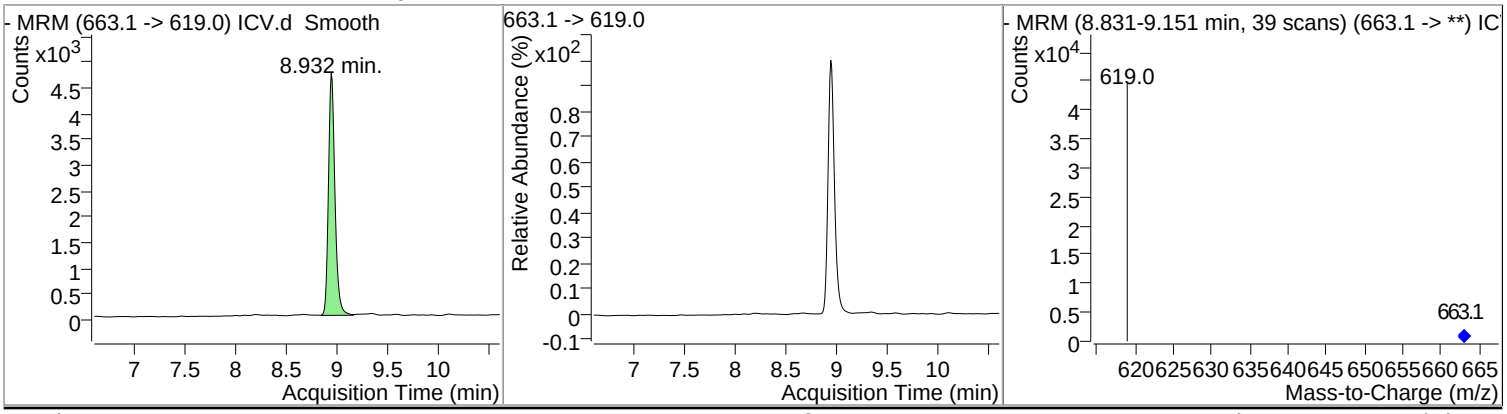
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	10788.1223	8.57	0.30	14743				



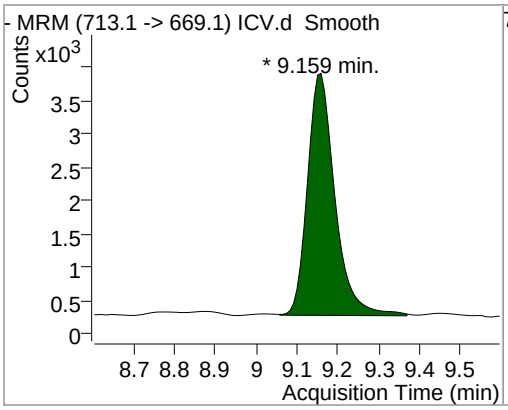
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	9576.1844	8.75	0.32	17705				

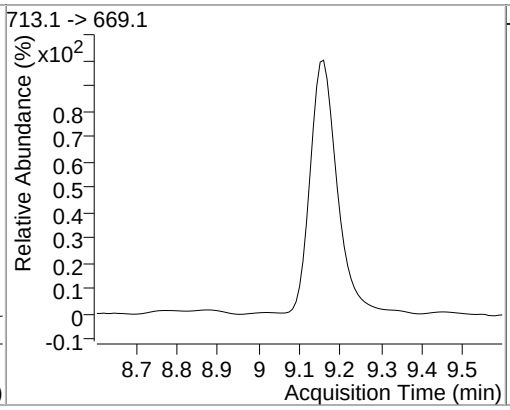


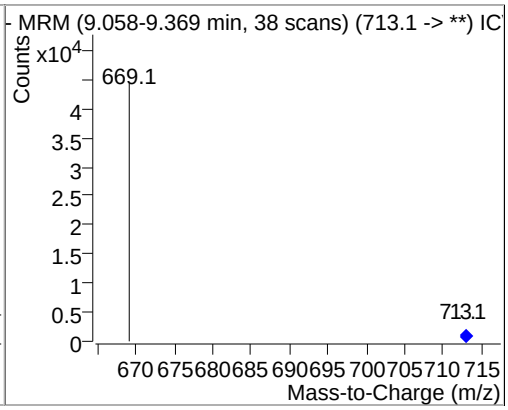
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	10238.4398	8.93	0.34	20926				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	10738.9997	9.16	0.06	16939 (m)				





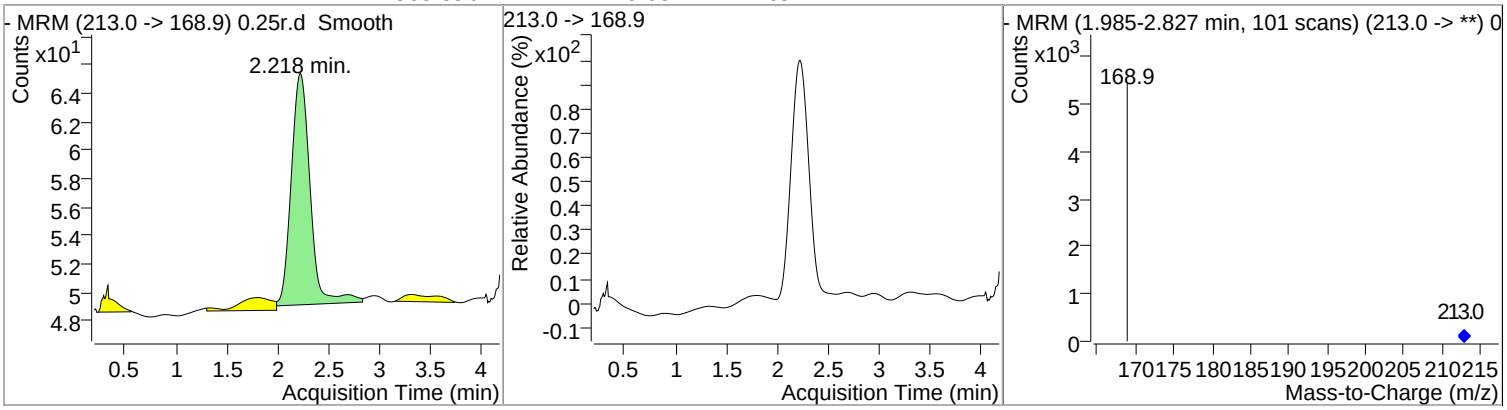


Data File	0.25r.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/21/2018 12:51:06 PM
Sample Name	0.25	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

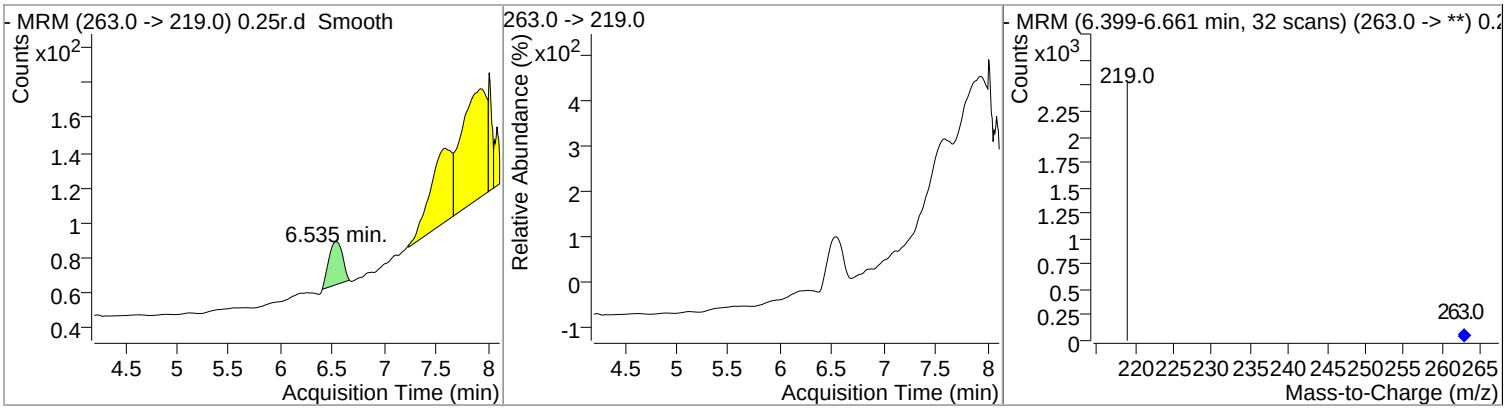
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	8.013	416.9 -> 371.9	12272	10000.0000	pg/ml		0.363
M PFOS C13	8.221	502.9 -> 80.0	9622	28700.0000	pg/ml		0.321
M d3-N-MeFOSAA	8.497	573.2 -> 419.0	11348	40000.0000	pg/ml		0.312
System Monitoring Compounds							
S PFHxA C13	7.358	314.9 -> 269.9	3165	2097.8431	pg/ml		0.421
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 20.98%		*	
S PFDA C13	8.406	514.9 -> 469.9	1432	1800.9644	pg/ml		0.313
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 18.01%		*	
S d5-N-MeFOSAA	8.580	589.2 -> 419.0	2174	8758.4592	pg/ml		0.313
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 21.90%		*	
Target Compounds							QValue
T PFBA	2.218	213.0 -> 168.9	209	303.5964	pg/ml		100
T PFPeA	6.535	263.0 -> 219.0	228	263.2689	pg/ml		100
T PFBS	6.888	298.9 -> 80.0	93	300.1391	pg/ml	m	100
T PFHxA	7.359	312.9 -> 268.9	344	248.0797	pg/ml	m	100
T PFHpA	7.745	362.9 -> 319.0	272	182.7124	pg/ml	m	100
T 6.2 FTS	8.005	427.0 -> 406.8	10	147.0428	pg/ml	m	100
T PFOA-Total	8.014	412.9 -> 368.9	567	403.4725	pg/ml	m	100
T PFHpS	8.021	449.0 -> 79.7	70	349.8785	pg/ml	m	100
T PFHxS-Total	7.779	398.9 -> 80.0	72	255.4219	pg/ml		100
T PFNA	7.911	462.9 -> 418.9	127	177.9285	pg/ml		100
T PFOS-Total	8.222	498.9 -> 80.0	178	419.7239	pg/ml	m	100
T PFDA	8.406	513.1 -> 469.0	334	275.2602	pg/ml	m	100
T 8.2 FTS	8.405	527.0 -> 81.0	27	352.2405	pg/ml	m	100
T N-MeFOSAA	8.497	570.2 -> 419.1	115	356.2082	pg/ml		100
T FOSA	8.558	497.9 -> 77.9	315	312.8164	pg/ml		100
T PFDS	8.571	599.0 -> 80.0	90	358.3236	pg/ml	m	100
T N-EtFOSAA	8.589	584.2 -> 419.0	90	342.0878	pg/ml	m	100
T PFUnA	8.573	563.1 -> 519.0	390	319.0792	pg/ml	m	100
T PFDoA	8.748	613.1 -> 569.0	585	353.9842	pg/ml	m	100
T PFTrDA	8.932	663.1 -> 619.0	426	233.1141	pg/ml	m	100
T PFTA	9.167	713.1 -> 669.1	533	378.2262	pg/ml	m	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

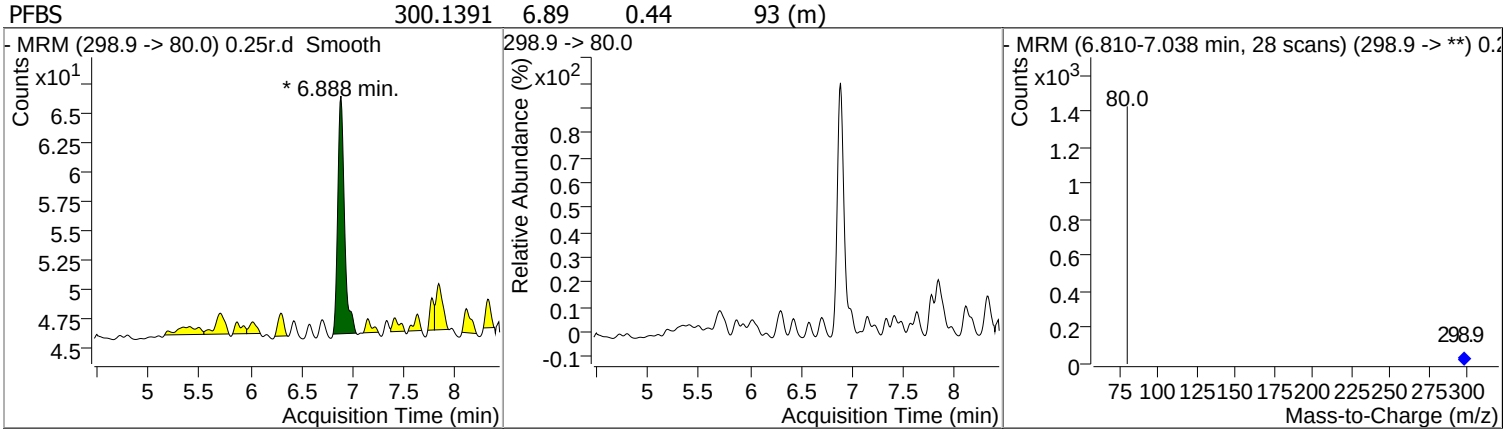
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	303.5964	2.22	0.05	209				



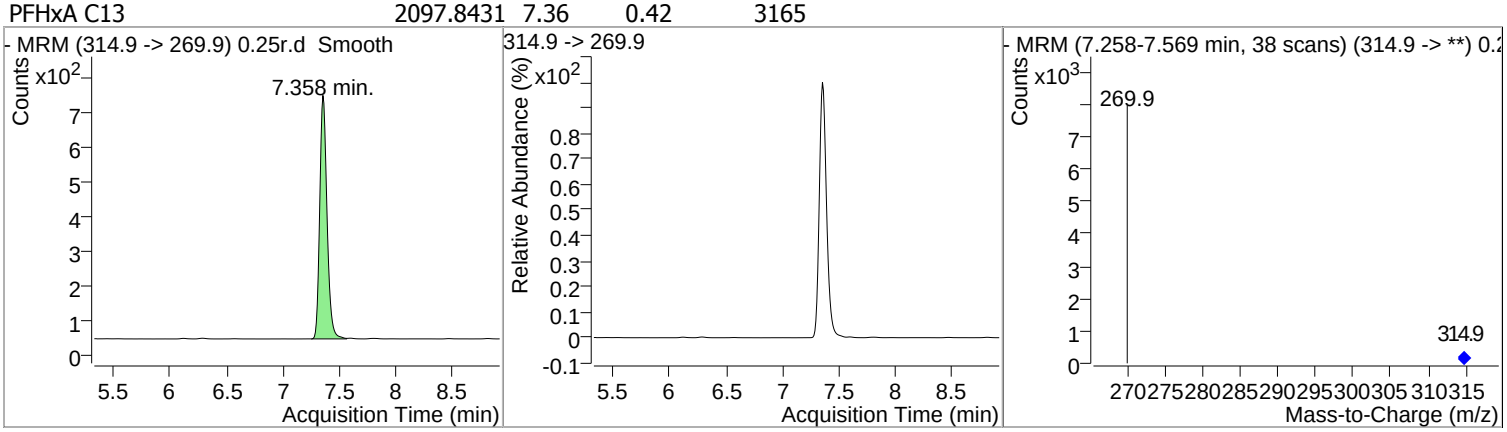
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	263.2689	6.54	0.43	228				



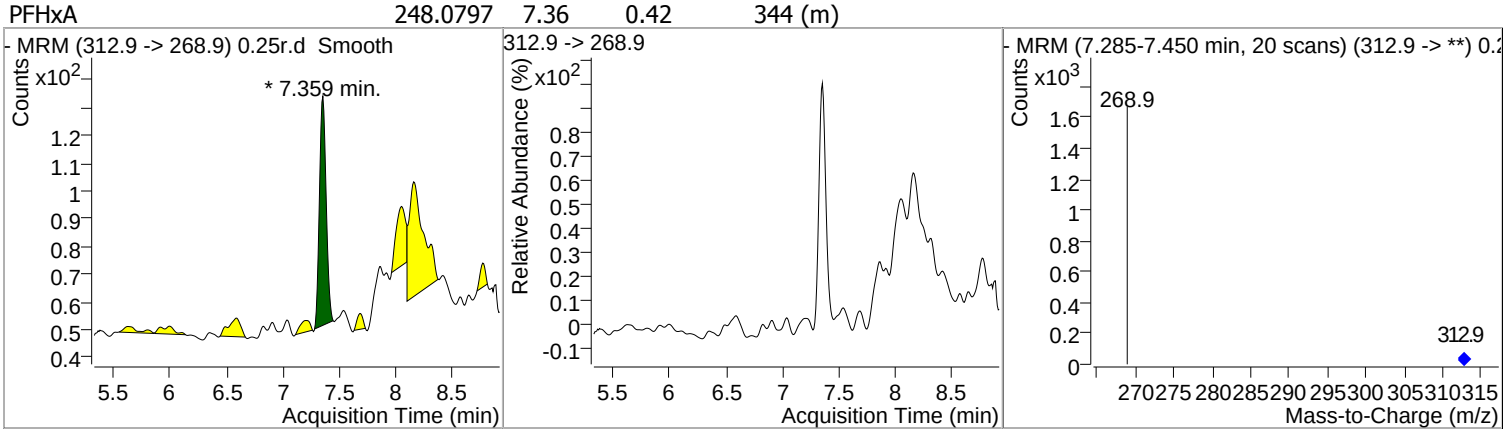
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	300.1391	6.89	0.44	93 (m)				



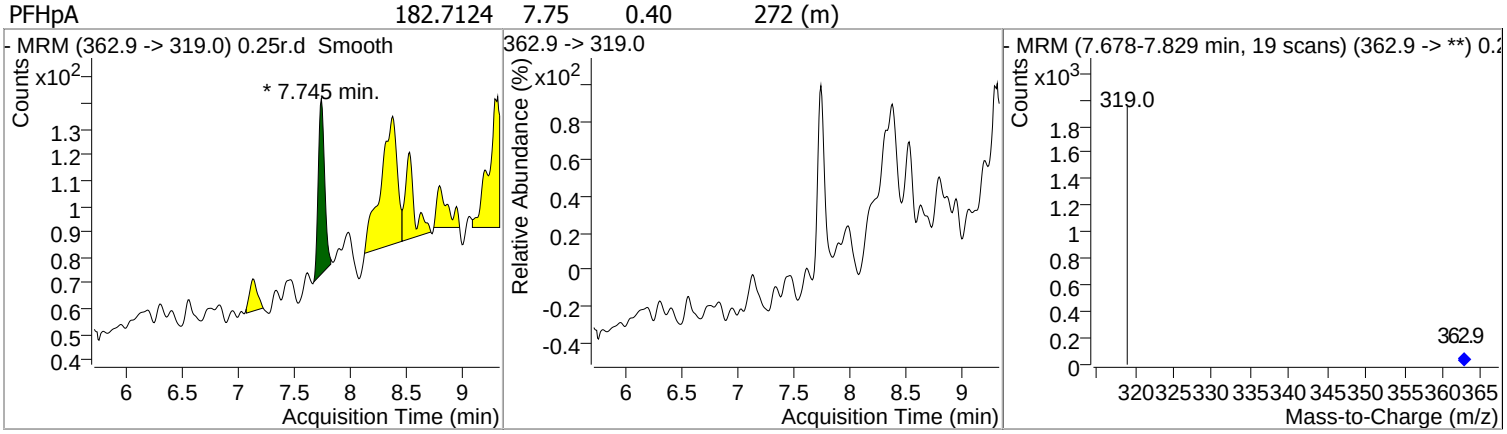
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	2097.8431	7.36	0.42	3165				



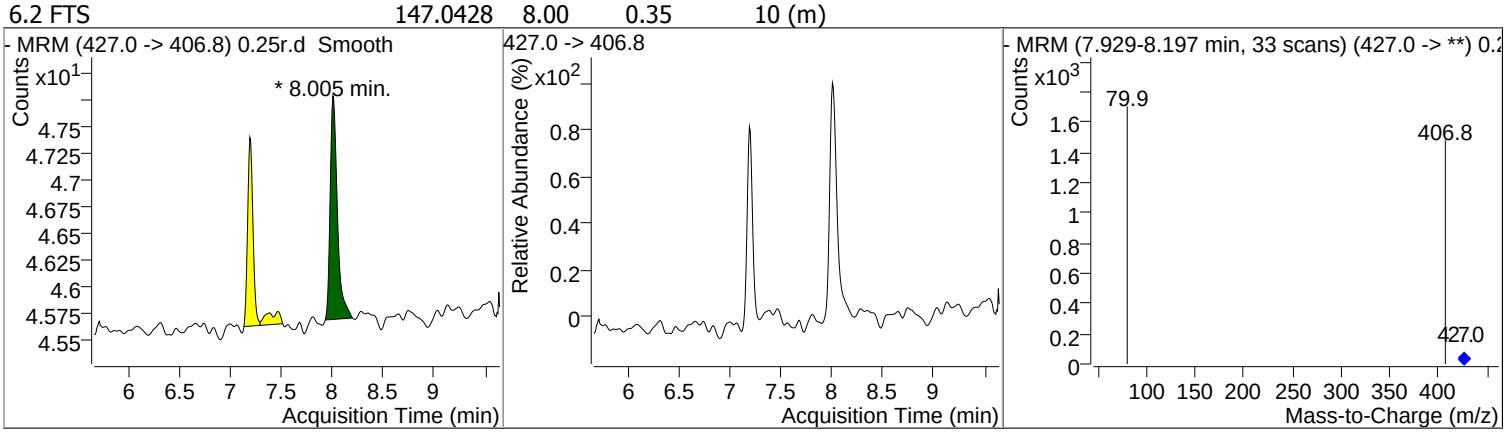
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	248.0797	7.36	0.42	344 (m)				



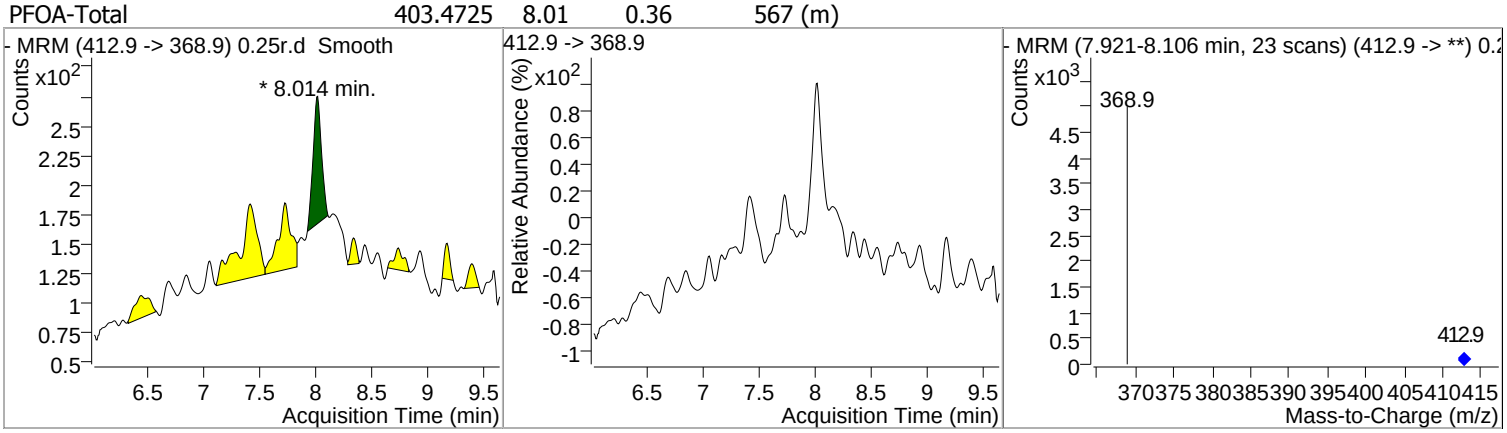
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	182.7124	7.75	0.40	272 (m)				



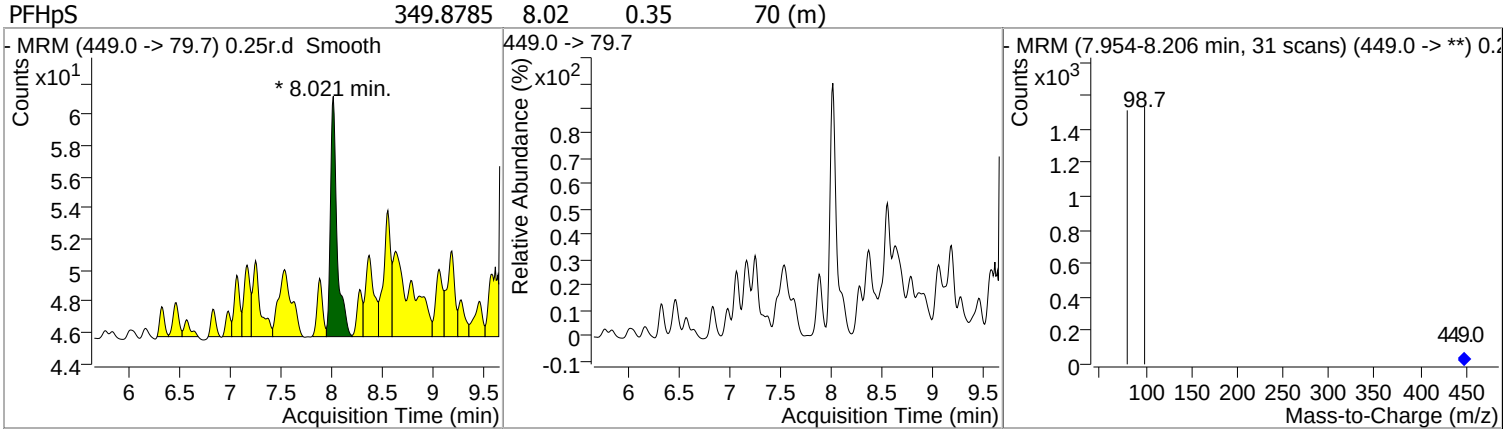
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	147.0428	8.00	0.35	10 (m)				



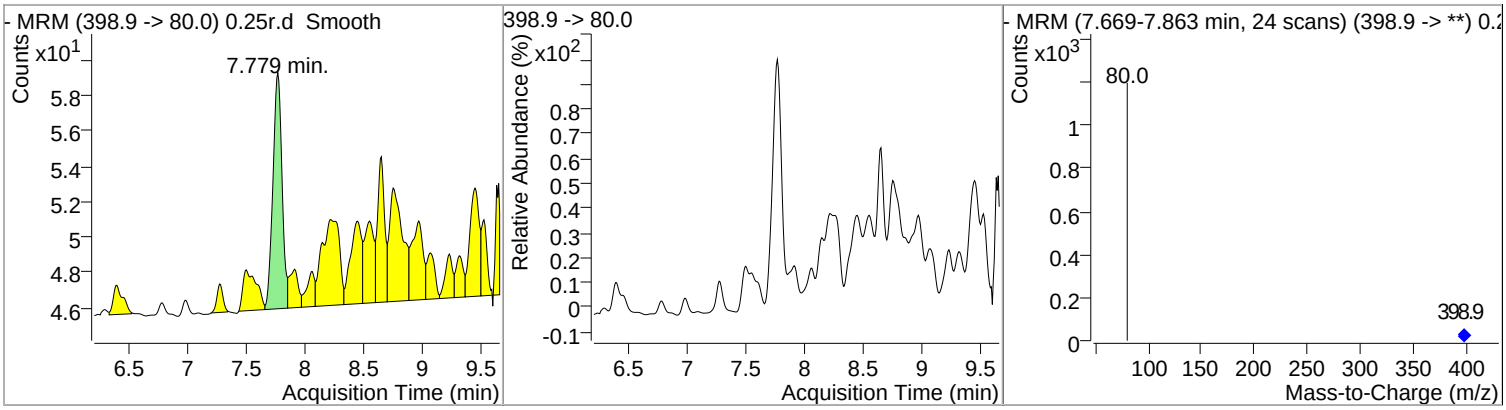
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	403.4725	8.01	0.36	567 (m)				



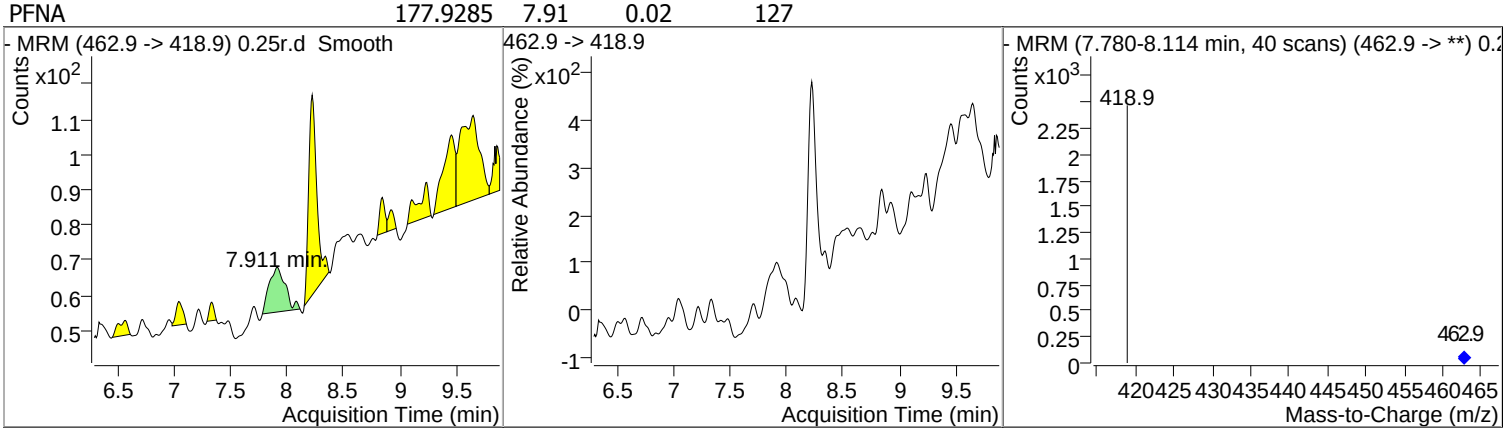
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	349.8785	8.02	0.35	70 (m)				



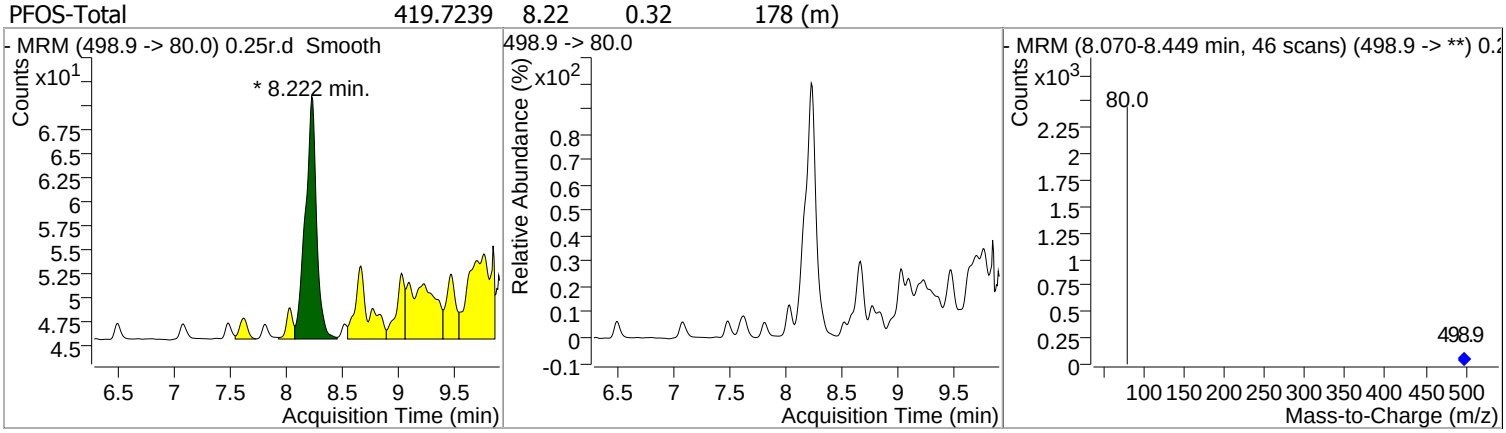
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	255.4219	7.78	0.10	72				



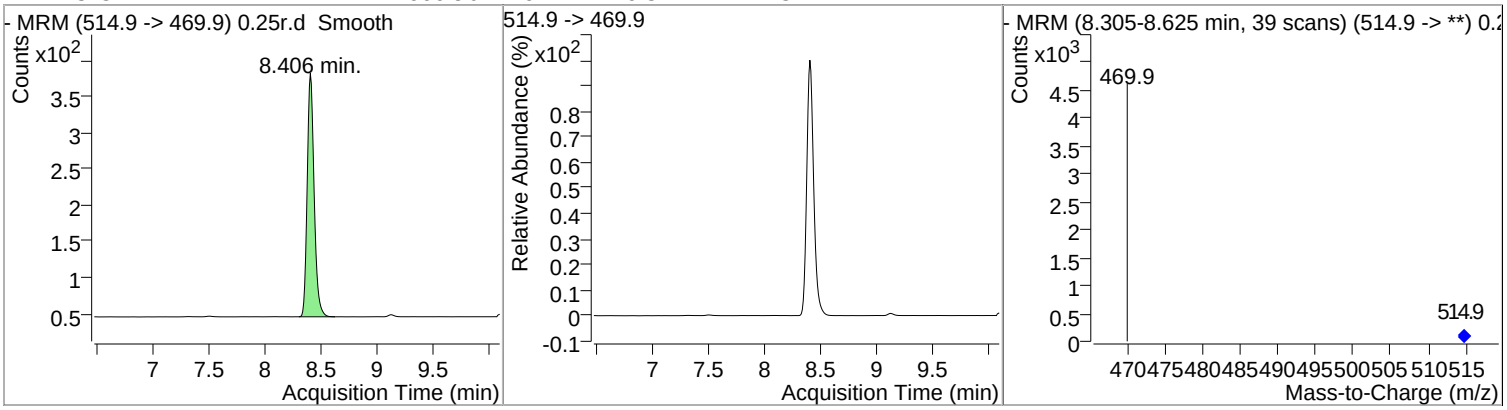
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	177.9285	7.91	0.02	127				



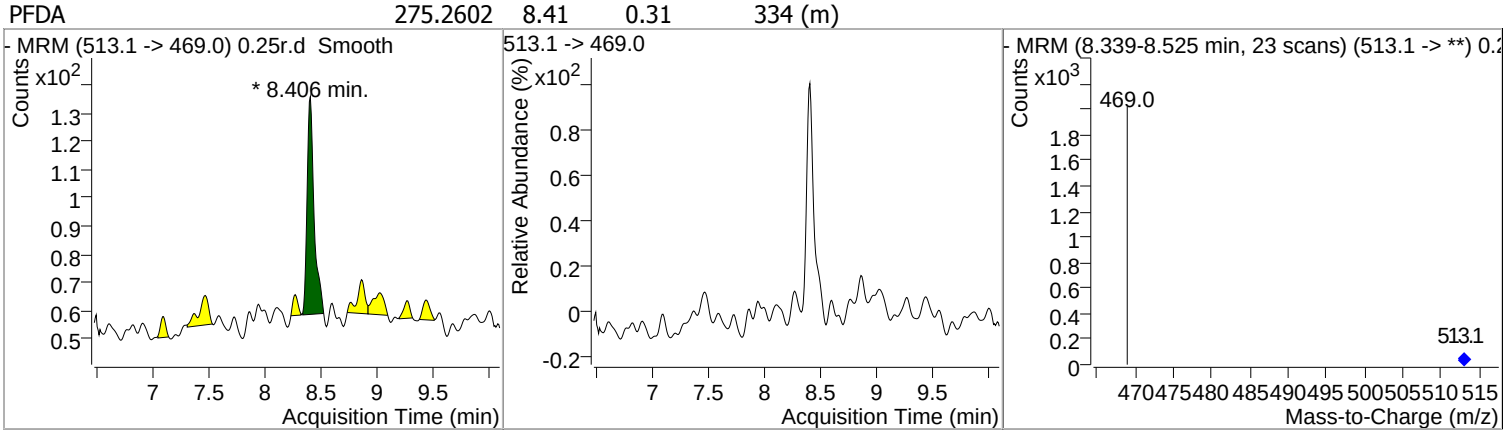
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	419.7239	8.22	0.32	178 (m)				



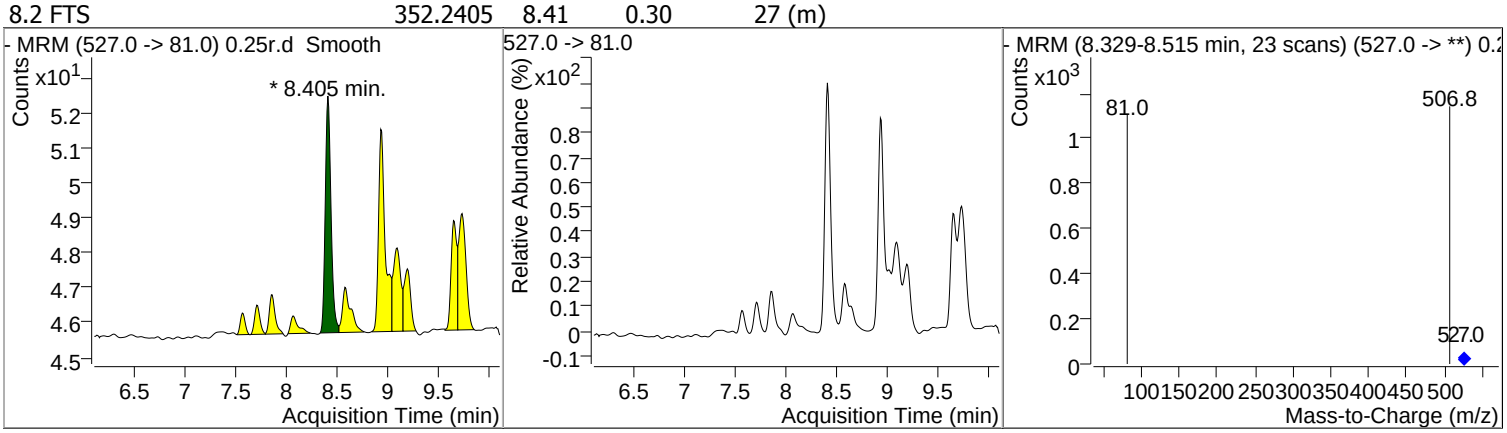
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	1800.9644	8.41	0.31	1432				



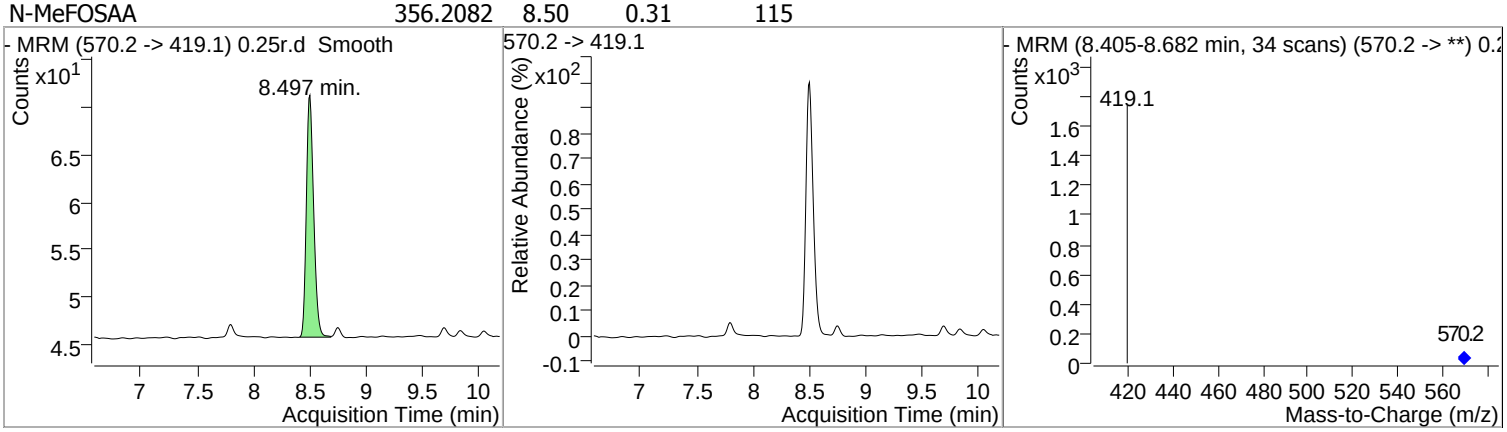
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	275.2602	8.41	0.31	334 (m)				



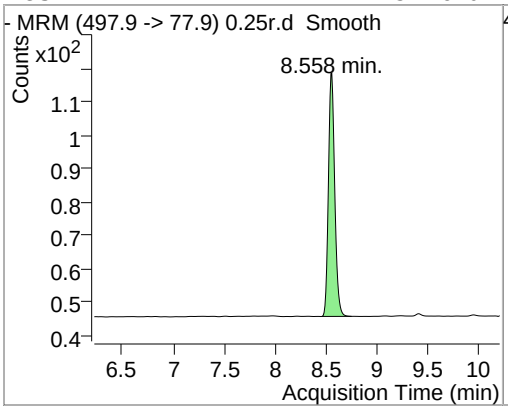
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	352.2405	8.41	0.30	27 (m)				

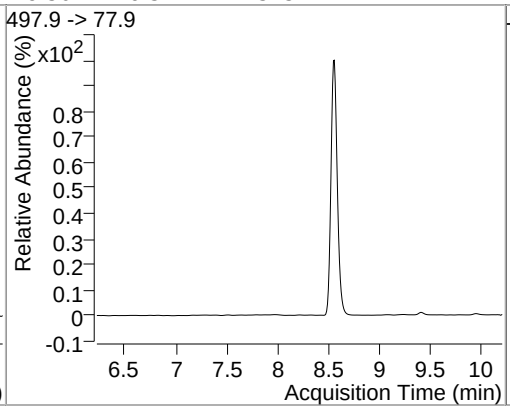


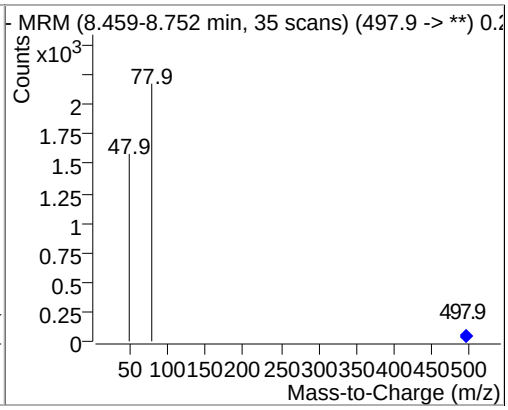
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	356.2082	8.50	0.31	115				



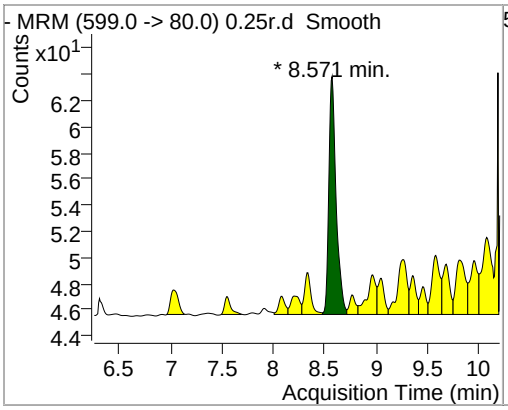
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	312.8164	8.56	0.34	315				

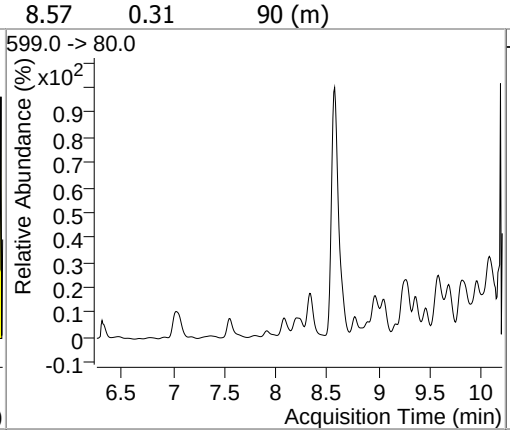


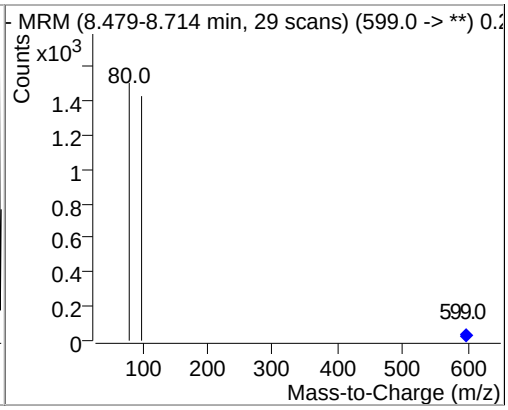




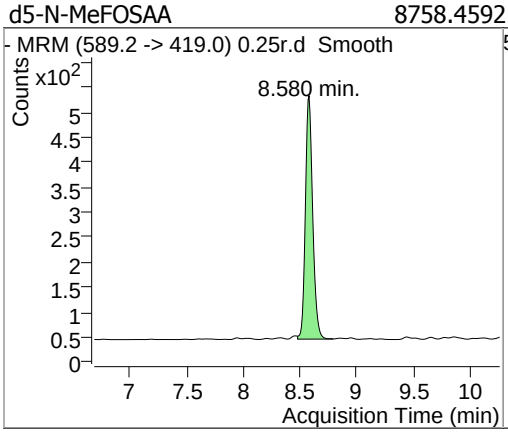
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	358.3236	8.57	0.31	90 (m)				

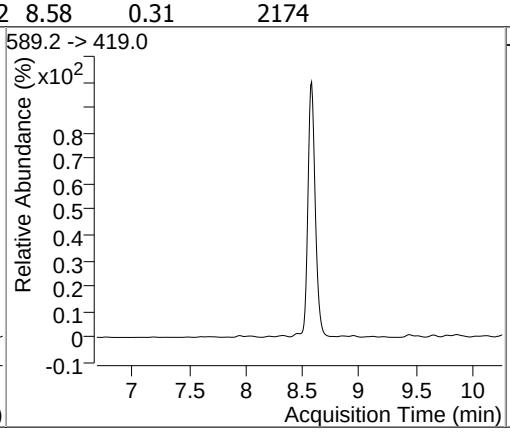


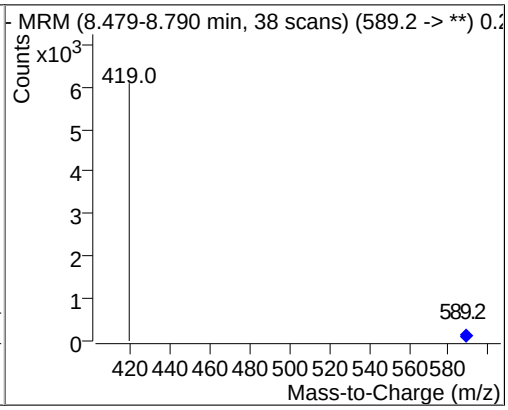




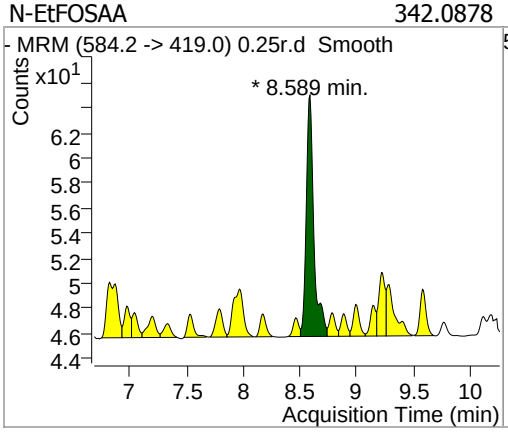
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	8758.4592	8.58	0.31	2174				

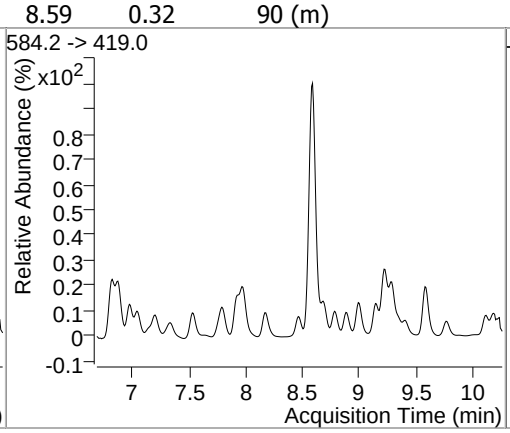


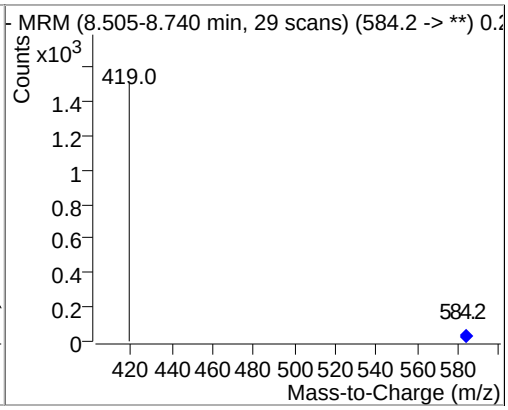




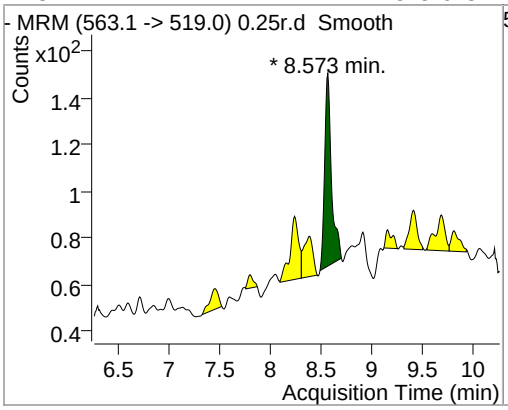
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	342.0878	8.59	0.32	90 (m)				

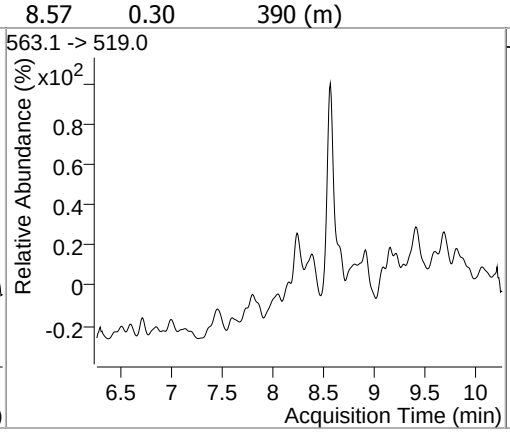


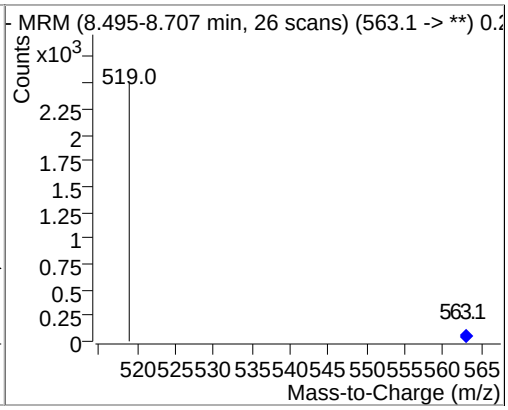




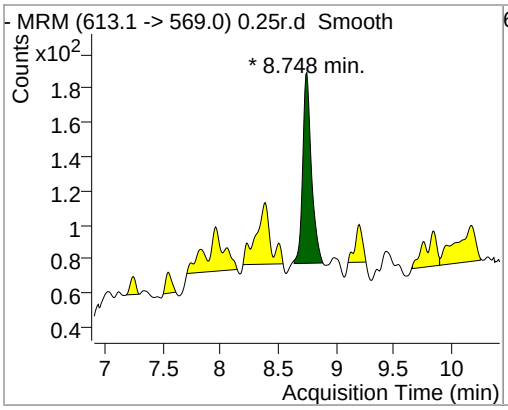
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	319.0792	8.57	0.30	390 (m)				

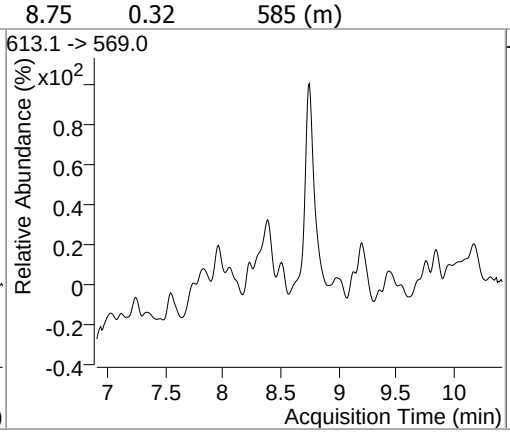


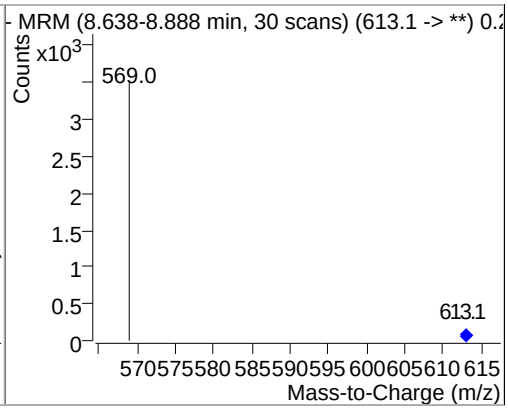




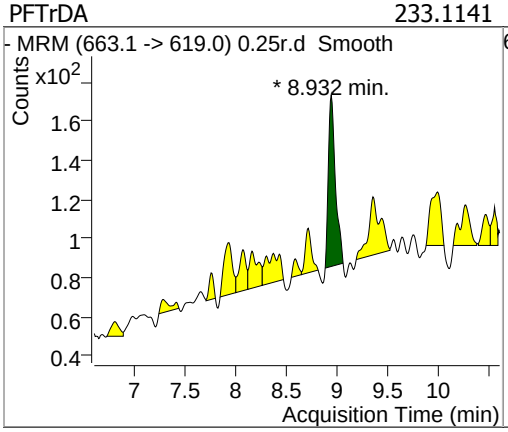
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	353.9842	8.75	0.32	585 (m)				

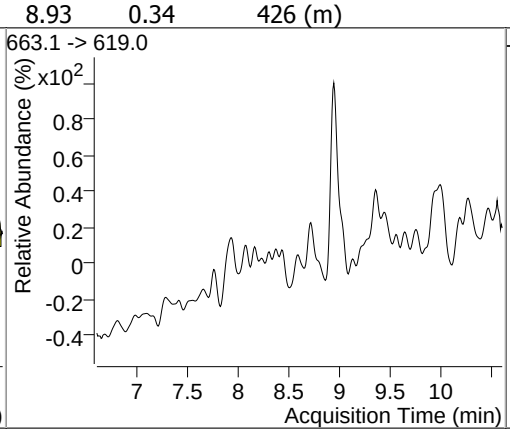


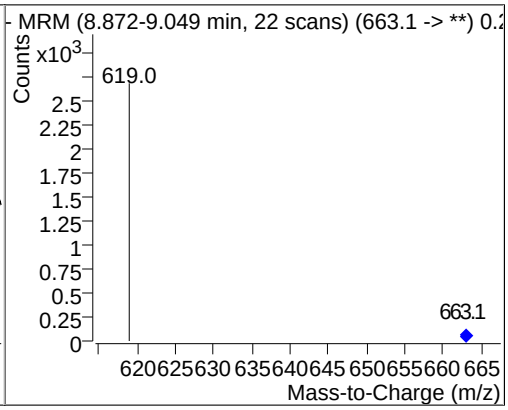




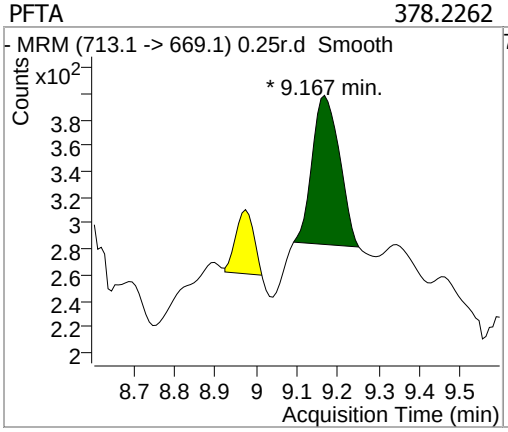
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	233.1141	8.93	0.34	426 (m)				

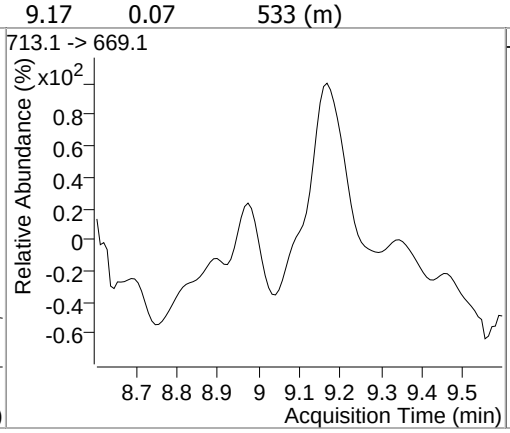


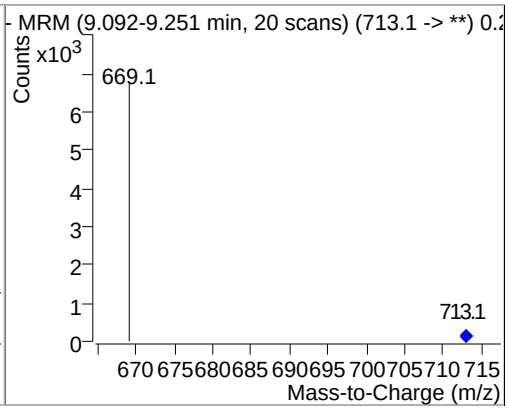




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	378.2262	9.17	0.07	533 (m)				





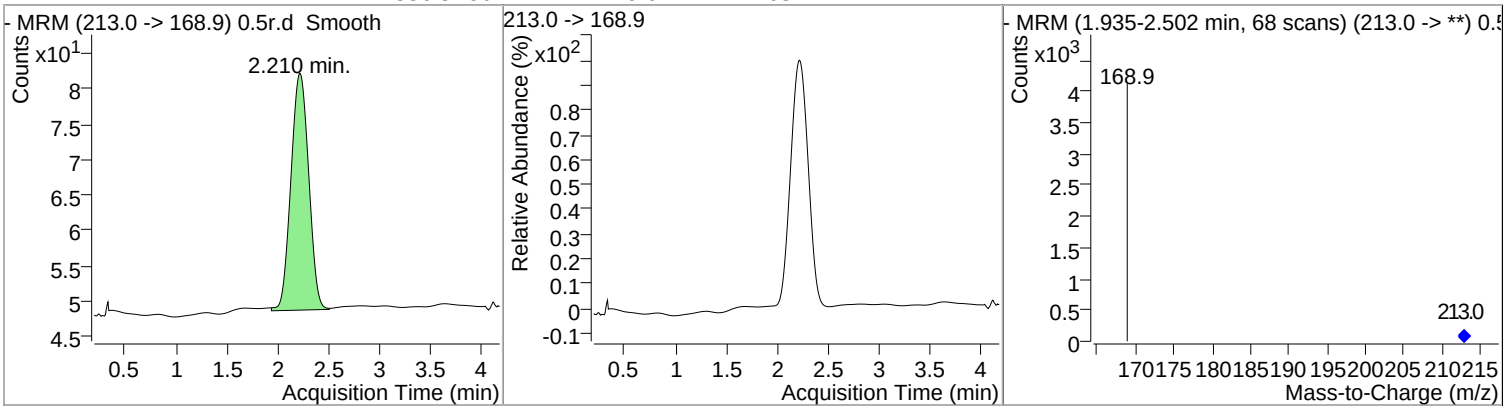


Data File	0.5r.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/21/2018 1:03:48 PM
Sample Name	0.5	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File		Comment	
Tune File		Tune Date	
Batch Name	CAL.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

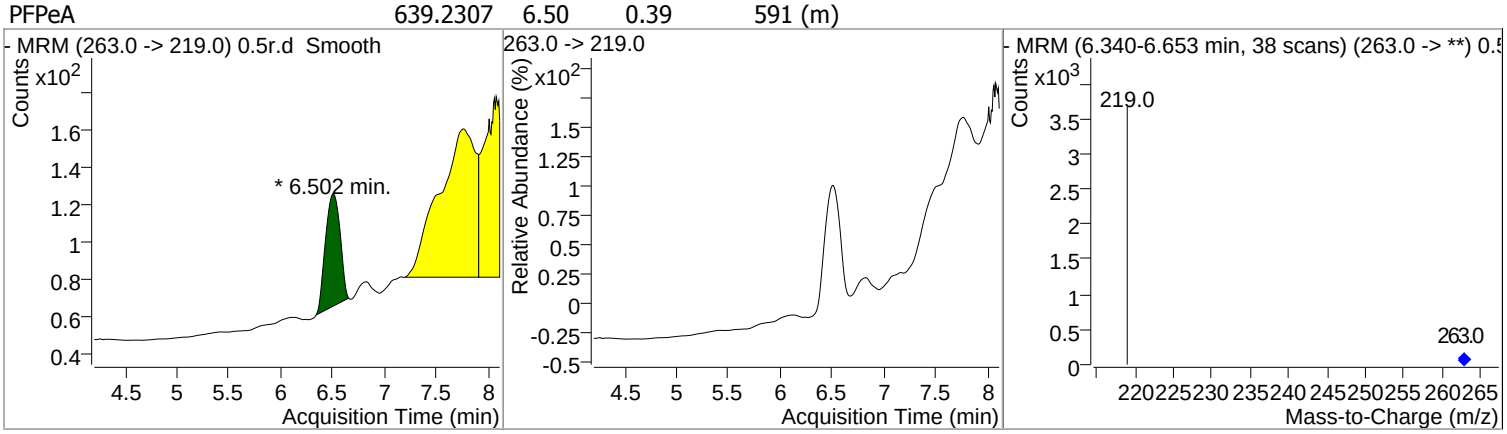
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	7.988	416.9 -> 371.9	13106	10000.0000	pg/ml		0.338
M PFOS C13	8.196	502.9 -> 80.0	11441	28700.0000	pg/ml		0.296
M d3-N-MeFOSAA	8.463	573.2 -> 419.0	12194	40000.0000	pg/ml		0.279
System Monitoring Compounds							
S PFHxA C13	7.333	314.9 -> 269.9	6902	4283.6967	pg/ml		0.396
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 42.84%		*	
S PFDA C13	8.381	514.9 -> 469.9	3731	4392.9633	pg/ml		0.287
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 43.93%		*	
S d5-N-MeFOSAA	8.555	589.2 -> 419.0	4833	18117.5827	pg/ml		0.287
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 45.29%		*	
Target Compounds							QValue
T PFBA	2.210	213.0 -> 168.9	405	550.9486	pg/ml		100
T PFPeA	6.502	263.0 -> 219.0	591	639.2307	pg/ml	m	100
T PFBS	6.863	298.9 -> 80.0	187	504.9225	pg/ml		100
T PFHxA	7.334	312.9 -> 268.9	933	630.1148	pg/ml	m	100
T PFHpA	7.720	362.9 -> 319.0	839	528.3872	pg/ml	m	100
T 6.2 FTS	7.971	427.0 -> 406.8	26	306.5574	pg/ml	m	100
T PFOA-Total	7.980	412.9 -> 368.9	569	378.9826	pg/ml	m	100
T PFHpS	7.996	449.0 -> 79.7	140	587.8235	pg/ml	m	100
T PFHxS-Total	7.745	398.9 -> 80.0	167	495.3621	pg/ml		100
T PFNA	8.197	462.9 -> 418.9	410	536.7203	pg/ml		100
T PFOS-Total	8.205	498.9 -> 80.0	214	425.3970	pg/ml	m	100
T PFDA	8.381	513.1 -> 469.0	746	574.8977	pg/ml	m	100
T 8.2 FTS	8.388	527.0 -> 81.0	34	376.9015	pg/ml		100
T N-MeFOSAA	8.464	570.2 -> 419.1	201	578.0834	pg/ml		100
T FOSA	8.525	497.9 -> 77.9	480	444.6120	pg/ml		100
T PFDS	8.538	599.0 -> 80.0	129	433.6952	pg/ml		100
T N-EtFOSAA	8.547	584.2 -> 419.0	196	691.4697	pg/ml	m	100
T PFUnA	8.548	563.1 -> 519.0	589	451.7216	pg/ml	m	100
T PFDoA	8.714	613.1 -> 569.0	927	525.6538	pg/ml	m	100
T PFTrDA	8.907	663.1 -> 619.0	1163	596.4716	pg/ml	m	100
T PFTA	9.125	713.1 -> 669.1	920	611.0691	pg/ml	m	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

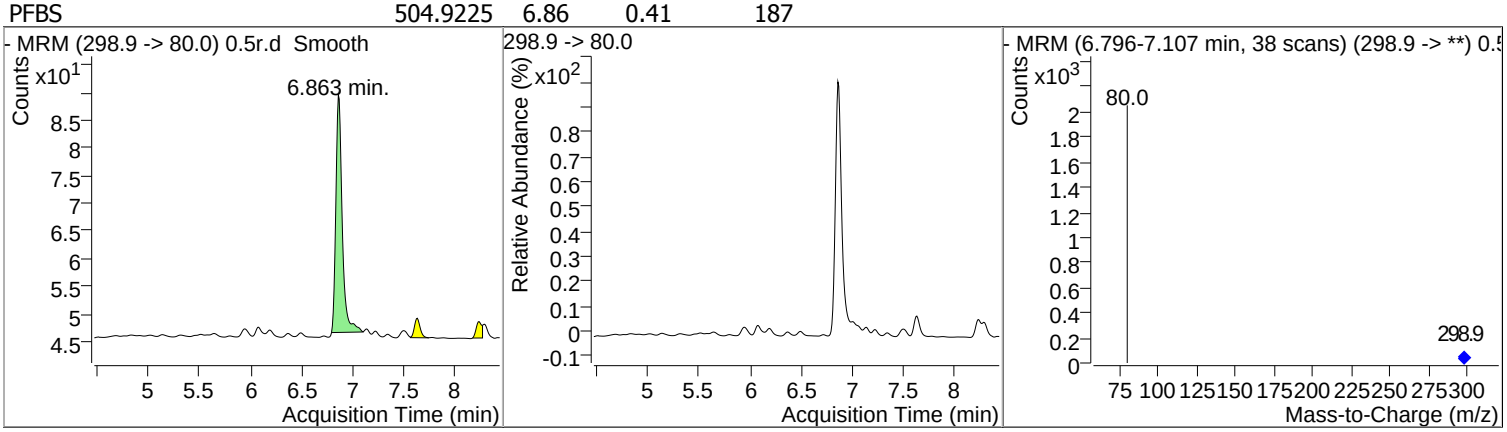
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	550.9486	2.21	0.04	405				



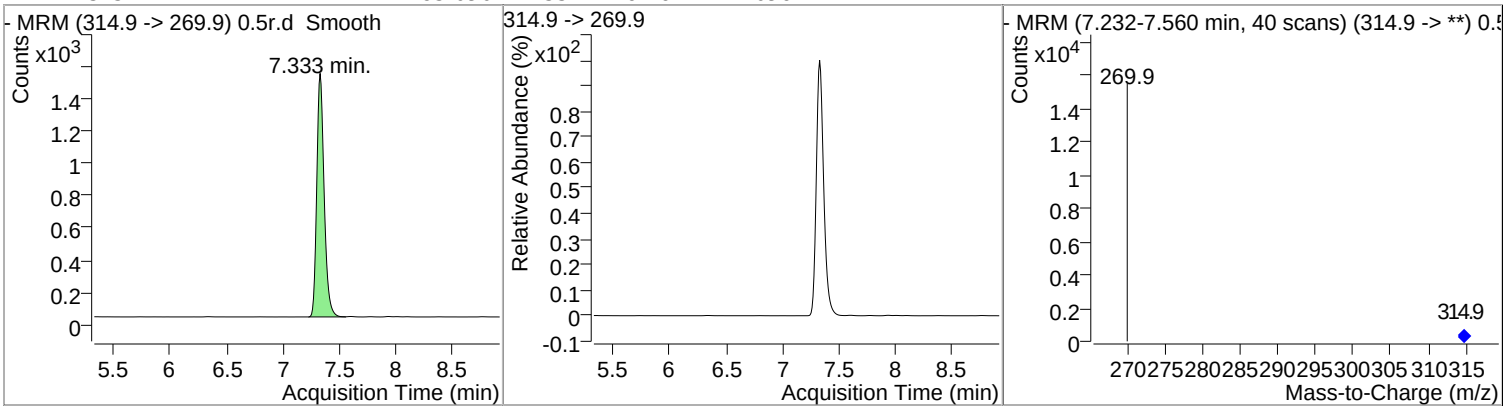
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	639.2307	6.50	0.39	591 (m)				



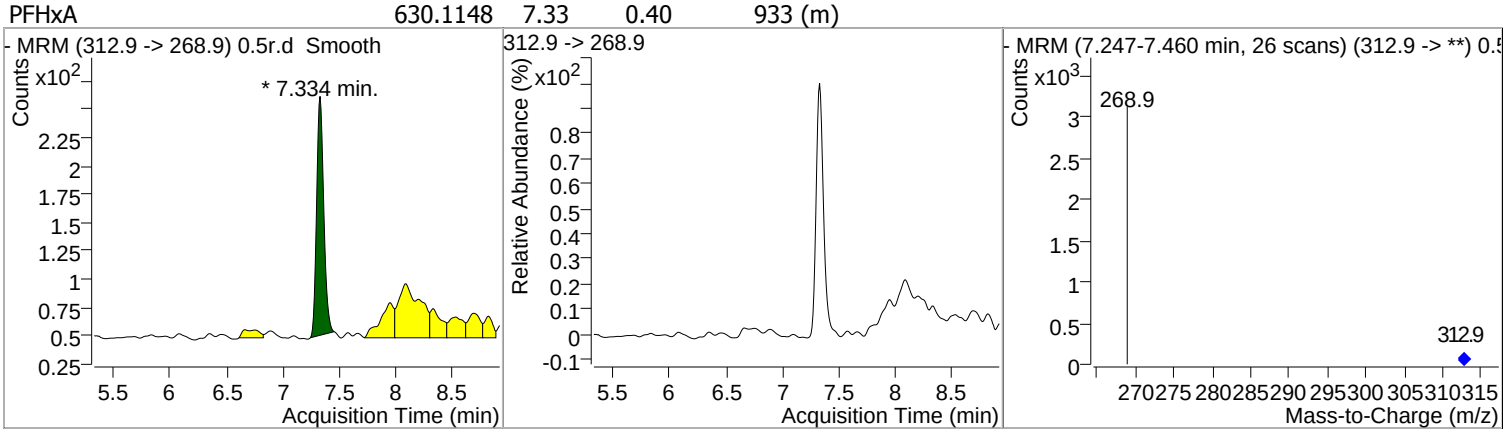
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	504.9225	6.86	0.41	187				



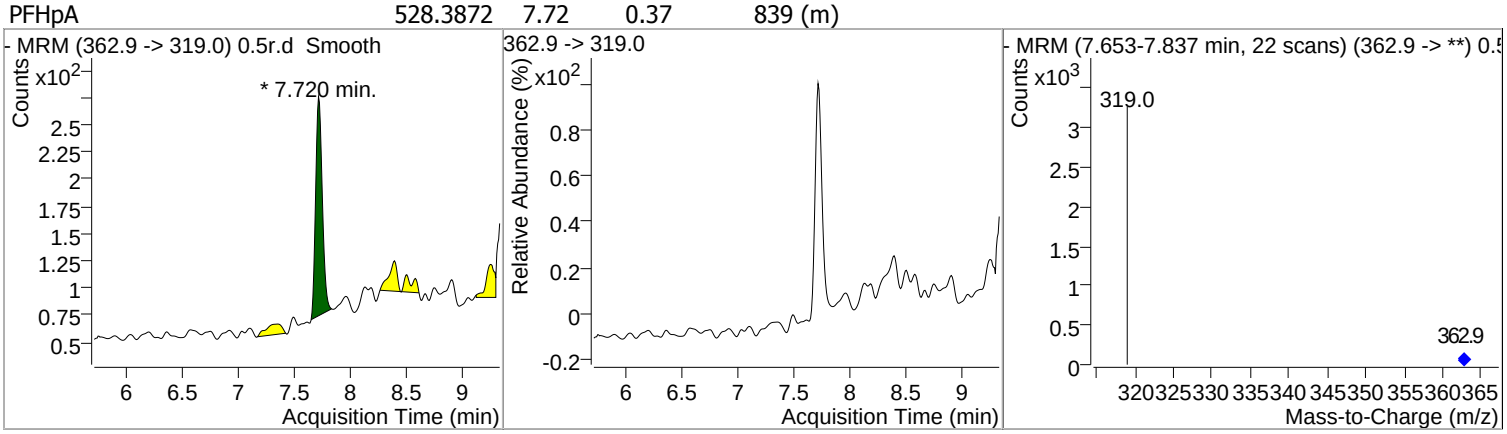
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	4283.6967	7.33	0.40	6902				



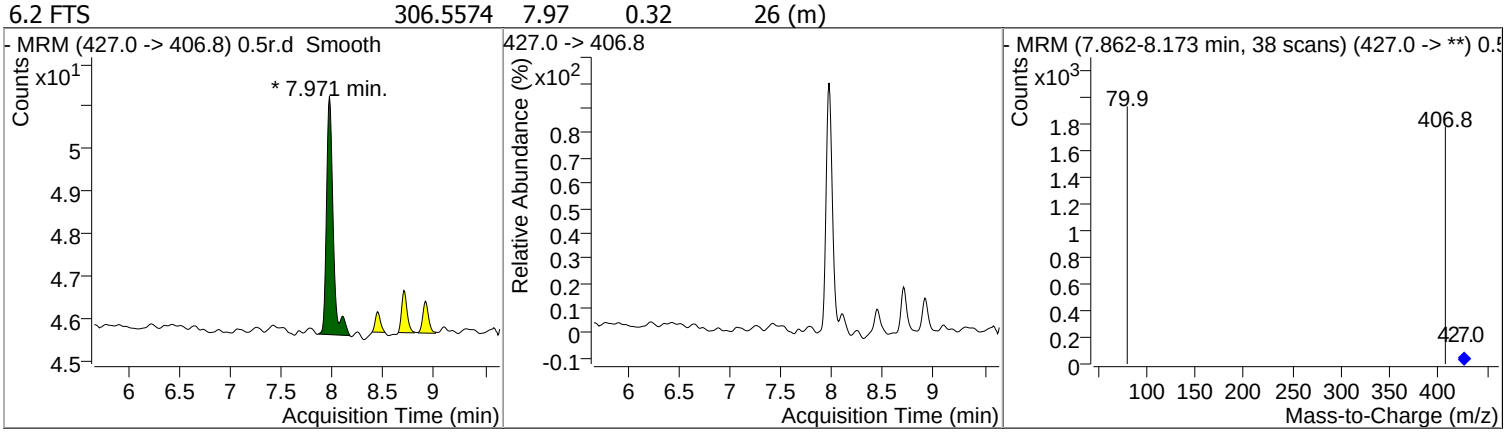
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	630.1148	7.33	0.40	933 (m)				



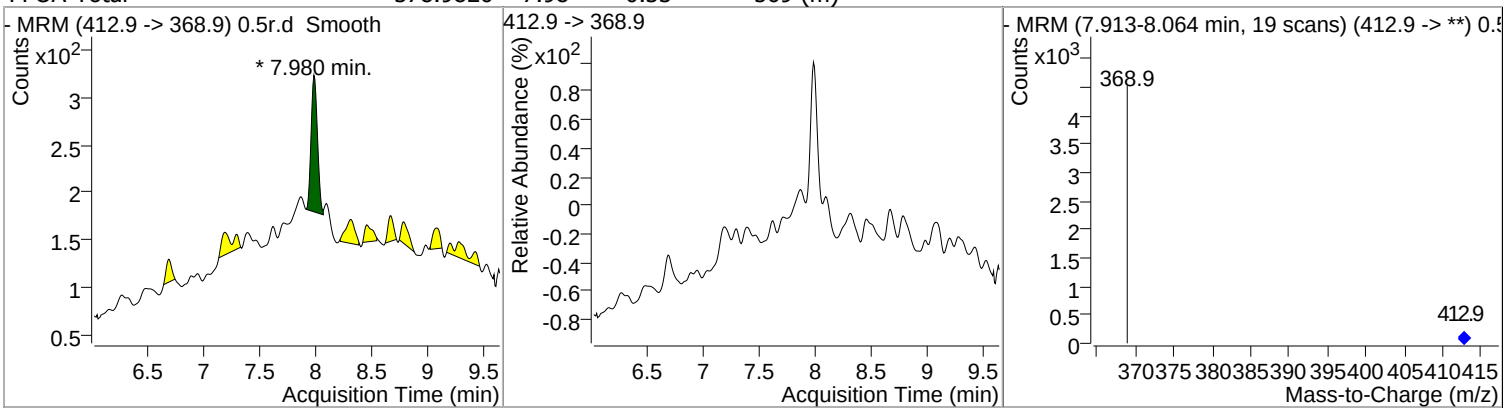
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	528.3872	7.72	0.37	839 (m)				



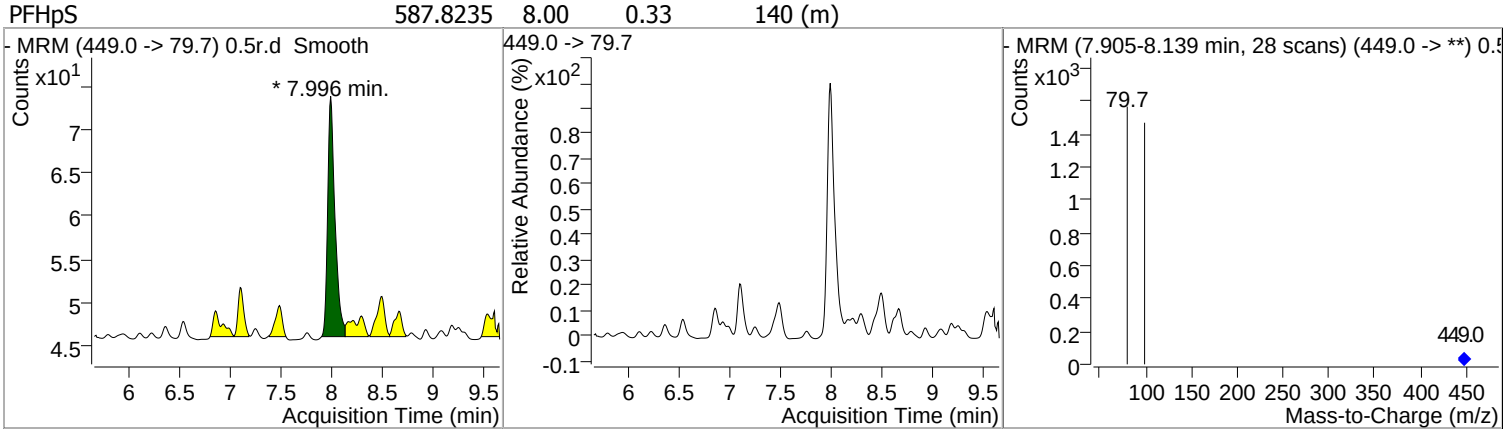
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	306.5574	7.97	0.32	26 (m)				



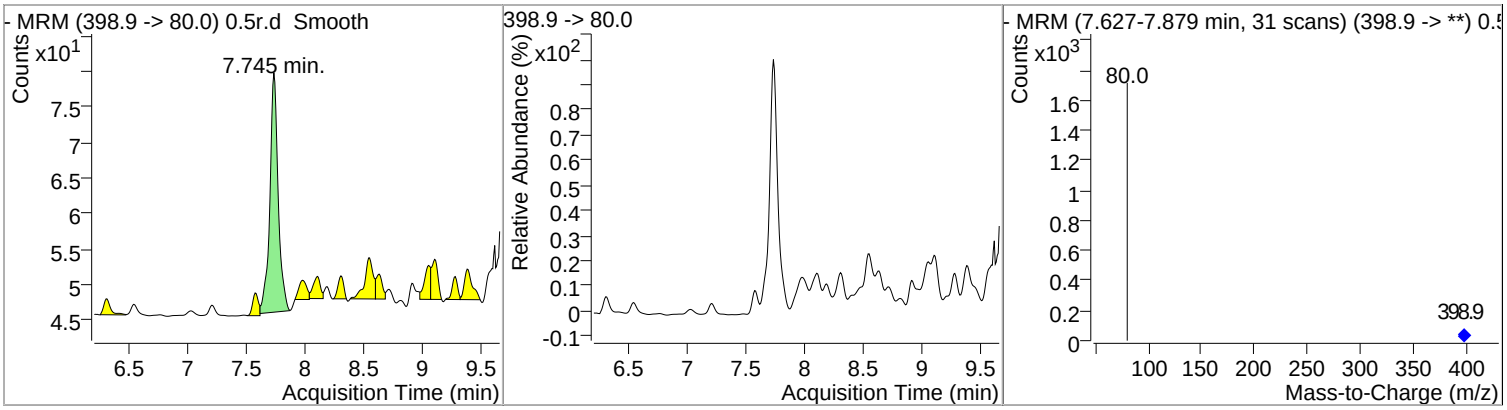
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	378.9826	7.98	0.33	569 (m)				



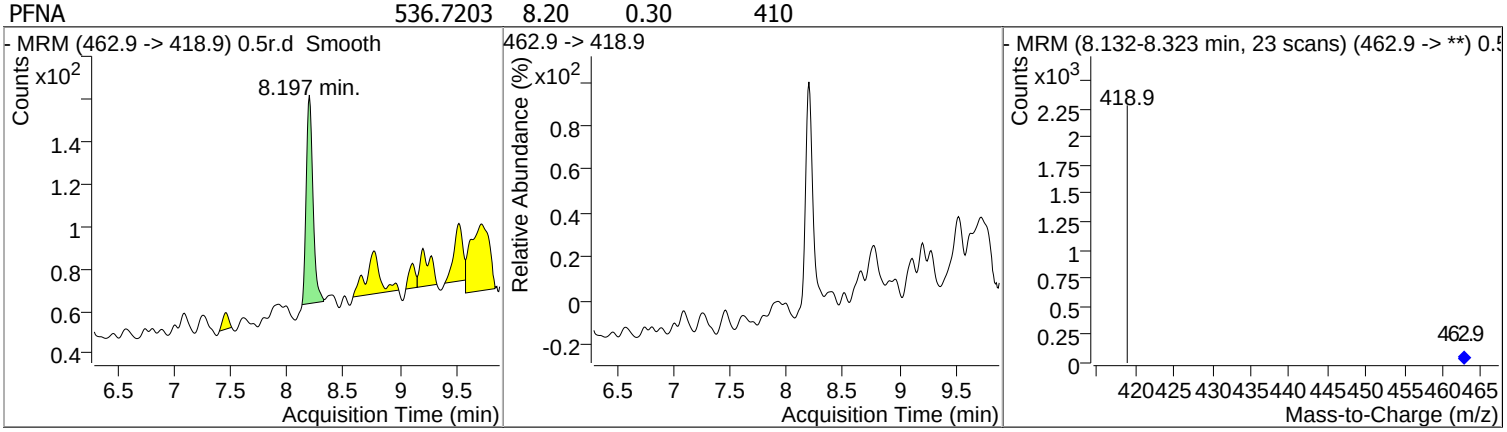
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	587.8235	8.00	0.33	140 (m)				



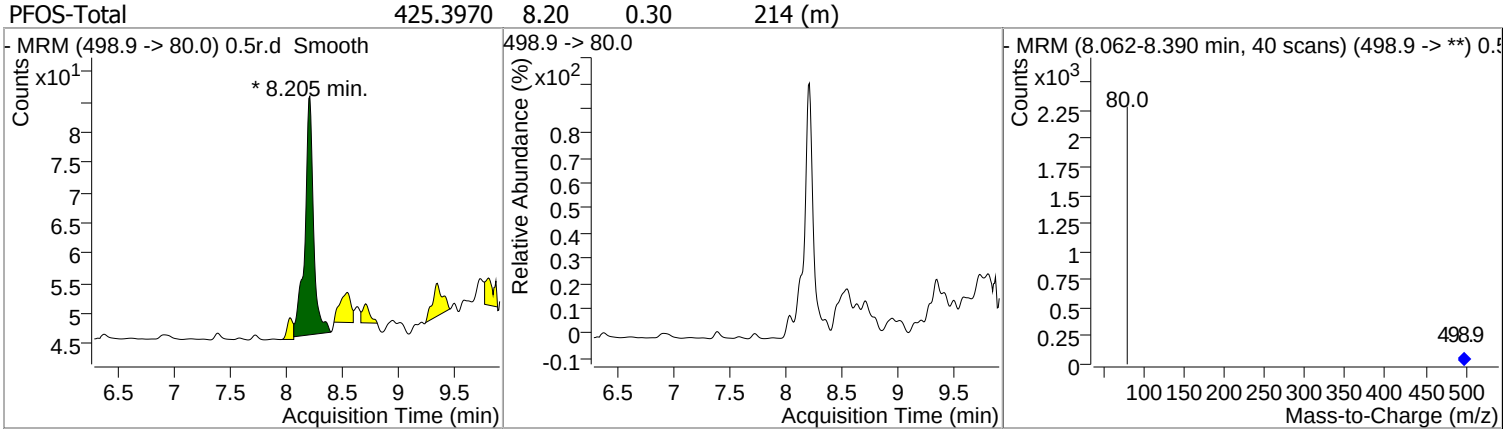
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	495.3621	7.74	0.07	167				



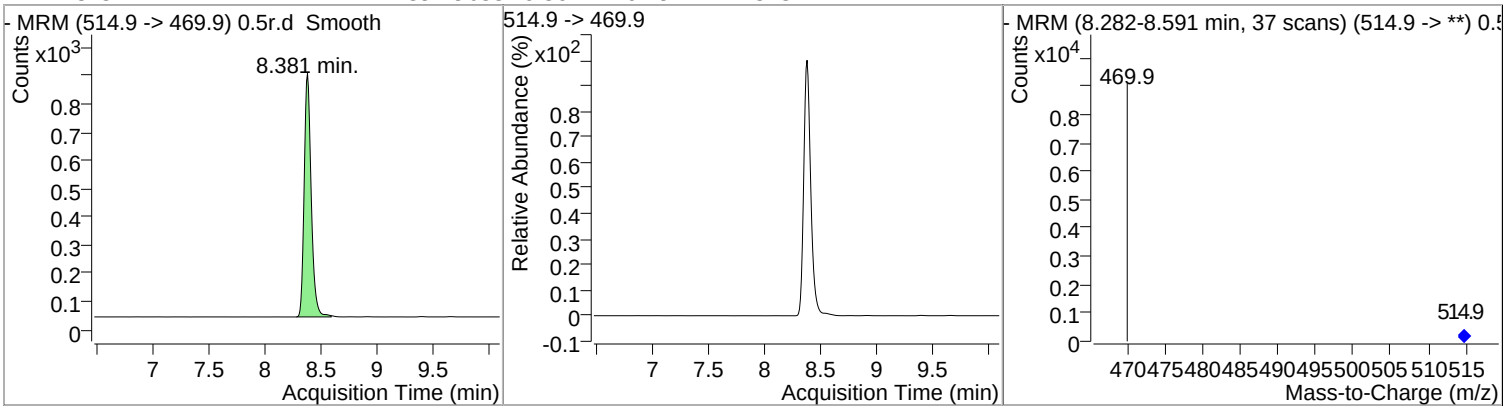
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	536.7203	8.20	0.30	410				



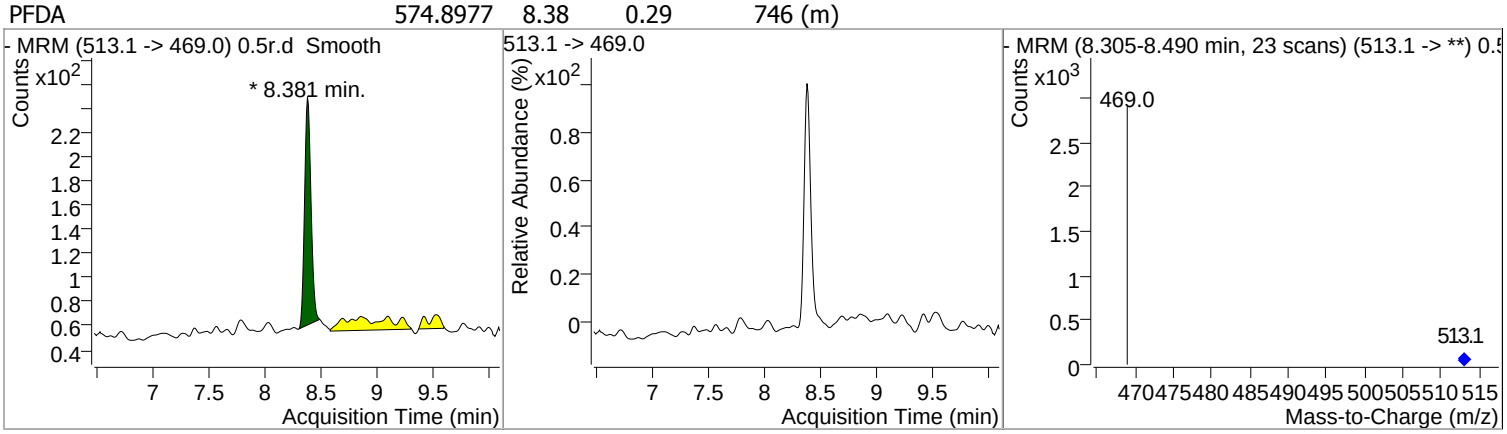
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	425.3970	8.20	0.30	214 (m)				



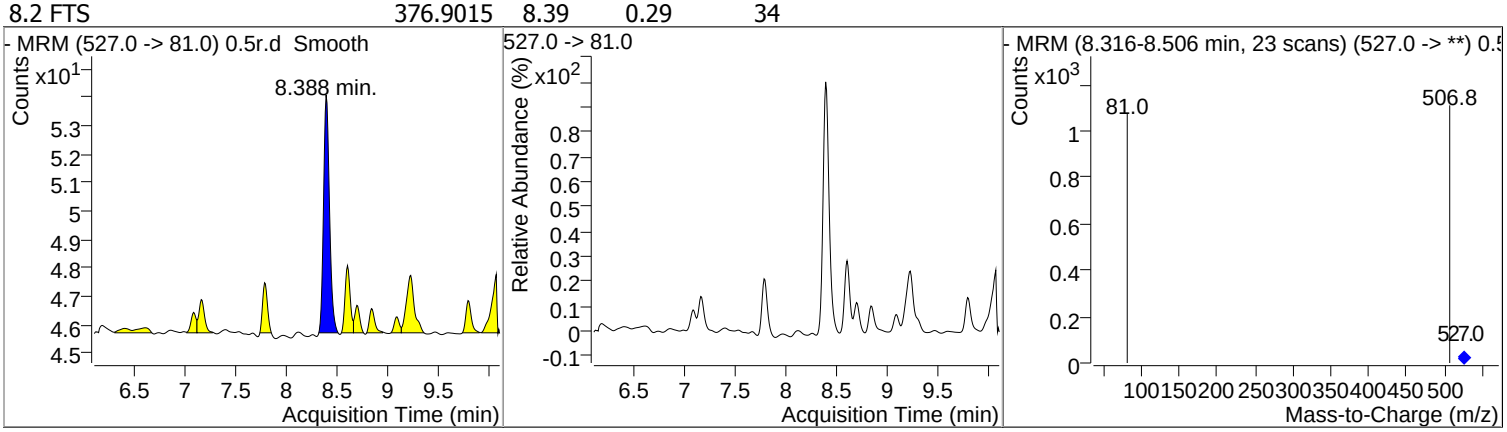
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	4392.9633	8.38	0.29	3731				



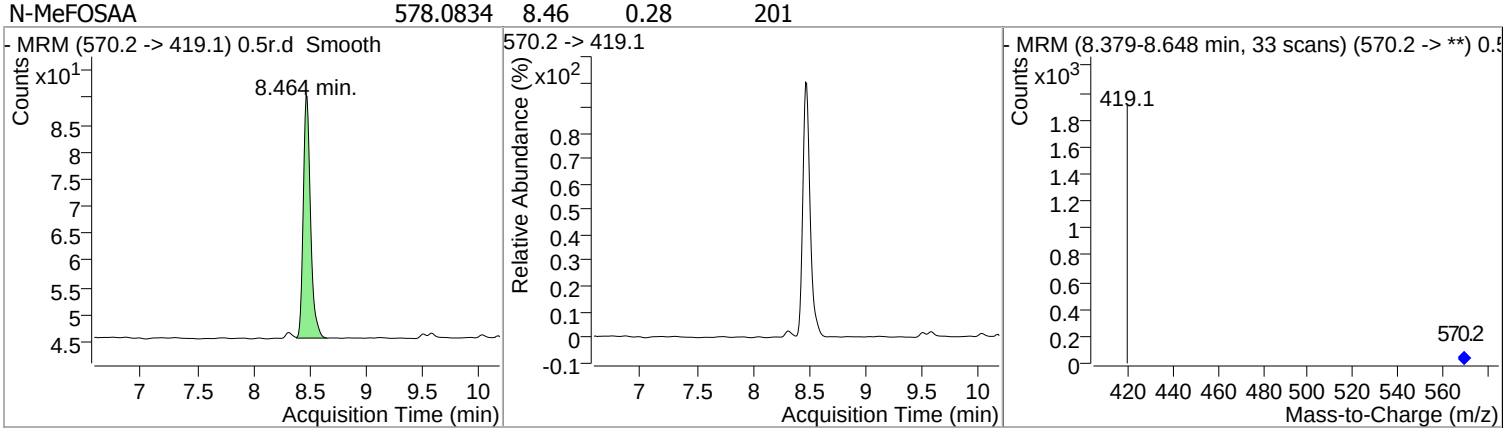
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	574.8977	8.38	0.29	746 (m)				



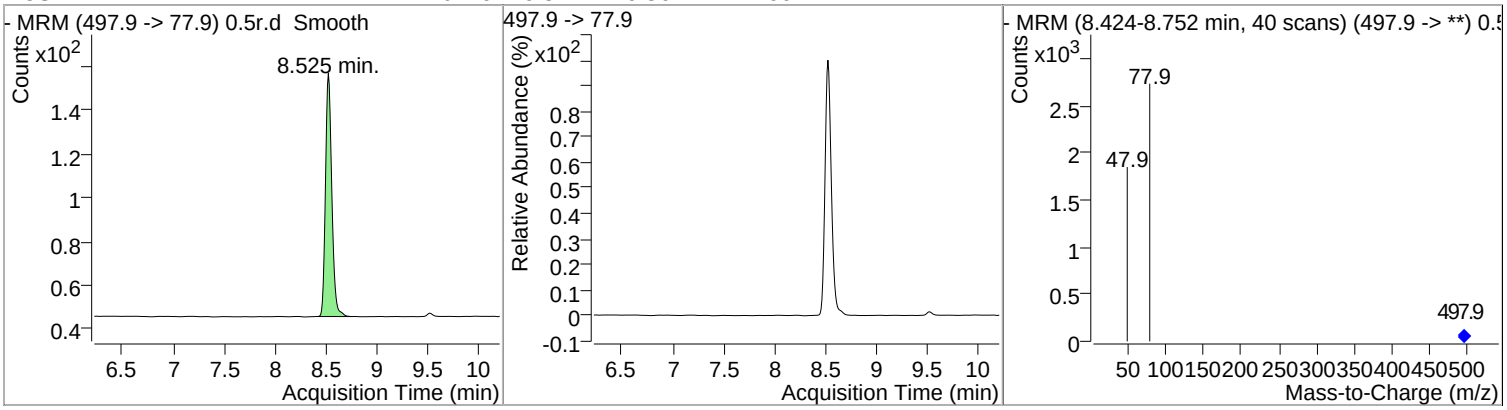
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	376.9015	8.39	0.29	34				



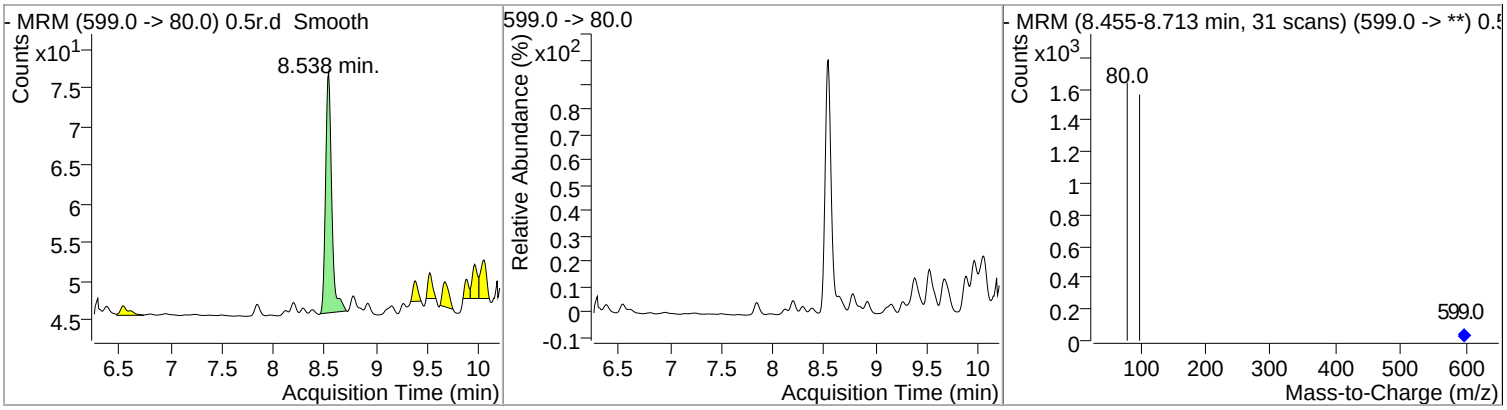
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	578.0834	8.46	0.28	201				



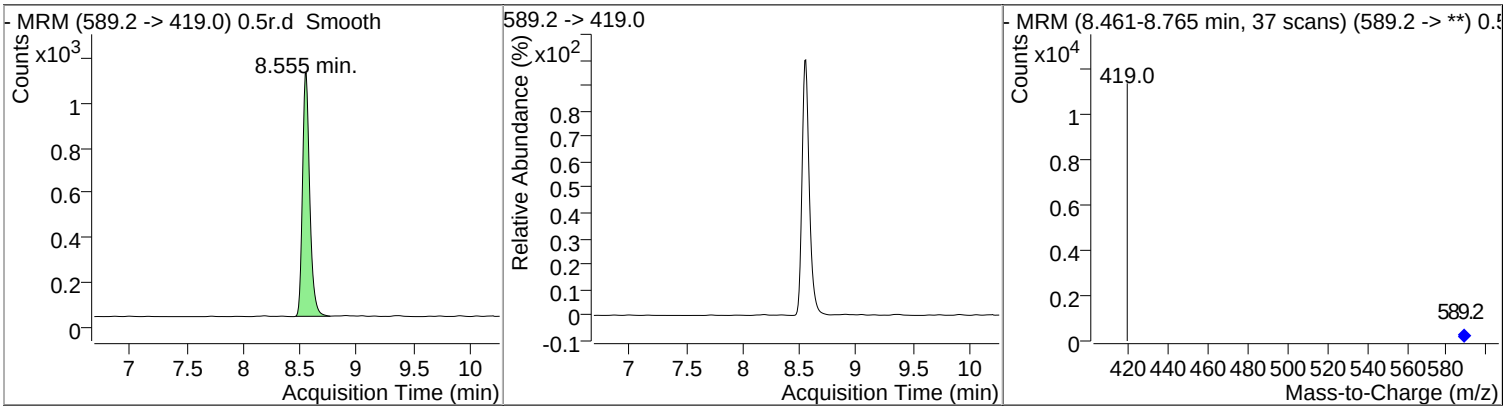
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	444.6120	8.52	0.30	480				



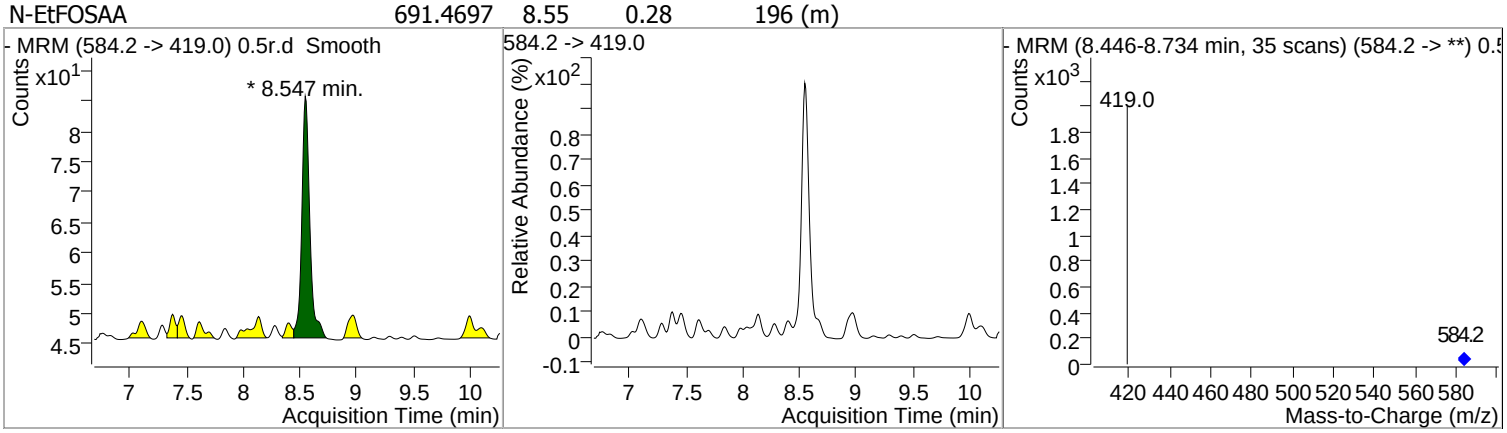
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	433.6952	8.54	0.28	129				



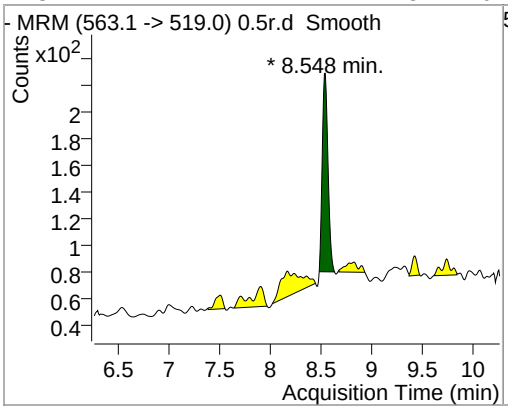
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	18117.5827	8.56	0.29	4833				

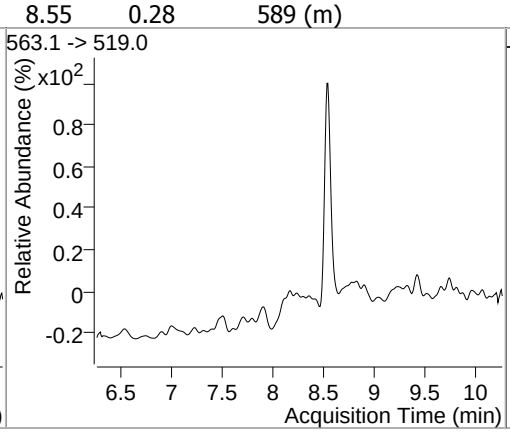


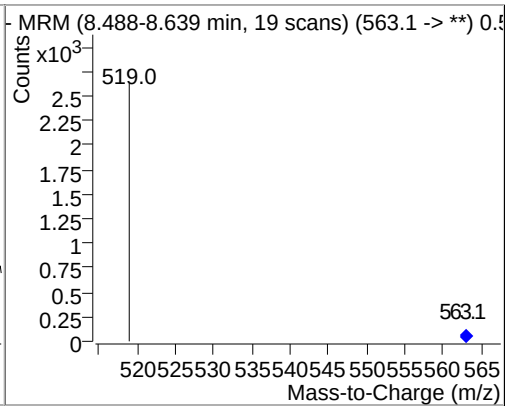
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	691.4697	8.55	0.28	196 (m)				



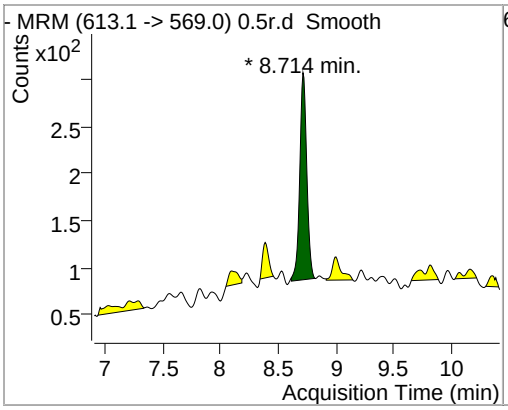
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	451.7216	8.55	0.28	589 (m)				

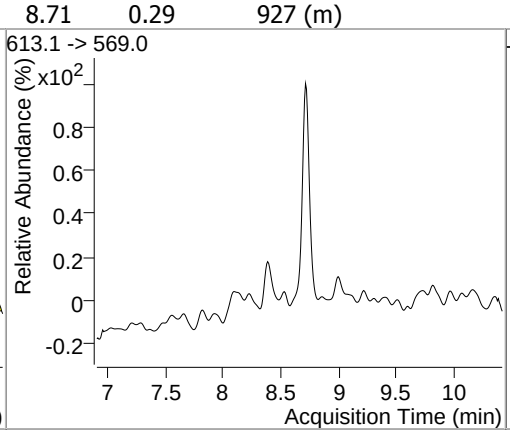


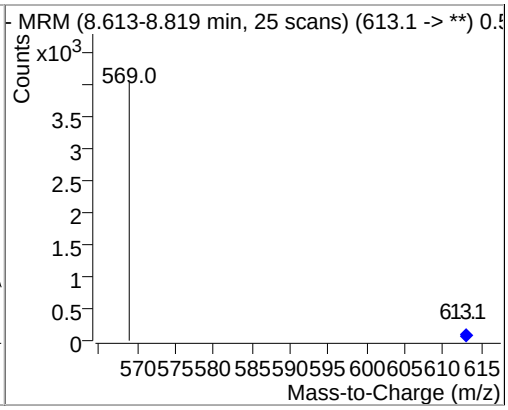




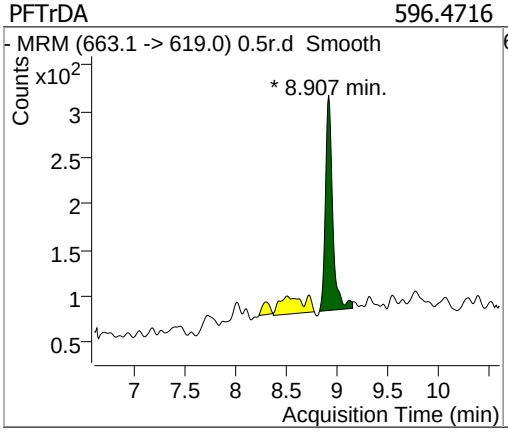
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	525.6538	8.71	0.29	927 (m)				

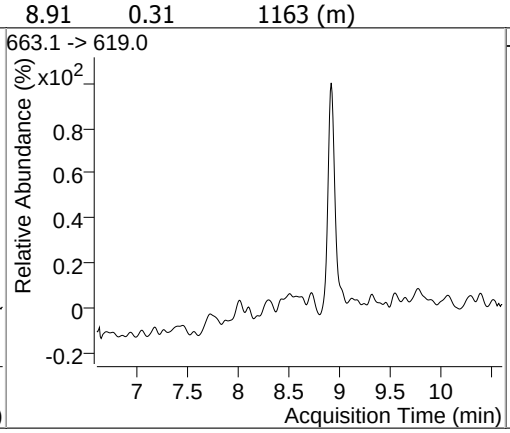


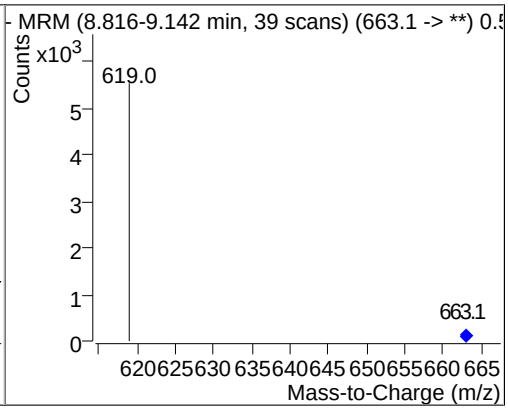




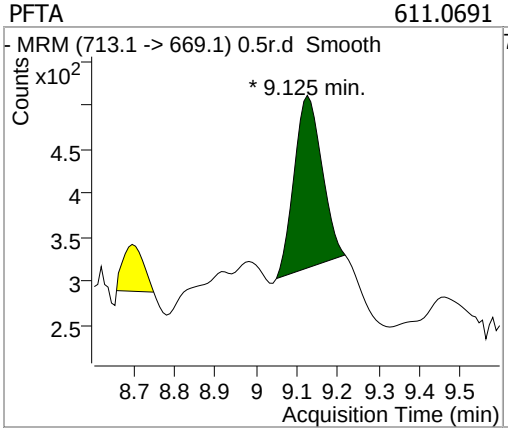
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	596.4716	8.91	0.31	1163 (m)				

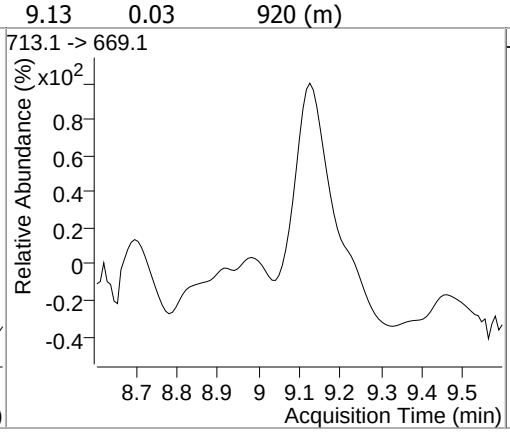


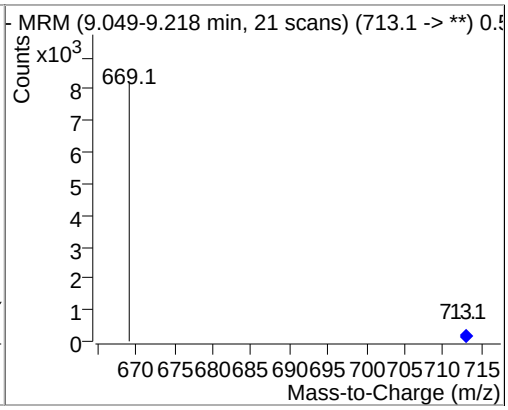




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	611.0691	9.13	0.03	920 (m)				







CONTINUING CALIBRATION VERIFICATION

SOP 434-PFAAS

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Instrument ID:	HPLC1	Calibration:	1800396
Lab File ID:	lims export files full-001	Calibration Date:	12/21/18 14:04
Sequence:	S030754	Injection Date:	12/27/18
Lab Sample ID:	S030754-CCV1	Injection Time:	10:28

		CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	442	474	1.000668	0.9948323		7.1	
Perfluorohexanoic acid (PFHxA)	A	500	608	1.164398	1.374629		21.7	
Perfluoroheptanoic acid (PFHpA)	A	500	559	1.191572	1.353752		11.7	
Perfluorobutanoic acid (PFBA)	A	500	633	0.5861229	0.7097198		26.5	
Perfluorodecanesulfonic acid (PFDS)	A	482	650	0.8090761	1.00813		34.9	
Perfluoroheptanesulfonic acid (PFHpS)	A	475	509	0.6355485	0.6414149		7.1	
Perfluorooctanesulfonamide (FOSA)	A	500	547	3.677559	3.875985		9.4	
Perfluoropentanoic acid (PFPeA)	A	500	734	0.7376181	1.035392		46.8	
6:2 Fluorotelomersulfonate (6:2 FTS)	A	475	470	0.2262803	0.2087485		-1.1	
8:2 Fluorotelomersulfonate (8:2 FTS)	A	480	677	0.241249	0.3188336		41.1	
Perfluorohexanesulfonic acid (PFHxS)	A	455	420	0.861231	0.7786261		-7.7	
Perfluorooctanoic acid (PFOA)	A	500	688	1.132236	1.576449		37.6	
Perfluorooctanesulfonic acid (PFOS)	A	462	474	1.289872	1.295879		2.7	
Perfluorononanoic acid (PFNA)	A	500	718	0.5484562	0.8359421		43.5	
Perfluorodecanoic acid (PFDA)	A	500	620	1.028946	1.228152		24.1	
NMeFOSAA	A	500	568	1.187294	1.297798		13.7	
Perfluoroundecanoic acid (PFUnA)	A	500	606	1.042169	1.205846		21.2	
NEtFOSAA	A	500	617	0.9982486	1.145795		23.3	
Perfluorododecanoic acid (PFDoA)	A	500	559	1.387868	1.505922		11.9	
Perfluorotridecanoic acid (PFTrDA)	A	500	546	1.509513	1.624591		9.2	
Perfluorotetradecanoic acid (PFTA)	A	500	594	1.192036	1.364058		18.8	

7 - FORM VII

CONTINUING CALIBRATION VERIFICATION

SOP 434-PFAAS

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Instrument ID:	HPLC1	Calibration:	1800396
Lab File ID:	lims export files full-001	Calibration Date:	12/21/18 14:04
Sequence:	S030754	Injection Date:	12/27/18
Lab Sample ID:	S030754-CCV1	Injection Time:	10:28

		CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
13C-PFHxA	A	10000	12300	1.254614	1.506467		22.5	
13C-PFDA	A	10000	11200	0.6518741	0.7254736		12.0	
d5-NEtFOSAA	A	40000	43500	0.9065465	0.9510936		8.7	

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

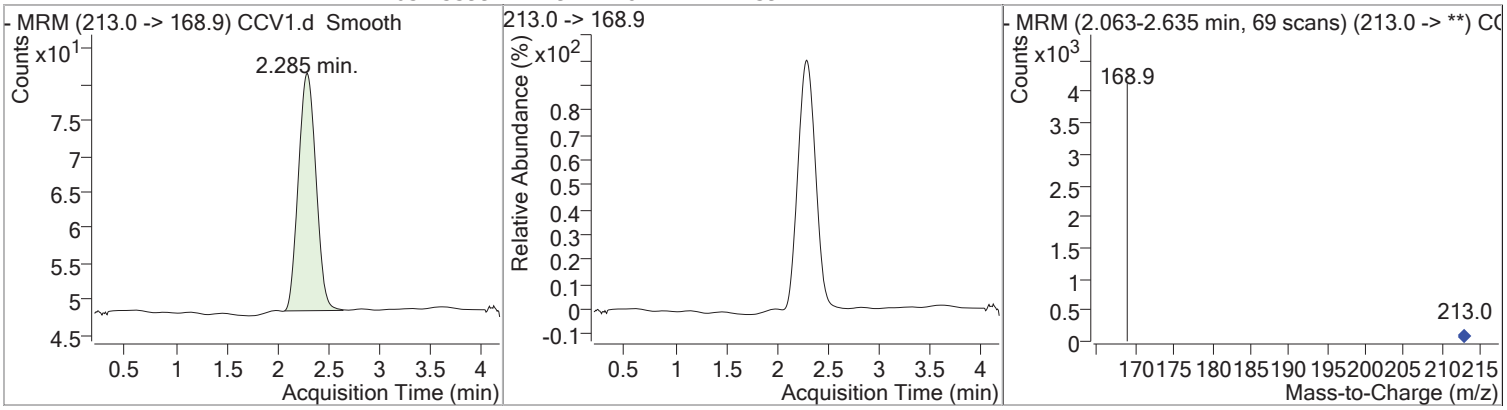
* Values outside of QC limits

Data File	CCV1.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/27/2018 10:28:28 AM
Sample Name	CCV1	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File	122018.m	Comment	
Tune File		Tune Date	
Batch Name	1.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

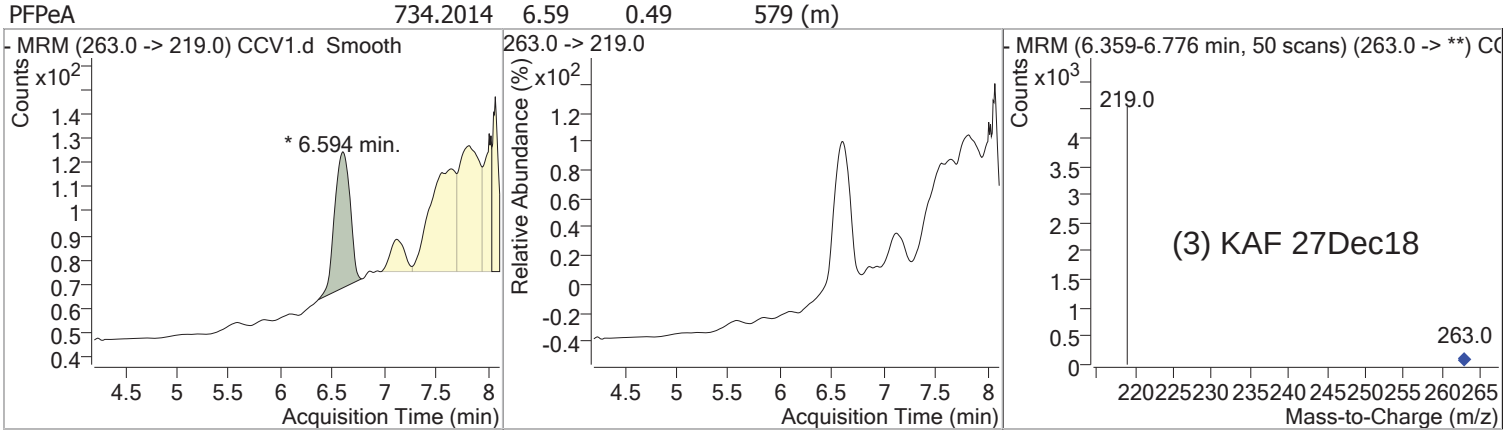
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	7.896	416.9 -> 371.9	11181	10000.0000	pg/ml		0.245
M PFOS C13	8.078	502.9 -> 80.0	10125	28700.0000	pg/ml		0.178
M d3-N-MeFOSAA	8.312	573.2 -> 419.0	9767	40000.0000	pg/ml		0.128
System Monitoring Compounds							
S PFHxA C13	7.342	314.9 -> 269.9	16844	12254.5826	pg/ml		0.404
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 122.55%			
S PFDA C13	8.238	514.9 -> 469.9	8111	11196.1776	pg/ml		0.144
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 111.96%			
S d5-N-MeFOSAA	8.379	589.2 -> 419.0	9289	43477.6391	pg/ml		0.111
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 108.69%			
Target Compounds							QValue
T PFBA	2.285	213.0 -> 168.9	397	632.5399	pg/ml		100
T PFPeA	6.594	263.0 -> 219.0	579	734.2014	pg/ml	m	100
T PFBS	6.913	298.9 -> 80.0	155	473.5020	pg/ml	m	100
T PFHxA	7.342	312.9 -> 268.9	768	608.4217	pg/ml		100
T PFHpA	7.669	362.9 -> 319.0	757	558.6035	pg/ml	m	100
T 6.2 FTS	7.895	427.0 -> 406.8	35	469.6388	pg/ml		100
T PFOA-Total	7.896	412.9 -> 368.9	881	687.8835	pg/ml	m	100
T PFHpS	7.903	449.0 -> 79.7	107	508.8730	pg/ml	m	100
T PFHxS-Total	7.686	398.9 -> 80.0	125	420.1331	pg/ml		100
T PFNA	8.079	462.9 -> 418.9	467	717.7233	pg/ml	m	100
T PFOS-Total	8.079	498.9 -> 80.0	211	474.4524	pg/ml		100
T PFDA	8.238	513.1 -> 469.0	687	620.3540	pg/ml		100
T 8.2 FTS	8.229	527.0 -> 81.0	54	677.1840	pg/ml		100
T N-MeFOSAA	8.304	570.2 -> 419.1	158	568.4635	pg/ml		100
T FOSA	8.365	497.9 -> 77.9	473	546.8479	pg/ml		100
T PFDS	8.361	599.0 -> 80.0	171	650.1949	pg/ml		100
T N-EtFOSAA	8.371	584.2 -> 419.0	140	616.6523	pg/ml	m	100
T PFUnA	8.371	563.1 -> 519.0	674	605.9531	pg/ml	m	100
T PFDoA	8.496	613.1 -> 569.0	842	559.3608	pg/ml		100
T PFTrDA	8.613	663.1 -> 619.0	908	545.8710	pg/ml		100
T PFTA	8.747	713.1 -> 669.1	763	593.8701	pg/ml		100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

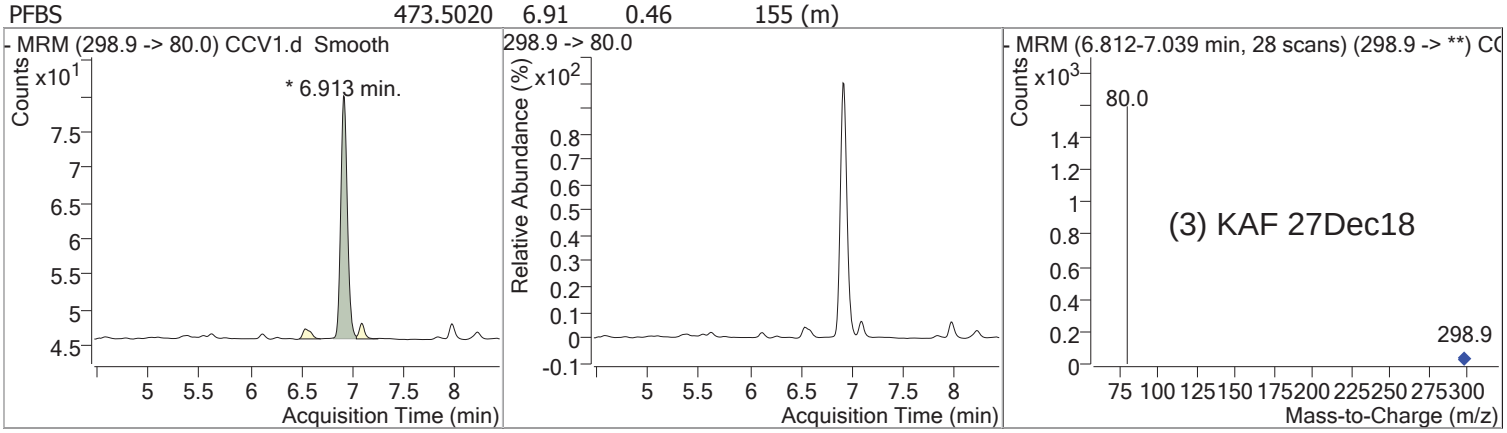
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	632.5399	2.29	0.11	397				



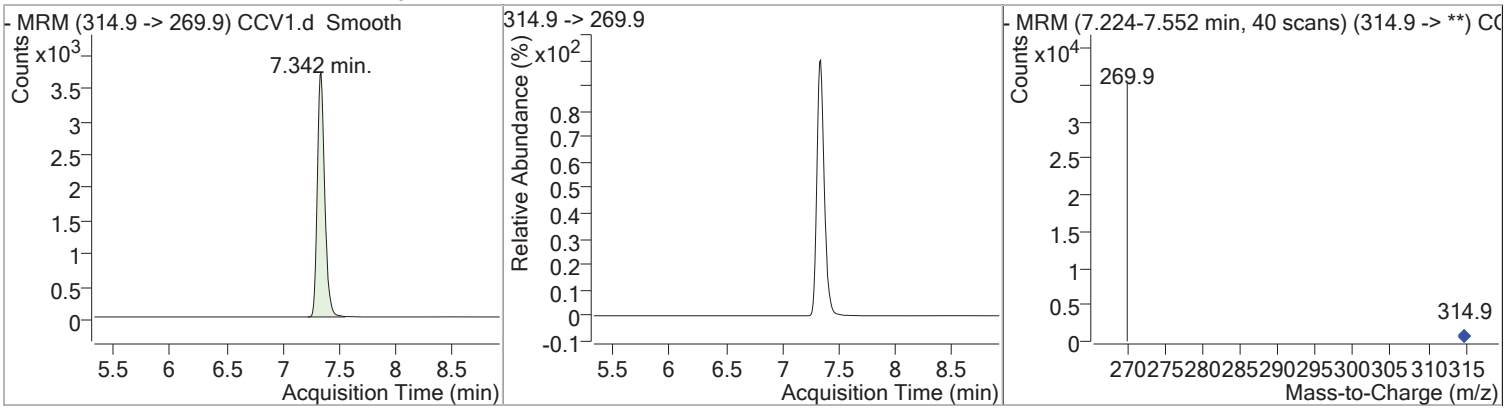
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	734.2014	6.59	0.49	579 (m)				



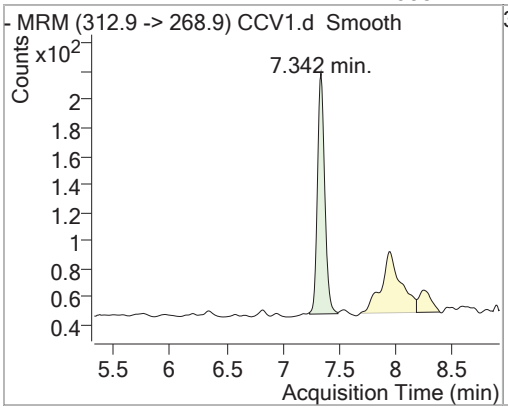
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	473.5020	6.91	0.46	155 (m)				

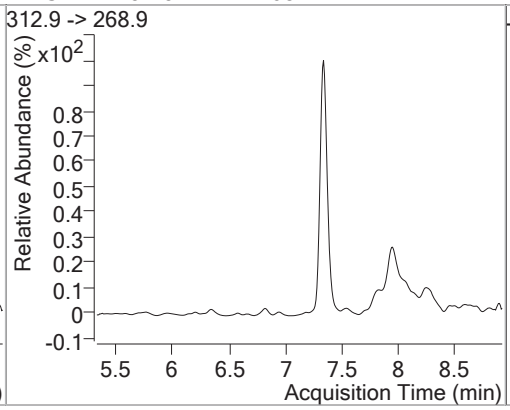


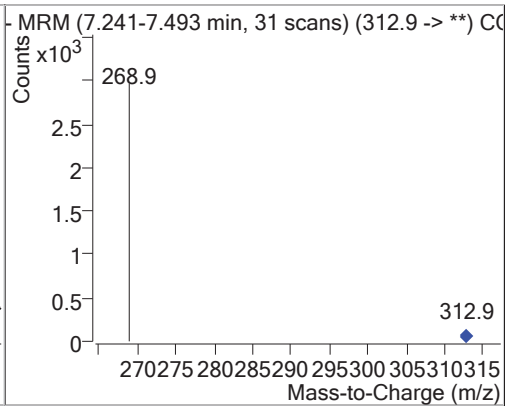
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	12254.5826	7.34	0.40	16844				



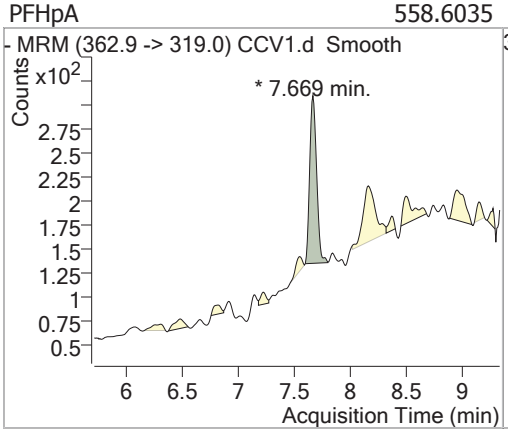
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	608.4217	7.34	0.40	768				

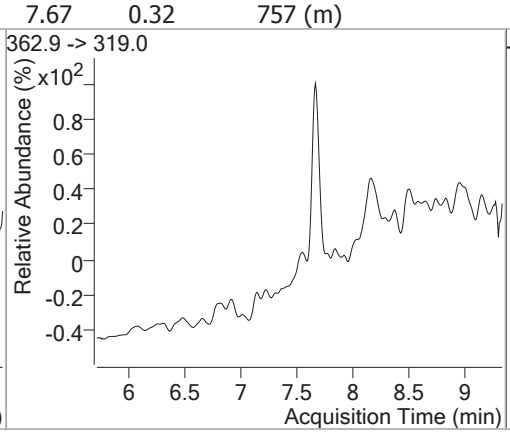


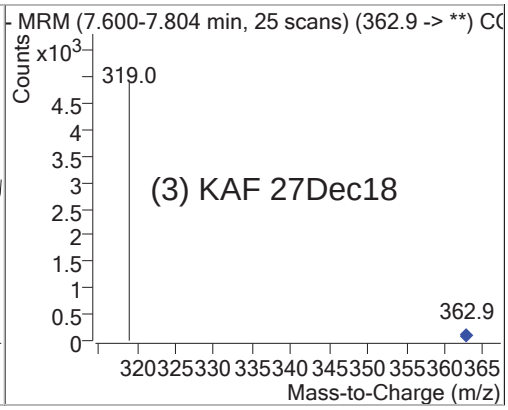




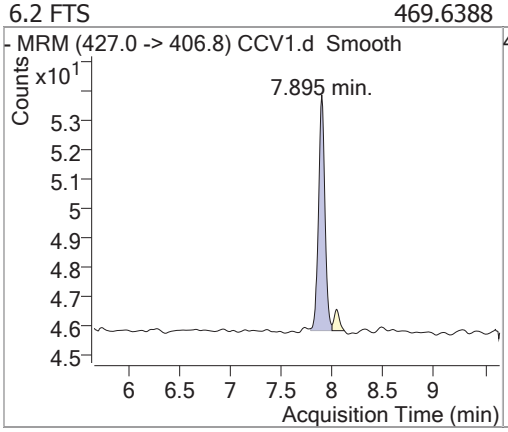
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	558.6035	7.67	0.32	757 (m)				

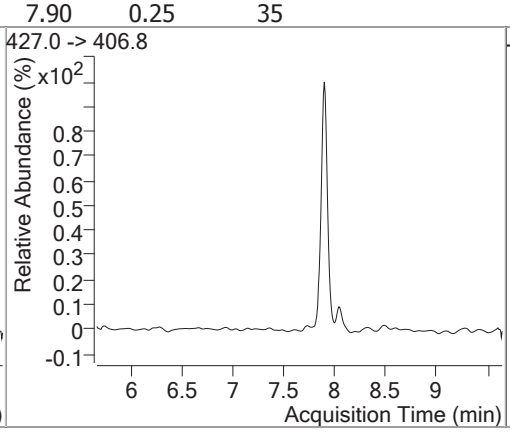


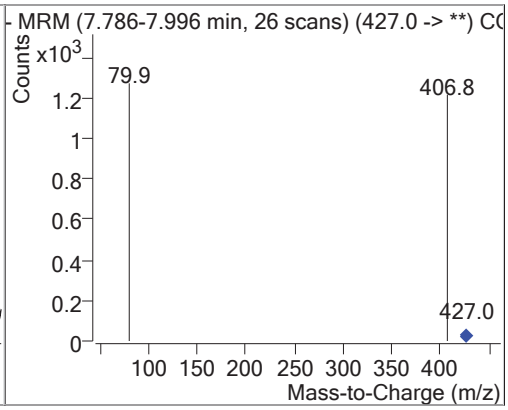




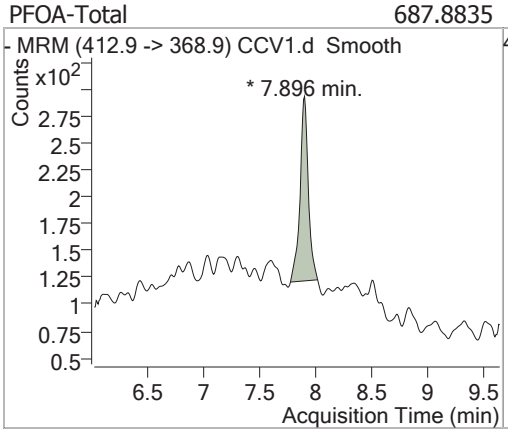
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	469.6388	7.90	0.25	35				

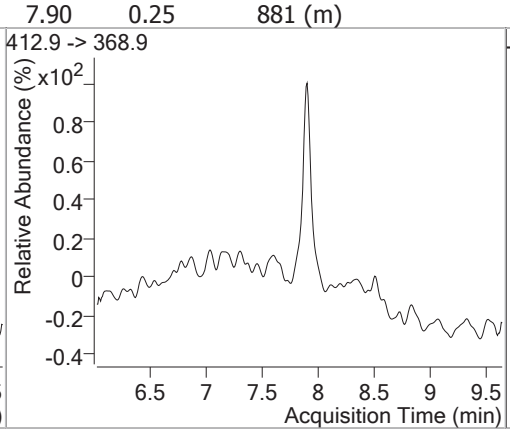


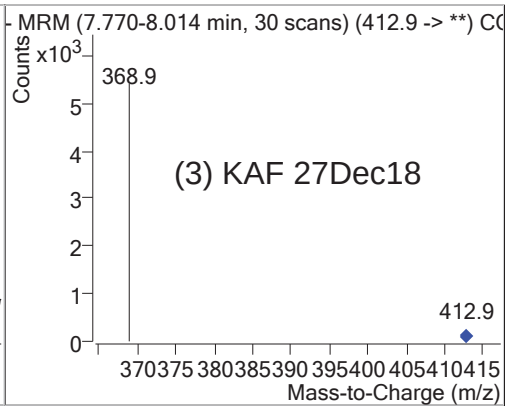




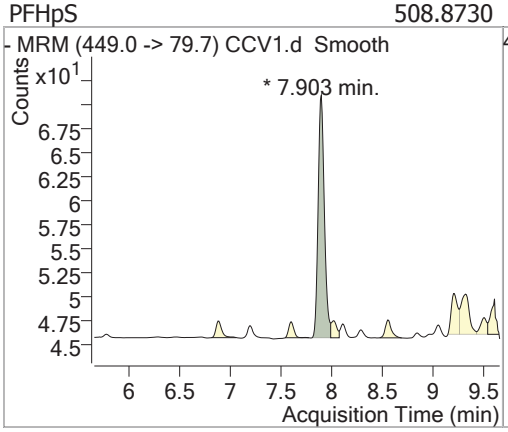
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	687.8835	7.90	0.25	881 (m)				

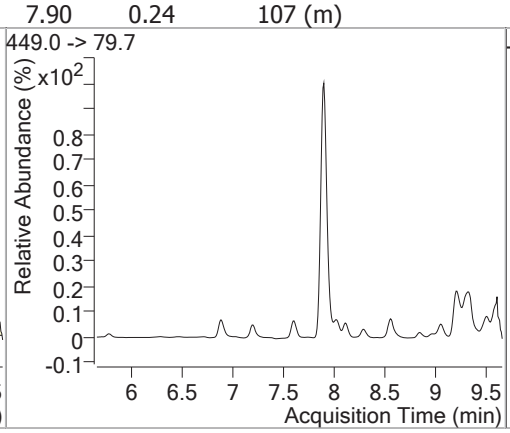


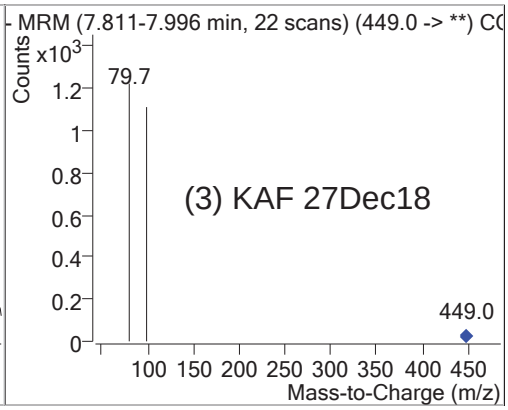




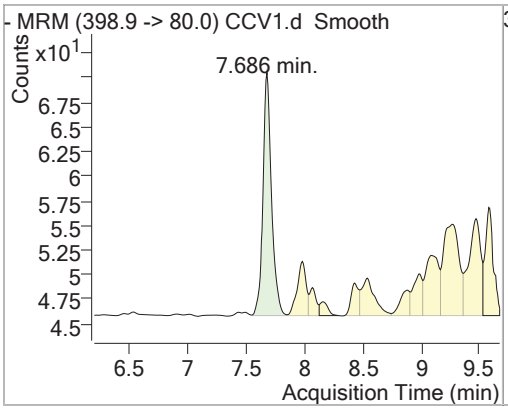
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	508.8730	7.90	0.24	107 (m)				

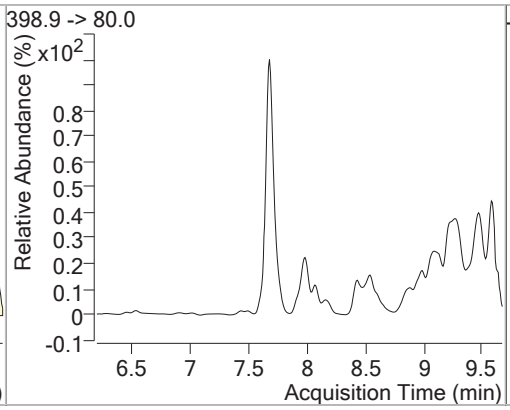


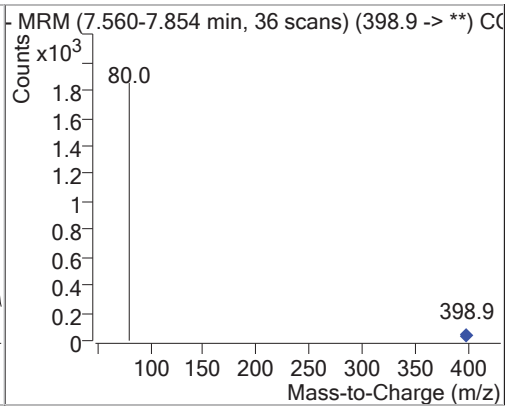




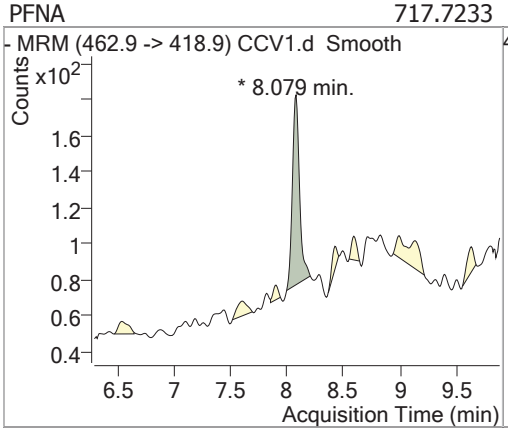
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	420.1331	7.69	0.01	125				

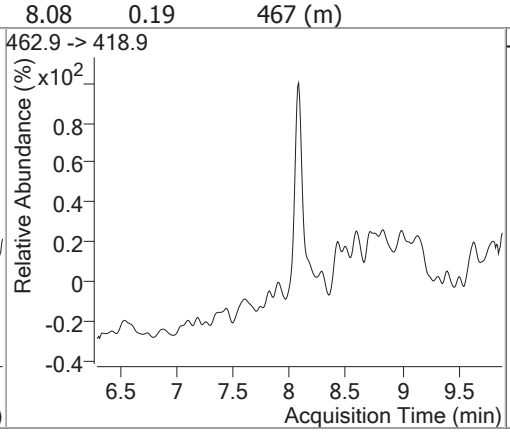


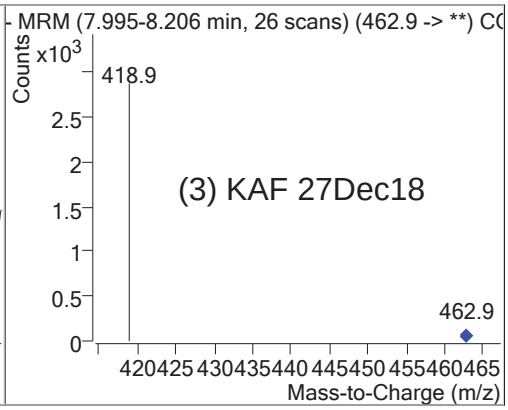




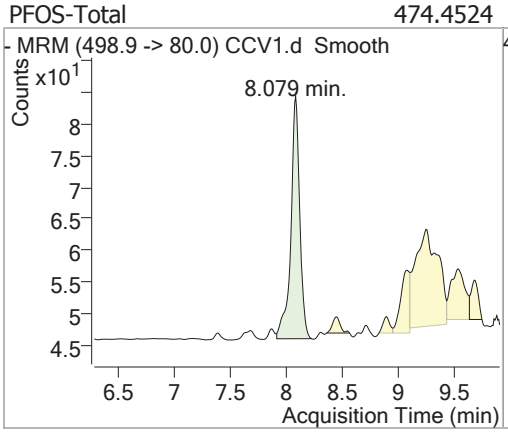
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	717.7233	8.08	0.19	467 (m)				

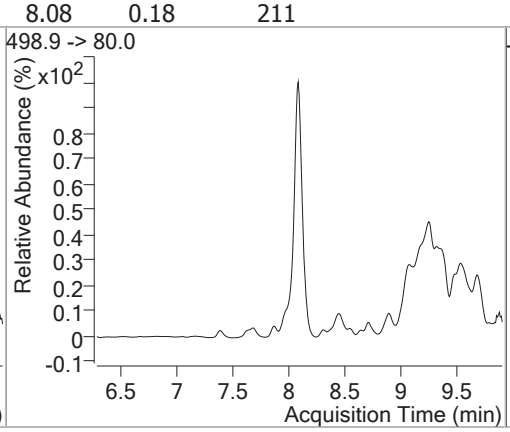


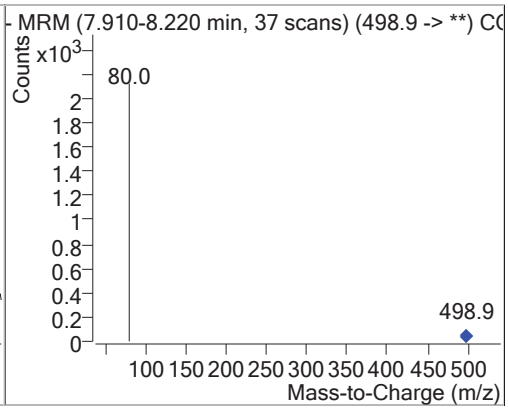




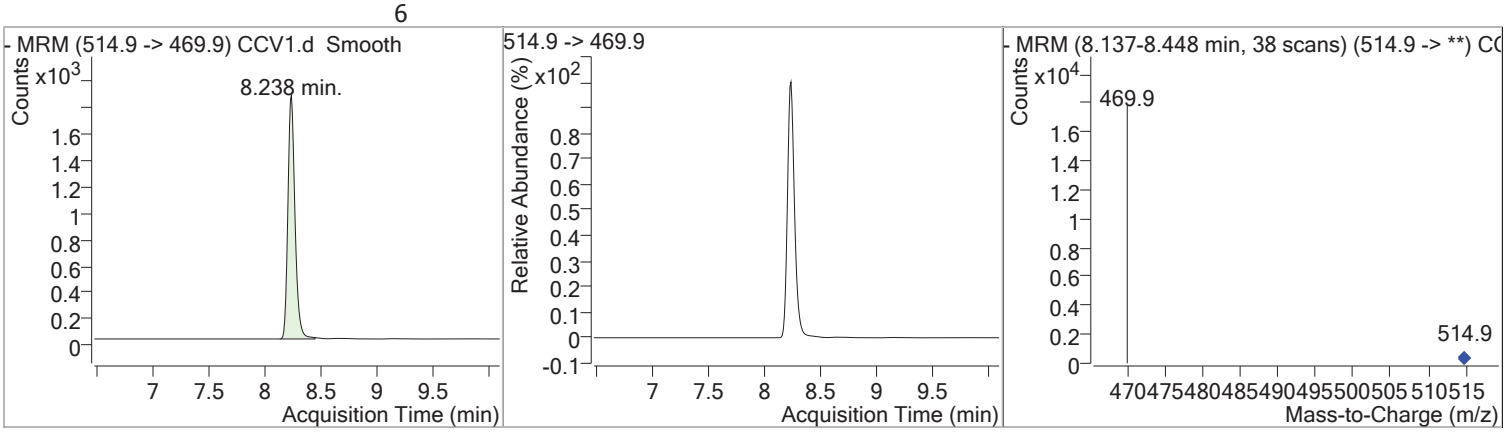
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	474.4524	8.08	0.18	211				



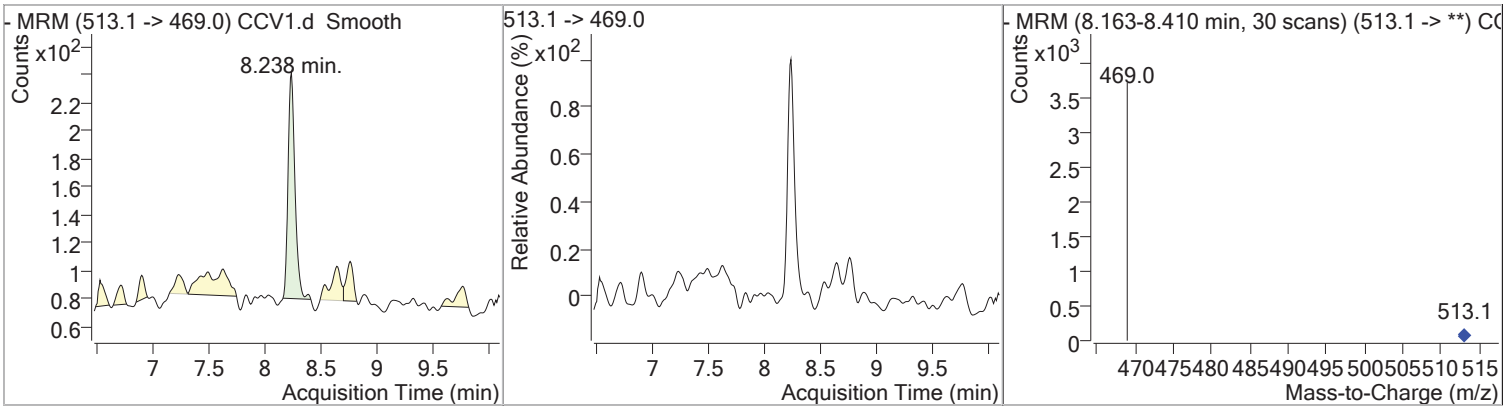




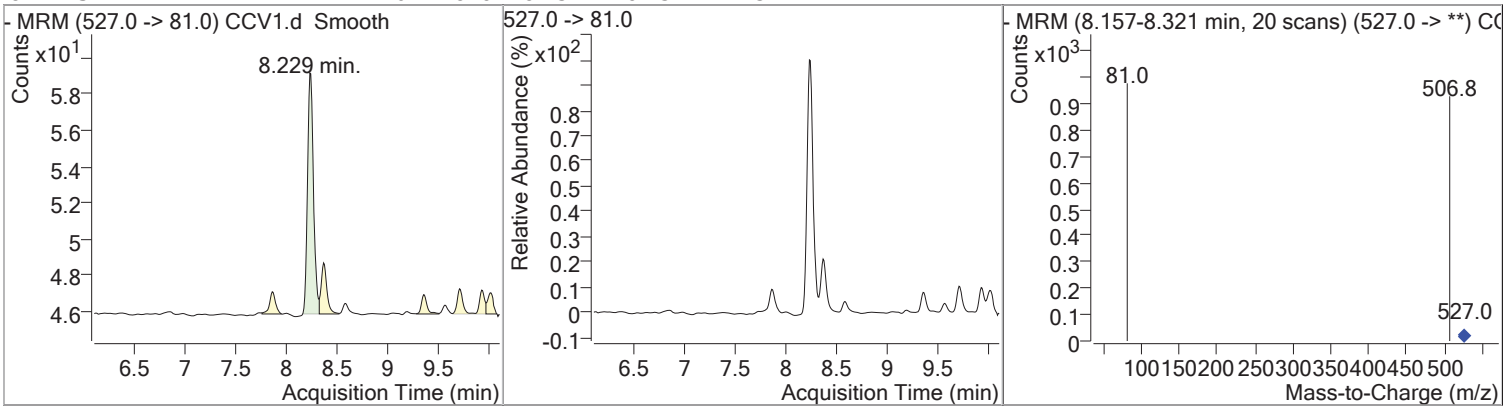
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	11196.1776	8.24	0.14	8111				



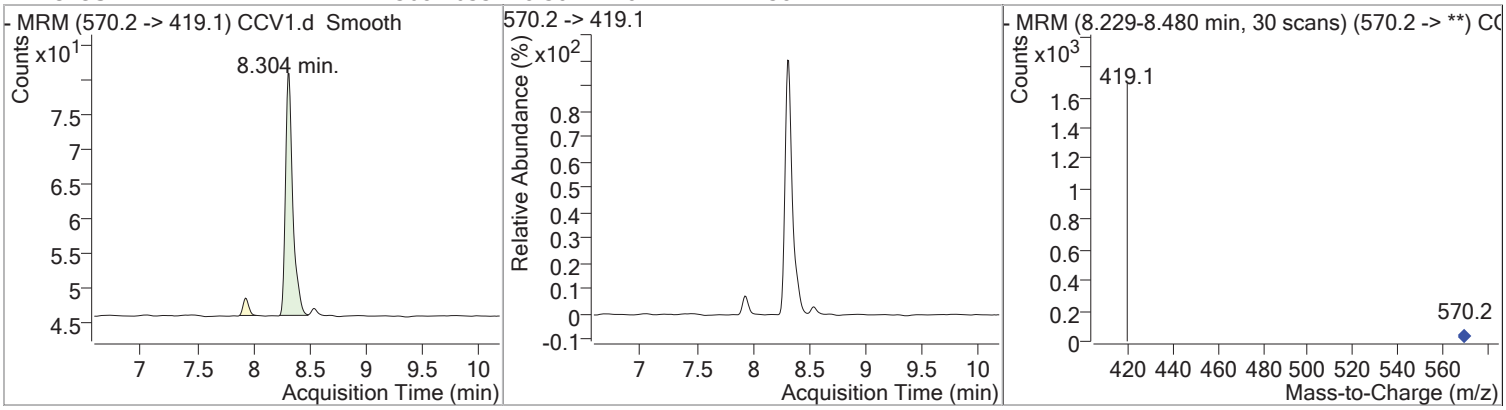
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	620.3540	8.24	0.14	687				



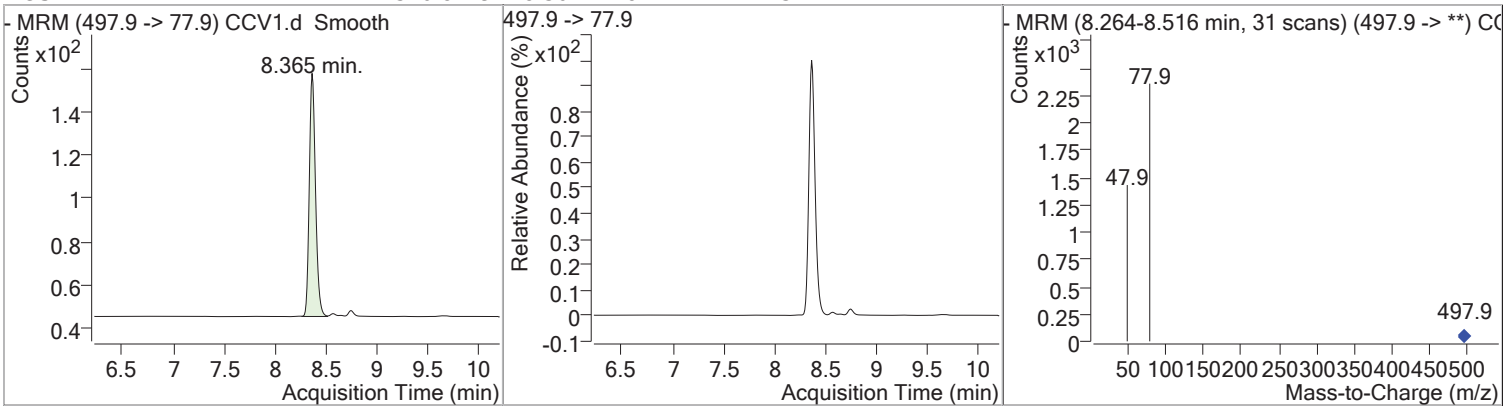
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	677.1840	8.23	0.13	54				



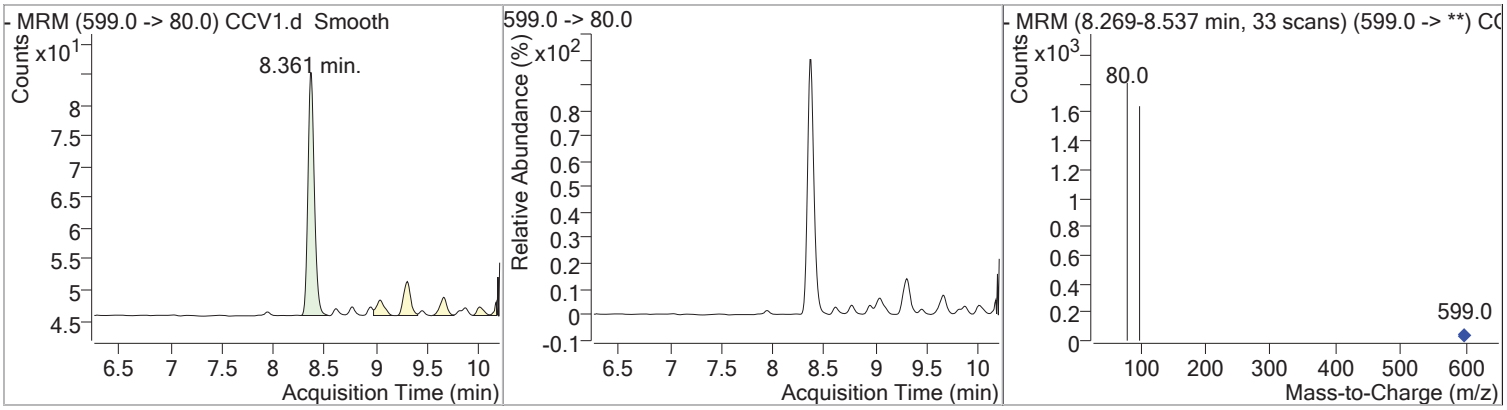
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	568.4635	8.30	0.12	158				



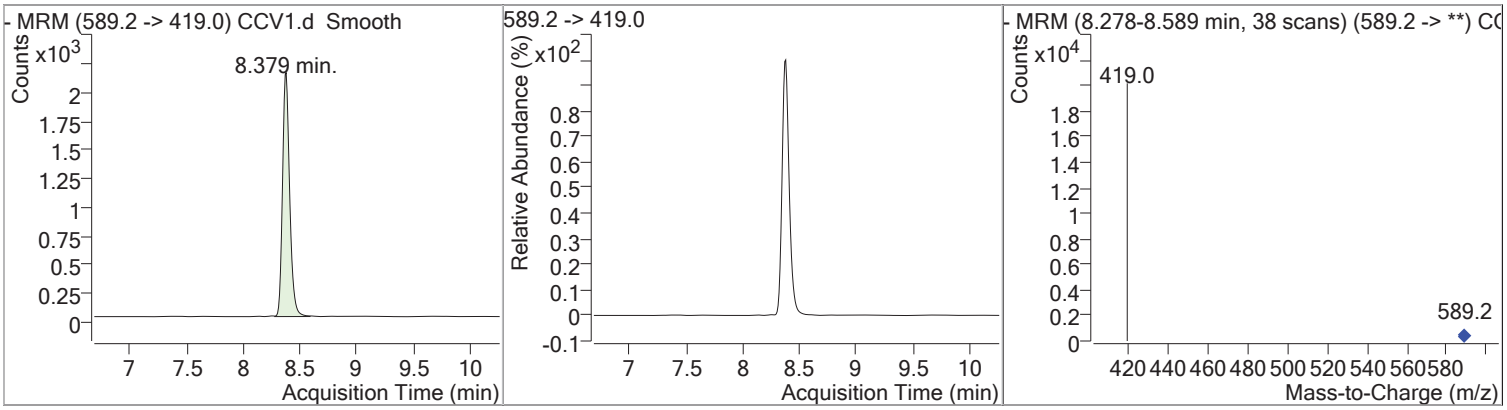
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	546.8479	8.36	0.14	473				



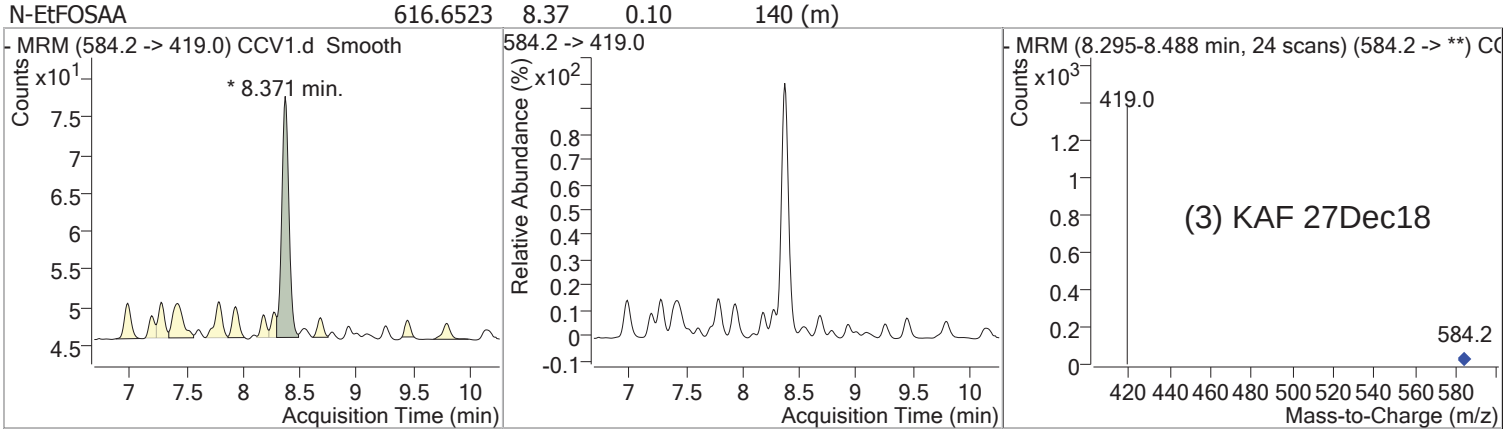
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	650.1949	8.36	0.10	171				



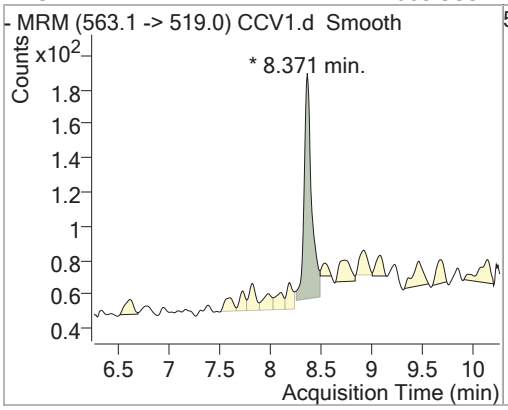
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	43477.6391	8.38	0.11	9289				

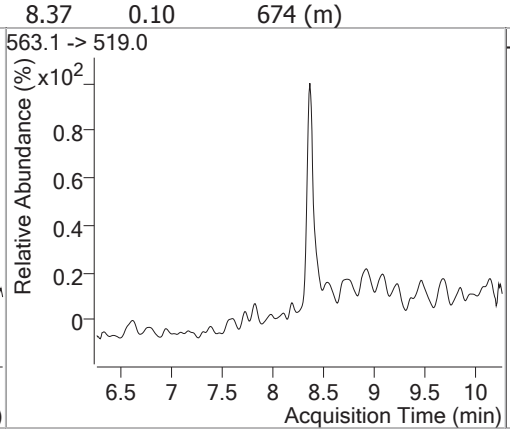


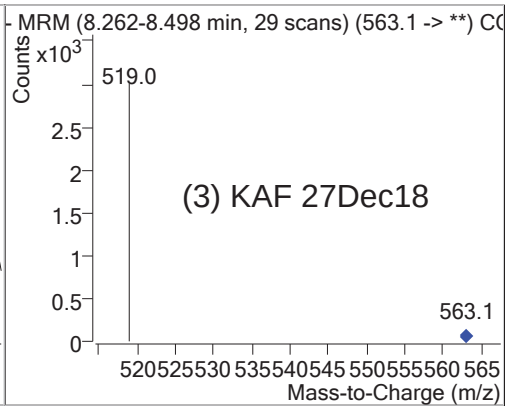
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	616.6523	8.37	0.10	140 (m)				



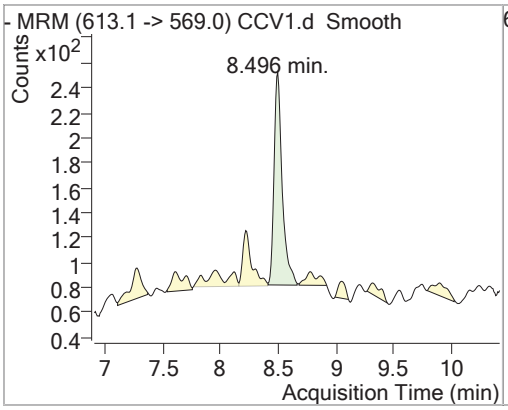
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	605.9531	8.37	0.10	674 (m)				

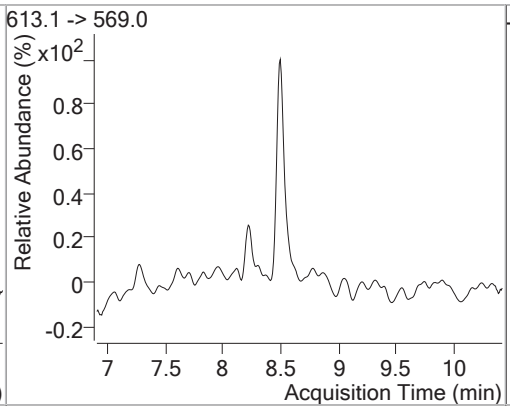


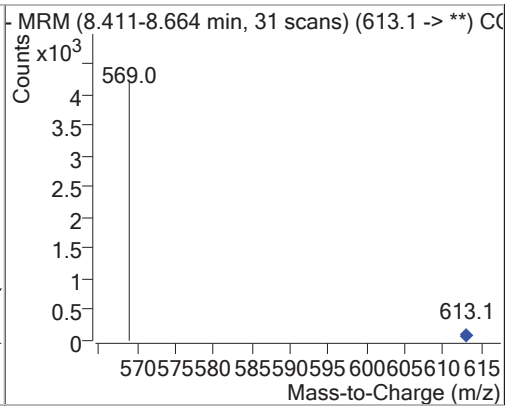




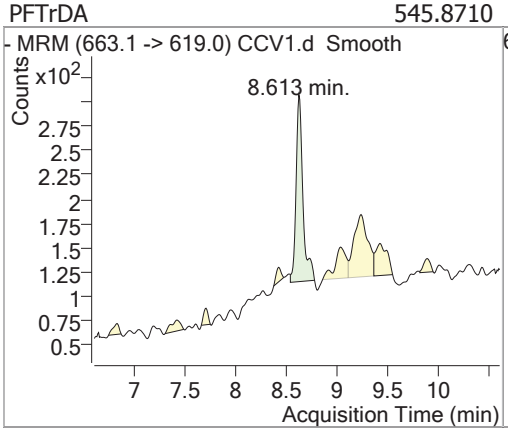
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	559.3608	8.50	0.07	842				

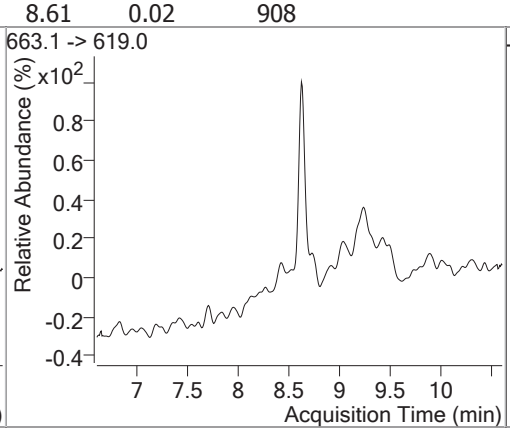


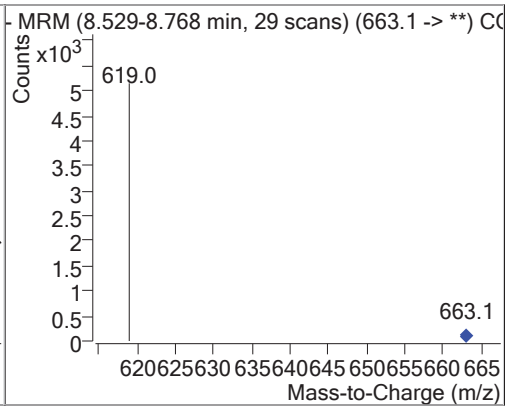




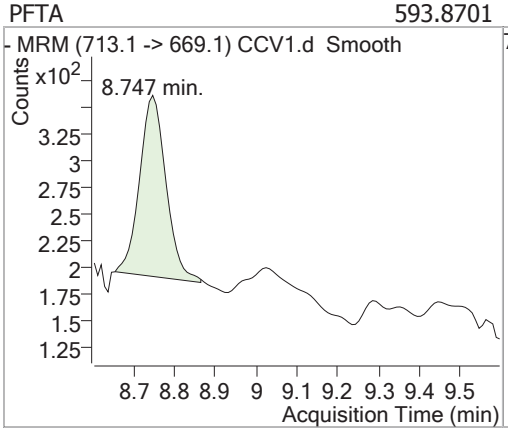
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	545.8710	8.61	0.02	908				

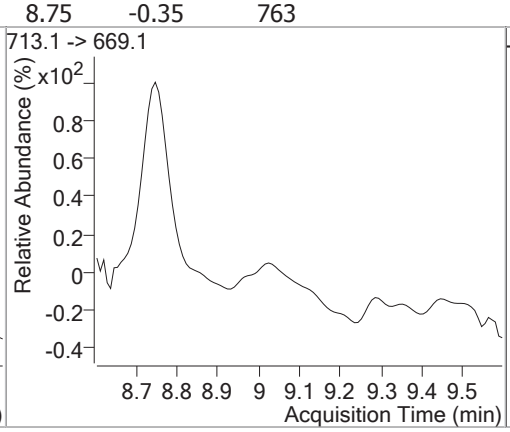


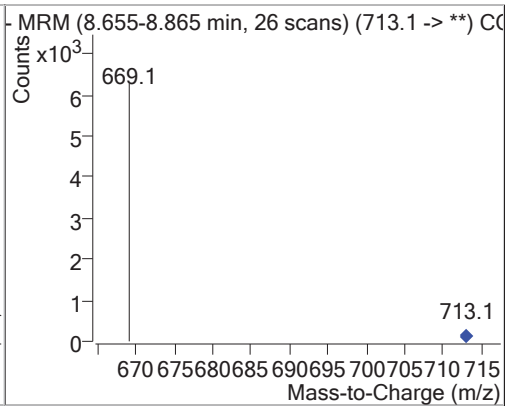




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	593.8701	8.75	-0.35	763				







CONTINUING CALIBRATION VERIFICATION

SOP 434-PFAAS

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Instrument ID:	HPLC1	Calibration:	1800396
Lab File ID:	lims export files full-014	Calibration Date:	12/21/18 14:04
Sequence:	S030754	Injection Date:	12/27/18
Lab Sample ID:	S030754-CCV2	Injection Time:	13:16

		CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perfluorobutanesulfonic acid (PFBS)	A	4420	4990	1.000668	1.047869		12.8	
Perfluorohexanoic acid (PFHxA)	A	5000	5100	1.164398	1.153022		2.1	
Perfluoroheptanoic acid (PFHpA)	A	5000	5130	1.191572	1.243333		2.6	
Perfluorobutanoic acid (PFBA)	A	5000	5860	0.5861229	0.6579737		17.3	
Perfluorodecanesulfonic acid (PFDS)	A	4820	5220	0.8090761	0.8089303		8.2	
Perfluoroheptanesulfonic acid (PFHpS)	A	4750	4700	0.6355485	0.5927835		-1.0	
Perfluorooctanesulfonamide (FOSA)	A	5000	5680	3.677559	4.024408		13.6	
Perfluoropentanoic acid (PFPeA)	A	5000	5190	0.7376181	0.7325671		3.9	
6:2 Fluorotelomersulfonate (6:2 FTS)	A	4750	5020	0.2262803	0.2232071		5.7	
8:2 Fluorotelomersulfonate (8:2 FTS)	A	4800	4240	0.241249	0.1997957		-11.6	
Perfluorohexanesulfonic acid (PFHxS)	A	4550	4620	0.861231	0.8567716		1.6	
Perfluorooctanoic acid (PFOA)	A	5000	5090	1.132236	1.167451		1.9	
Perfluorooctanesulfonic acid (PFOS)	A	4620	4470	1.289872	1.222141		-3.1	
Perfluorononanoic acid (PFNA)	A	5000	5540	0.5484562	0.6451359		10.8	
Perfluorodecanoic acid (PFDA)	A	5000	4830	1.028946	0.9558972		-3.4	
NMeFOSAA	A	5000	5180	1.187294	1.183598		3.7	
Perfluoroundecanoic acid (PFUnA)	A	5000	4800	1.042169	0.9542392		-4.1	
NEtFOSAA	A	5000	5470	0.9982486	1.017174		9.5	
Perfluorododecanoic acid (PFDoA)	A	5000	4260	1.387868	1.147817		-14.7	
Perfluorotridecanoic acid (PFTrDA)	A	5000	4630	1.509513	1.378958		-7.3	
Perfluorotetradecanoic acid (PFTA)	A	5000	4750	1.192036	1.092144		-4.9	

7 - FORM VII

CONTINUING CALIBRATION VERIFICATION

SOP 434-PFAAS

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Instrument ID:	HPLC1	Calibration:	1800396
Lab File ID:	lims export files full-014	Calibration Date:	12/21/18 14:04
Sequence:	S030754	Injection Date:	12/27/18
Lab Sample ID:	S030754-CCV2	Injection Time:	13:16

		CONC. (ng/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
13C-PFHxA	A	10000	11100	1.254614	1.364094		11.0	
13C-PFDA	A	10000	10200	0.6518741	0.659006		1.7	
d5-NEtFOSAA	A	40000	42800	0.9065465	0.9362734		7.0	

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

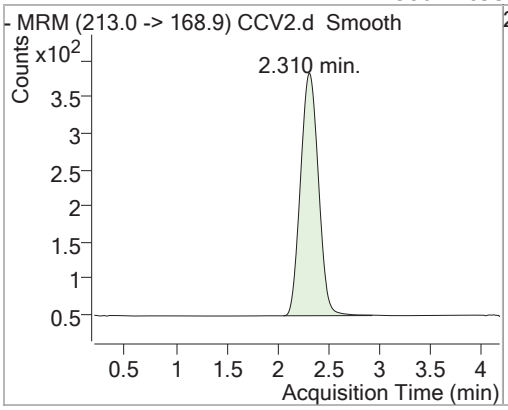
* Values outside of QC limits

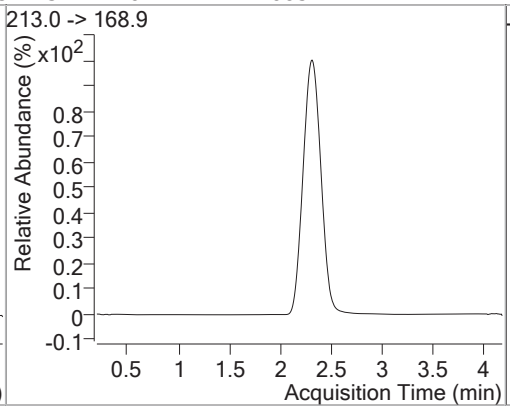
Data File	CCV2.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/27/2018 1:16:23 PM
Sample Name	CCV2	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File	122018.m	Comment	
Tune File		Tune Date	
Batch Name	1.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

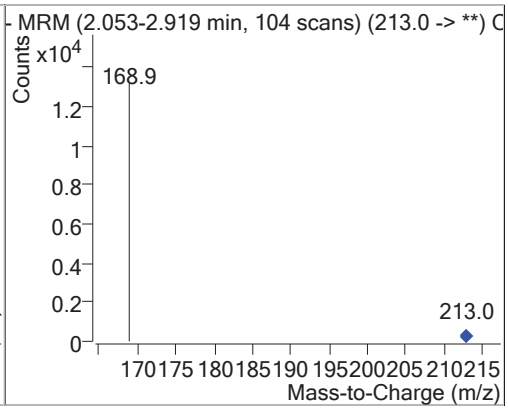
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M PFOA C13	7.828	416.9 -> 371.9	12417	10000.0000	pg/ml	0.178
M PFOS C13	8.011	502.9 -> 80.0	10213	28700.0000	pg/ml	0.111
M d3-N-MeFOSAA	8.236	573.2 -> 419.0	9894	40000.0000	pg/ml	0.052
System Monitoring Compounds						
S PFHxA C13	7.300	314.9 -> 269.9	16938	11096.4301	pg/ml	0.362
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 110.96%		
S PFDA C13	8.162	514.9 -> 469.9	8183	10170.3892	pg/ml	0.069
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 101.70%		
S d5-N-MeFOSAA	8.303	589.2 -> 419.0	9263	42800.1548	pg/ml	0.035
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 107.00%		
Target Compounds						QValue
T PFBA	2.310	213.0 -> 168.9	4085	5864.2095	pg/ml	100
T PFPeA	6.611	263.0 -> 219.0	4548	5194.6706	pg/ml	100
T PFBS	6.905	298.9 -> 80.0	1648	4987.4544	pg/ml	100
T PFHxA	7.300	312.9 -> 268.9	7159	5103.3661	pg/ml	100
T PFHpA	7.611	362.9 -> 319.0	7719	5130.4070	pg/ml	100
T 6.2 FTS	7.828	427.0 -> 406.8	377	5021.6764	pg/ml	100
T PFOA-Total	7.829	412.9 -> 368.9	7248	5094.1717	pg/ml	100
T PFHpS	7.836	449.0 -> 79.7	1002	4702.9050	pg/ml	100
T PFHxS-Total	7.627	398.9 -> 80.0	1387	4622.9897	pg/ml	100
T PFNA	8.012	462.9 -> 418.9	4005	5539.0085	pg/ml	100
T PFOS-Total	8.003	498.9 -> 80.0	2009	4474.5504	pg/ml	100
T PFDA	8.162	513.1 -> 469.0	5935	4828.3474	pg/ml	100
T 8.2 FTS	8.170	527.0 -> 81.0	341	4243.5450	pg/ml	100
T N-MeFOSAA	8.237	570.2 -> 419.1	1464	5184.4140	pg/ml	100
T FOSA	8.289	497.9 -> 77.9	4977	5677.8842	pg/ml	100
T PFDS	8.286	599.0 -> 80.0	1387	5217.2063	pg/ml	100
T N-EtFOSAA	8.303	584.2 -> 419.0	1258	5474.2991	pg/ml	100
T PFUnA	8.296	563.1 -> 519.0	5925	4795.1740	pg/ml	100
T PFDoA	8.411	613.1 -> 569.0	7126	4263.4604	pg/ml	100
T PFTrDA	8.529	663.1 -> 619.0	8562	4633.3709	pg/ml	100
T PFTA	8.629	713.1 -> 669.1	6781	4754.8684	pg/ml	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

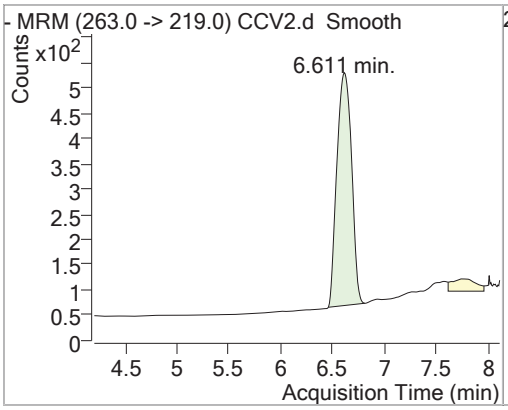
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	5864.2095	2.31	0.14	4085				

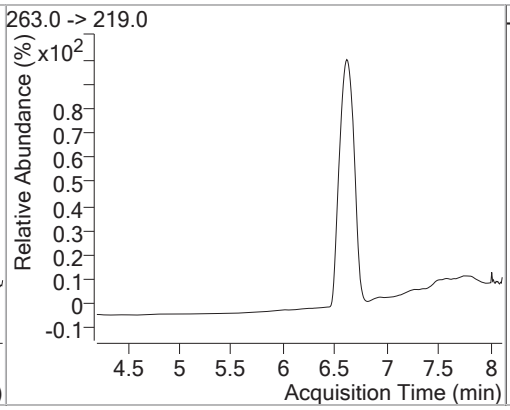


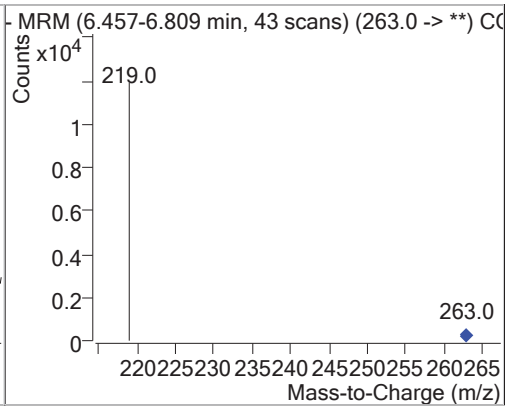




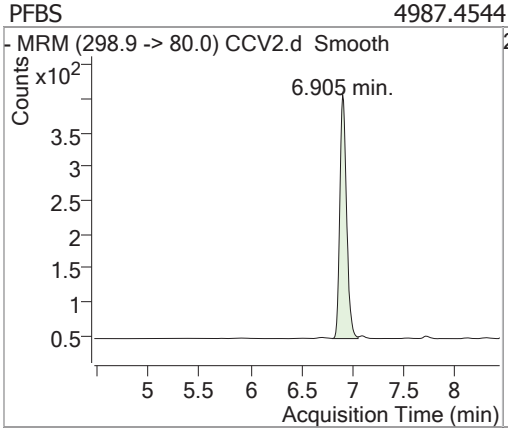
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	5194.6706	6.61	0.50	4548				

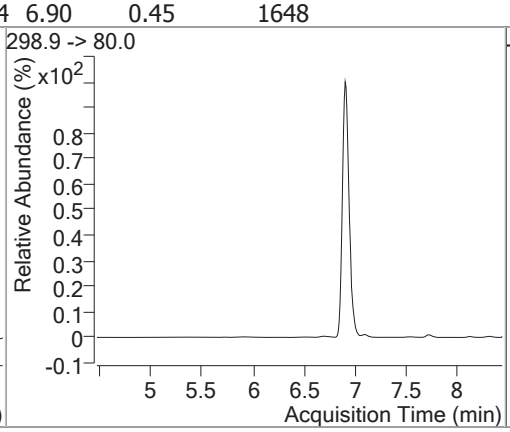


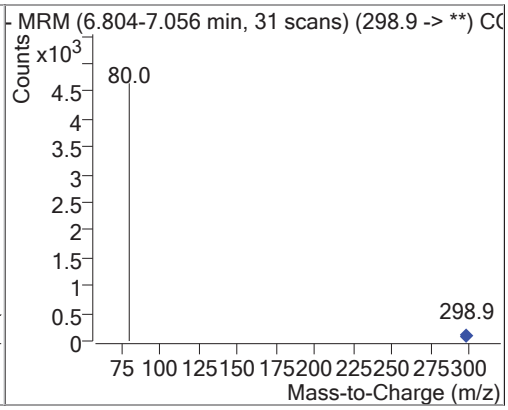




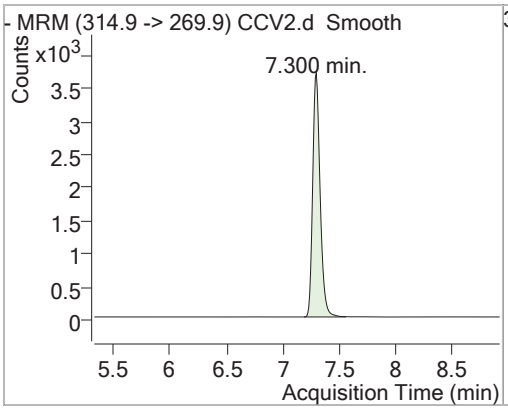
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	4987.4544	6.90	0.45	1648				

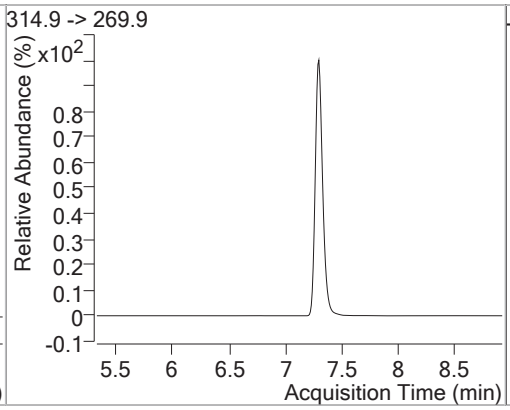


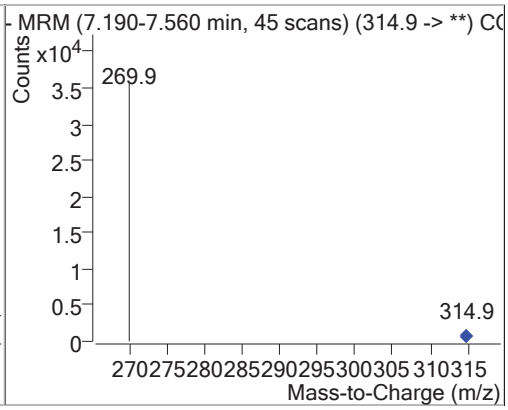




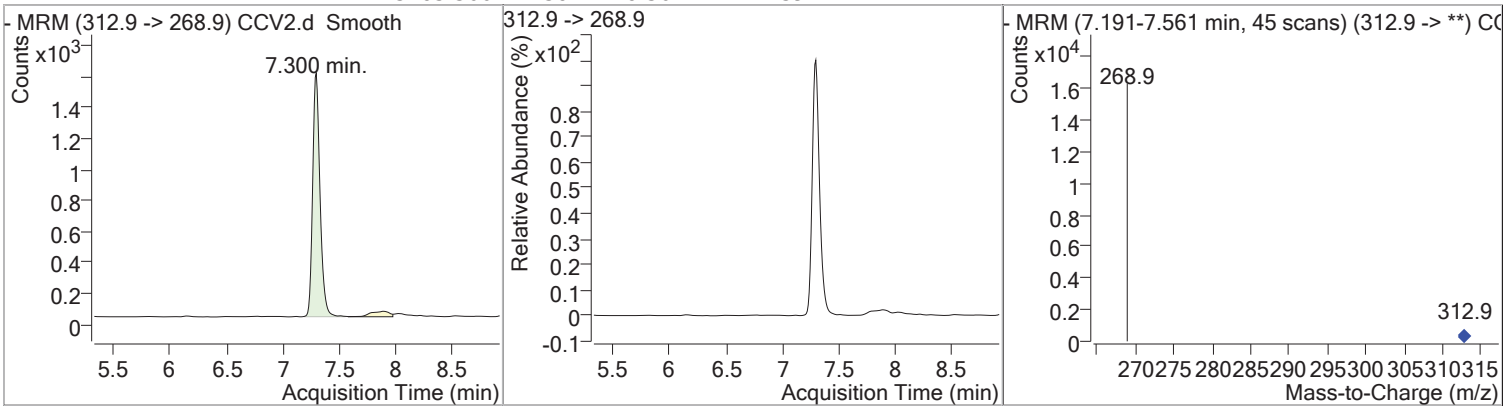
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	11096.4301	7.30	0.36	16938				



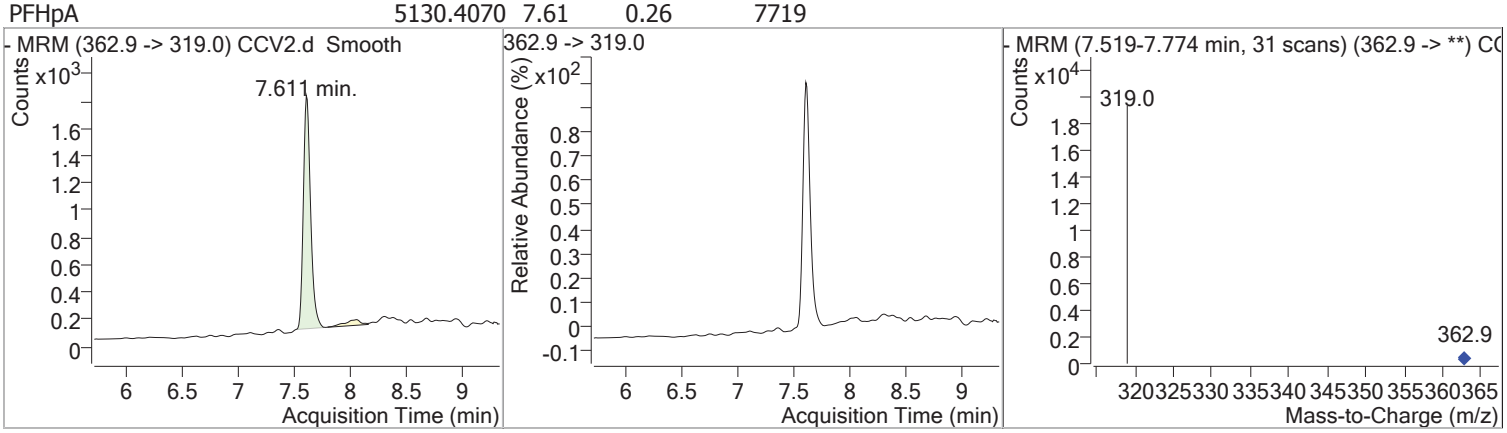




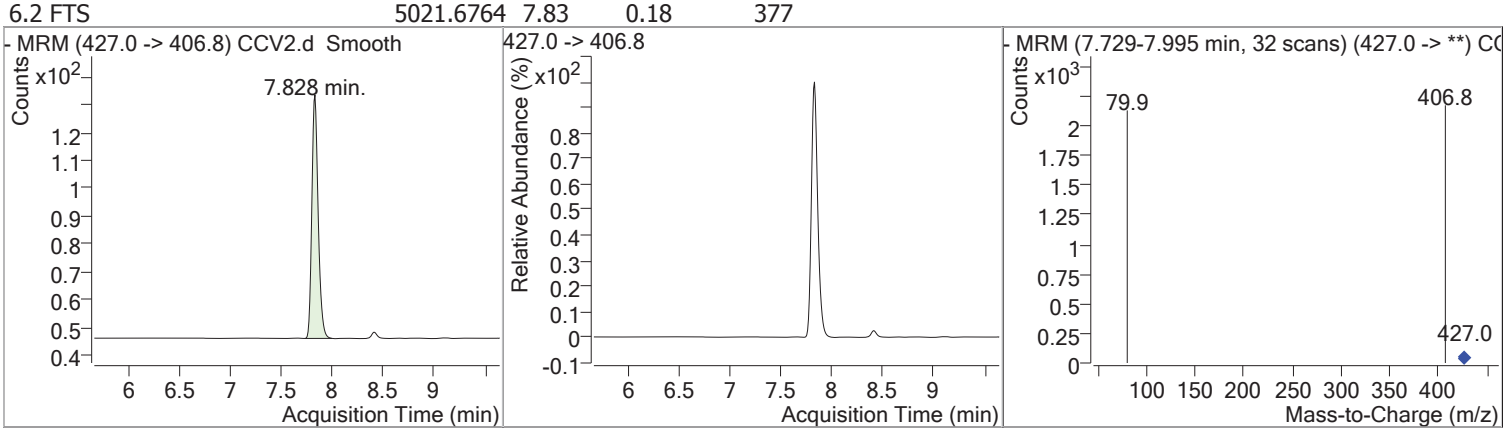
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	5103.3661	7.30	0.36	7159				



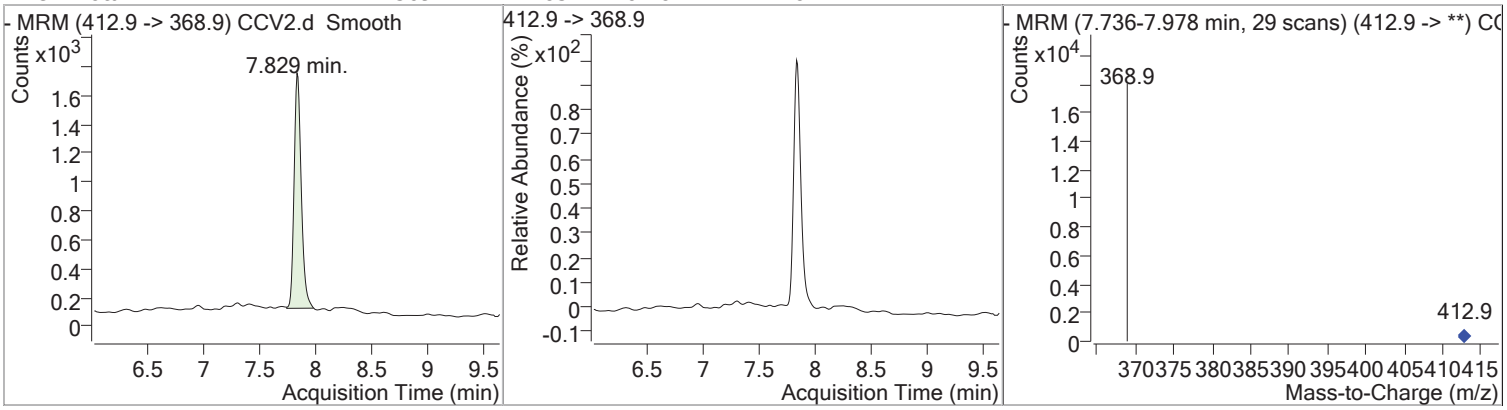
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	5130.4070	7.61	0.26	7719				



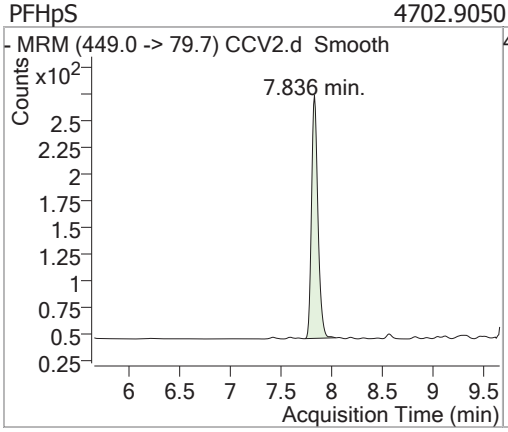
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	5021.6764	7.83	0.18	377				

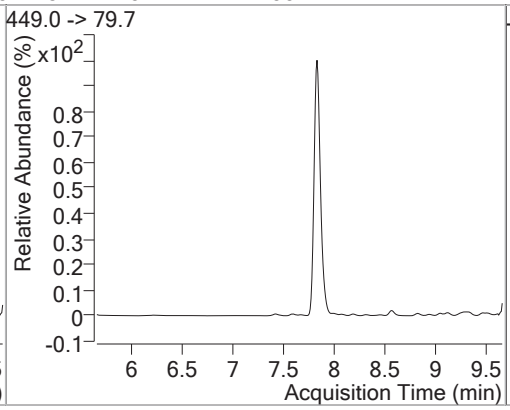


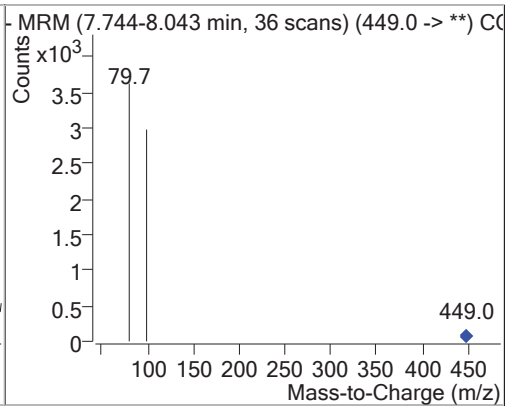
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	5094.1717	7.83	0.18	7248				



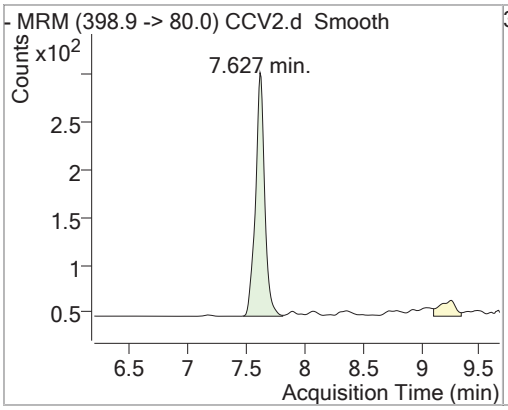
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	4702.9050	7.84	0.17	1002				

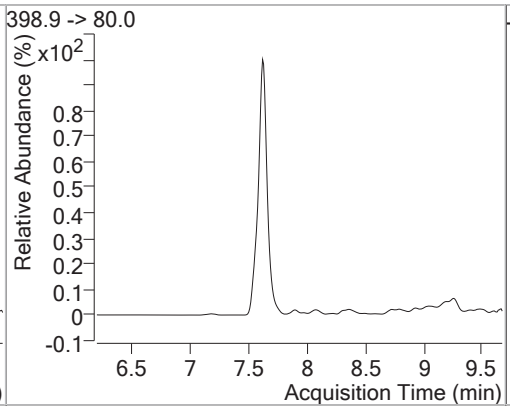


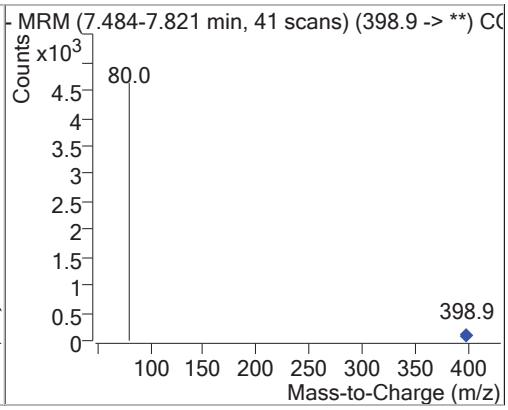




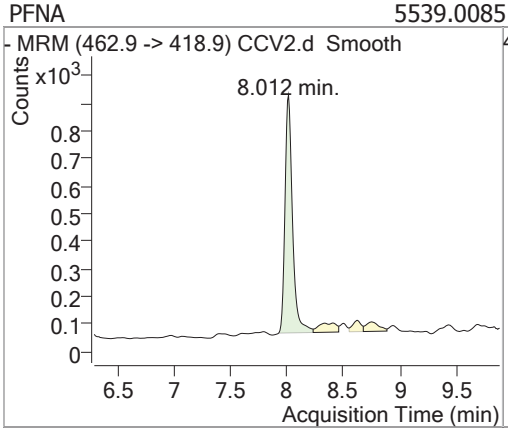
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	4622.9897	7.63	-0.05	1387				

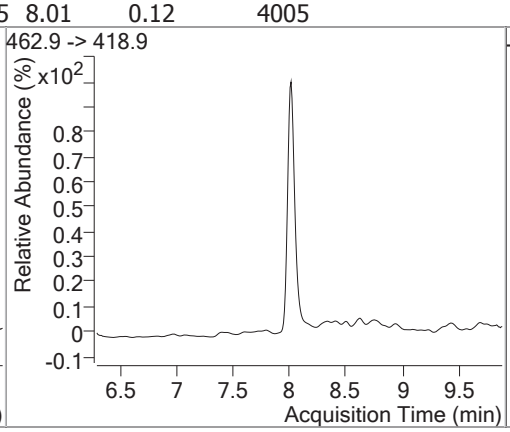


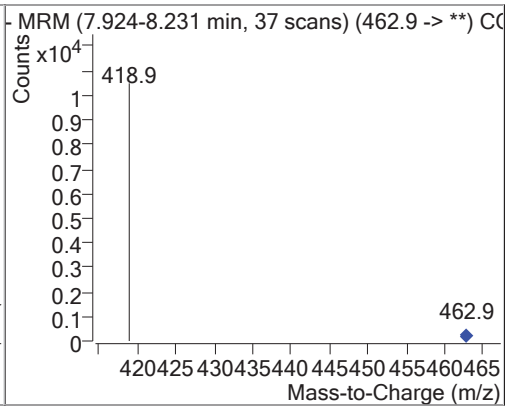




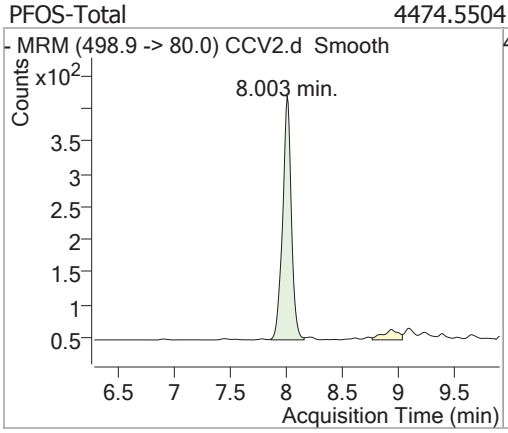
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	5539.0085	8.01	0.12	4005				

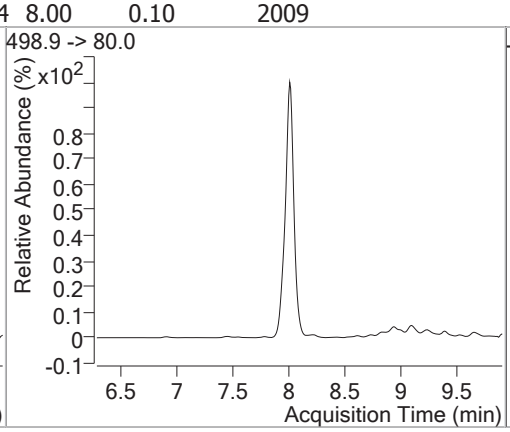


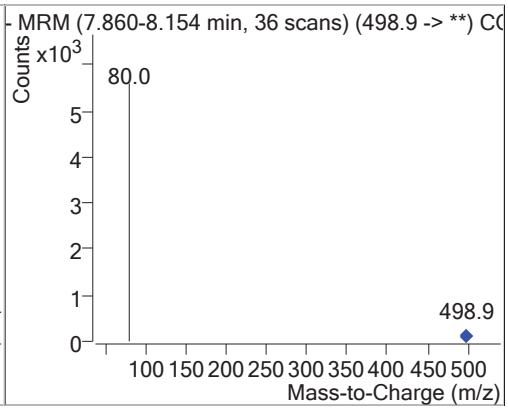




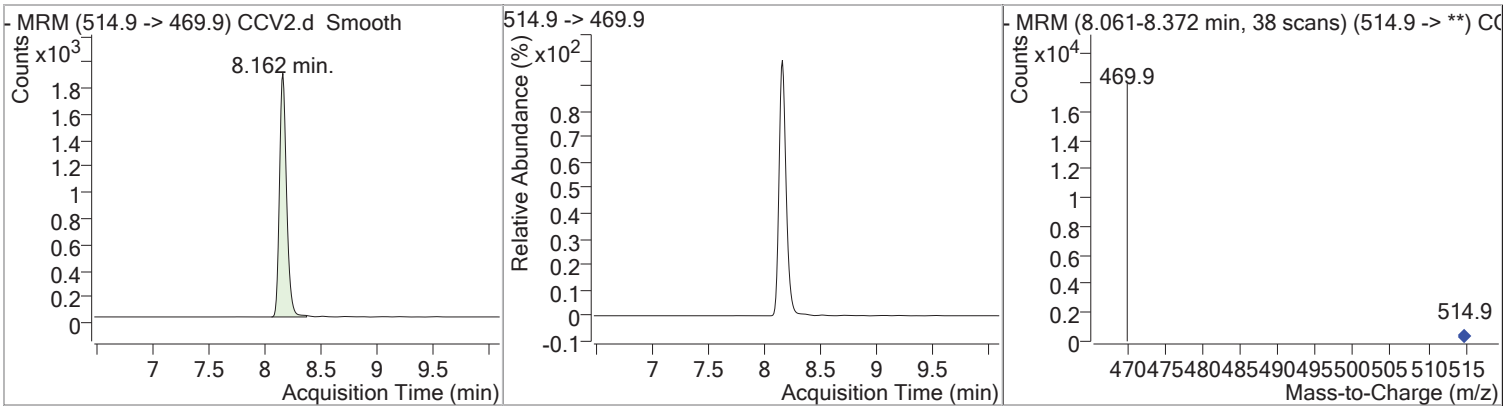
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	4474.5504	8.00	0.10	2009				



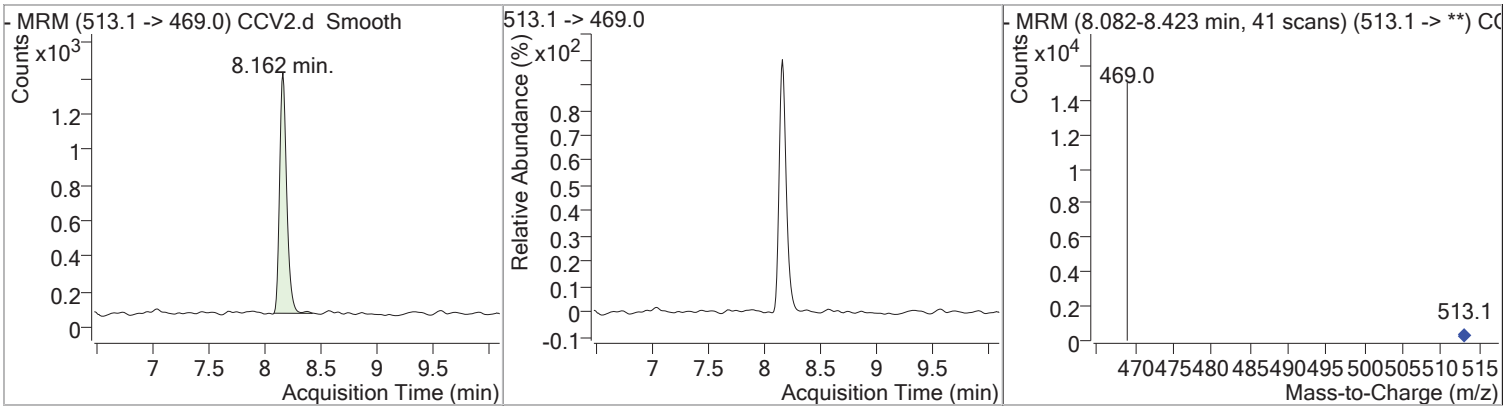




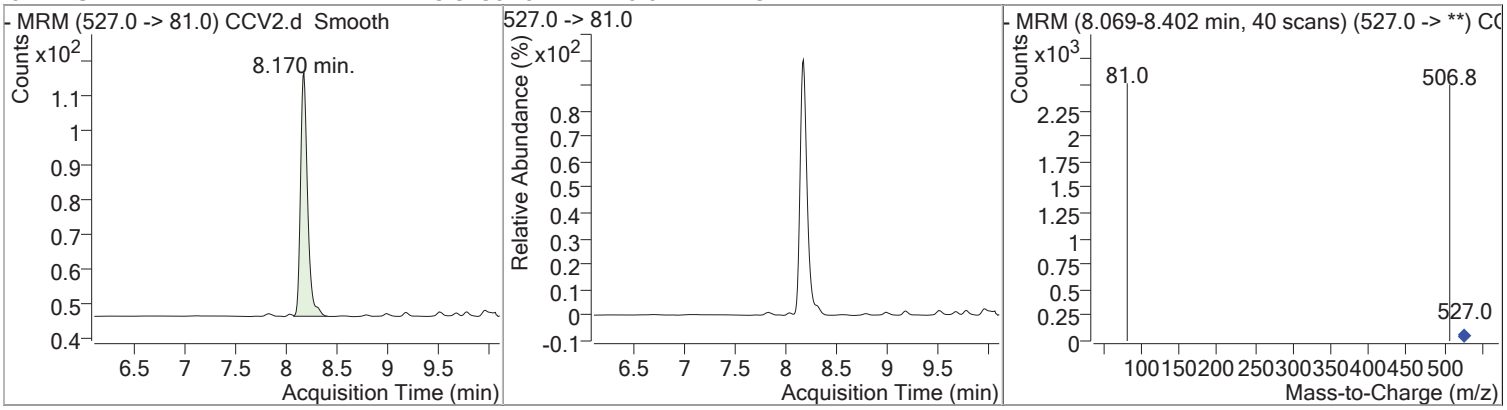
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	10170.3892	8.16	0.07	8183				



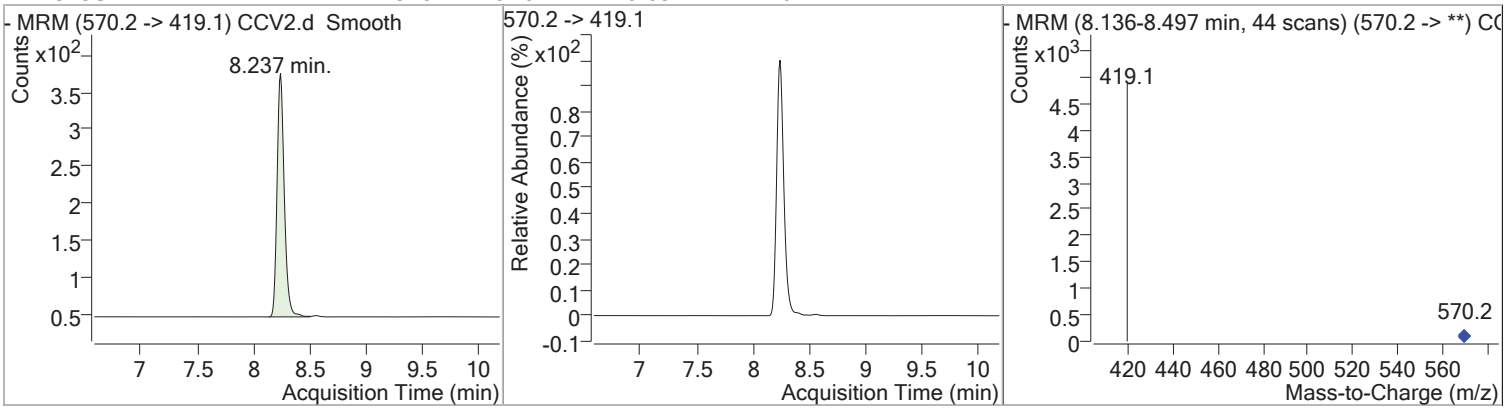
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	4828.3474	8.16	0.07	5935				



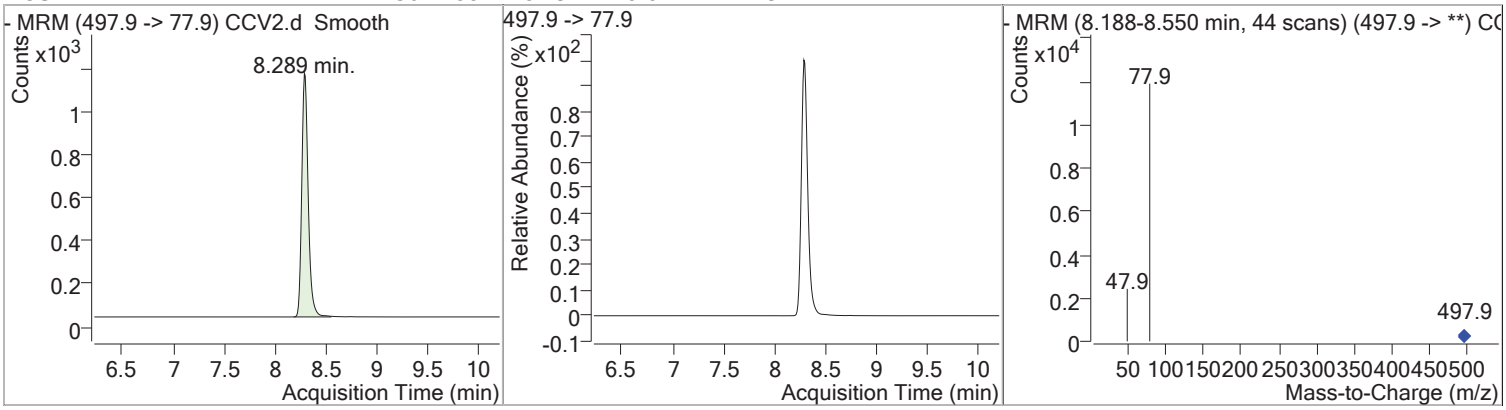
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	4243.5450	8.17	0.07	341				



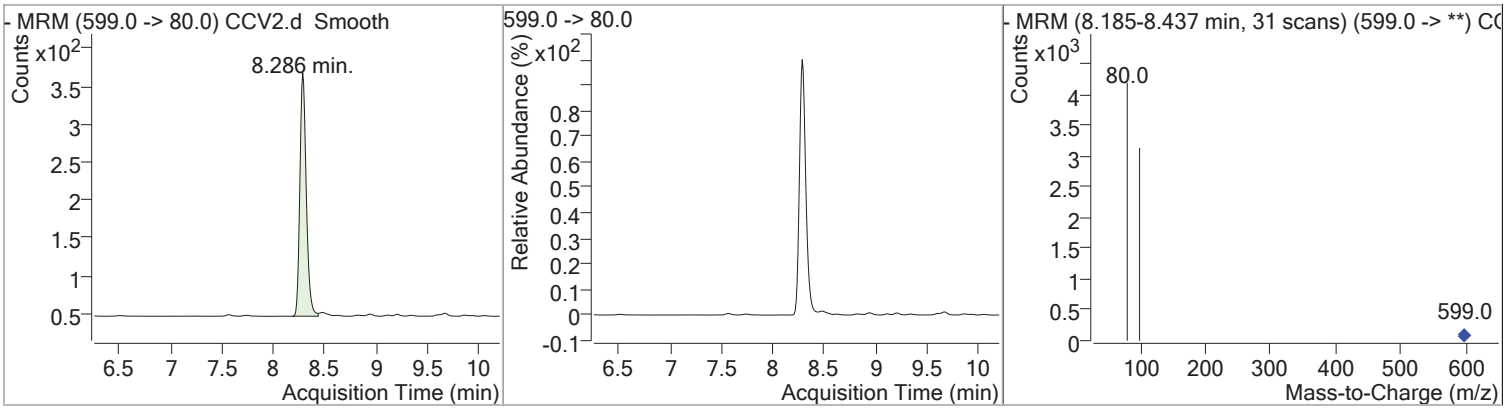
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	5184.4140	8.24	0.05	1464				



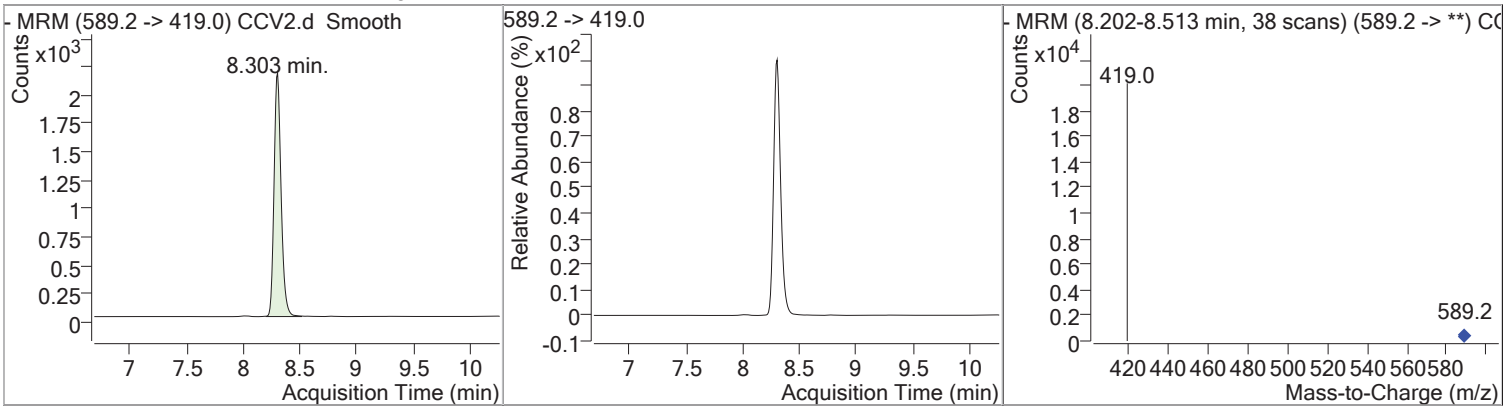
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	5677.8842	8.29	0.07	4977				



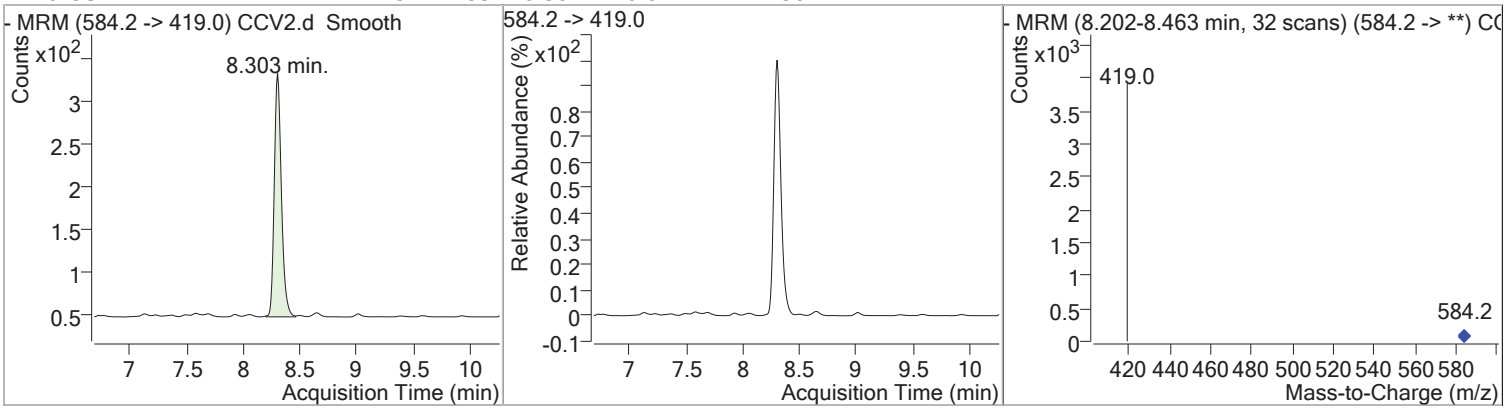
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	5217.2063	8.29	0.03	1387				



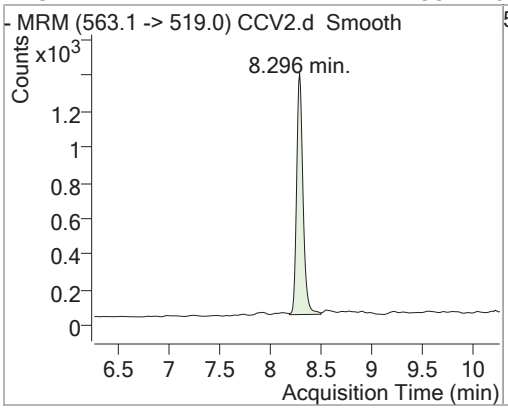
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	42800.1548	8.30	0.04	9263				

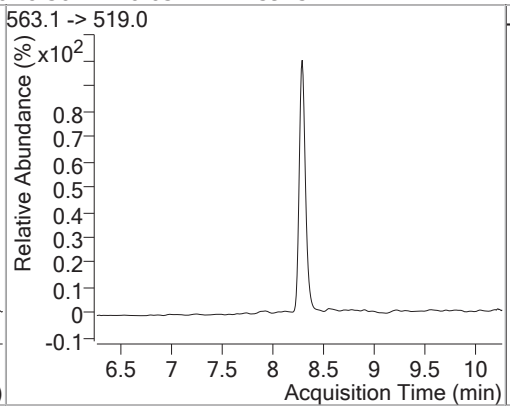


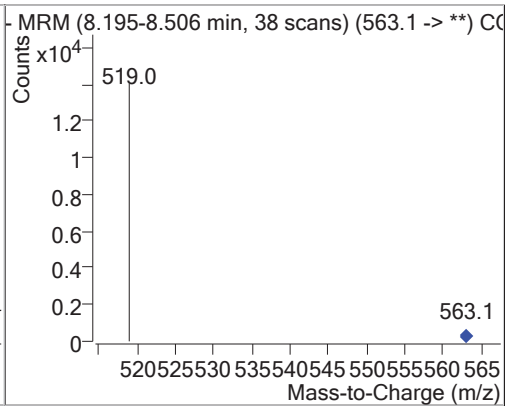
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	5474.2991	8.30	0.04	1258				



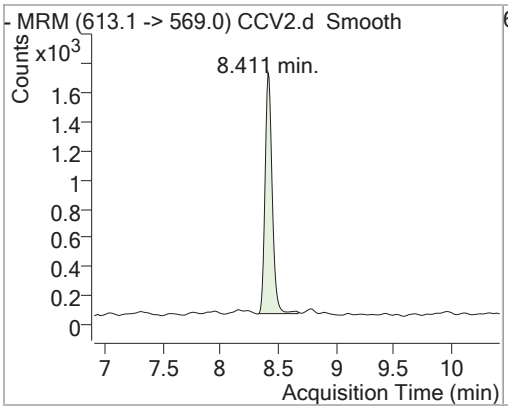
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	4795.1740	8.30	0.03	5925				

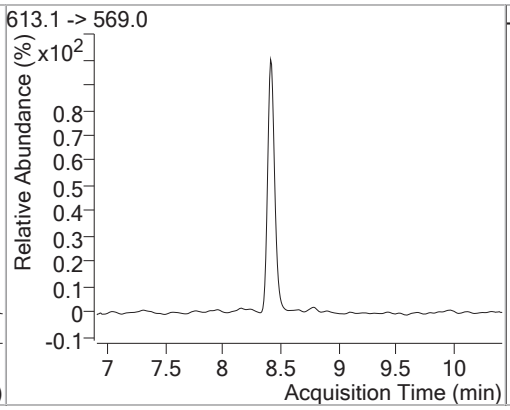


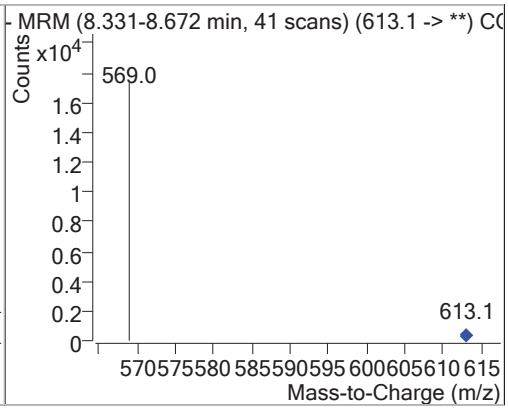




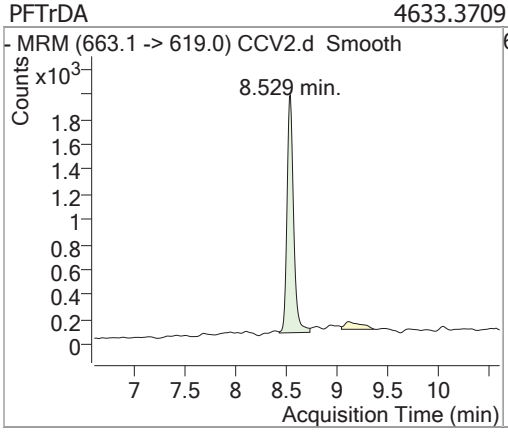
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	4263.4604	8.41	-0.02	7126				

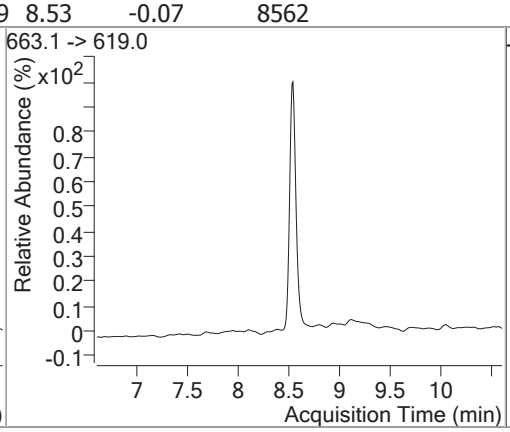


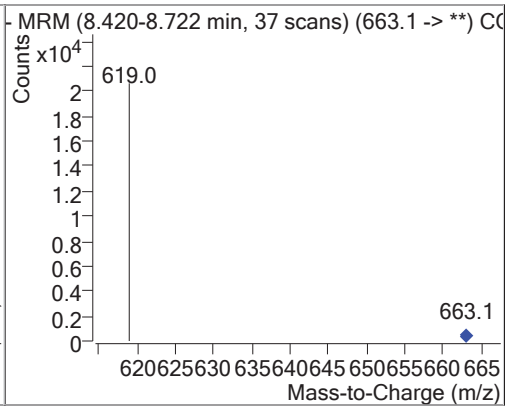




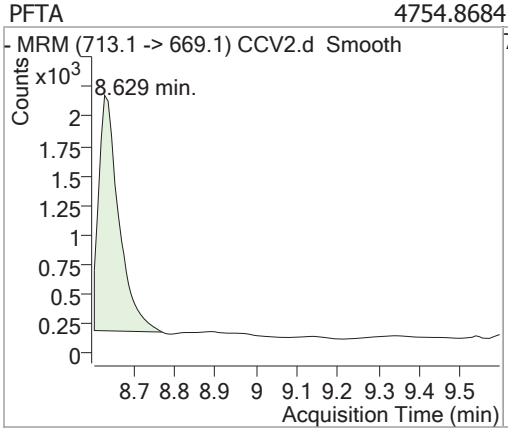
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	4633.3709	8.53	-0.07	8562				

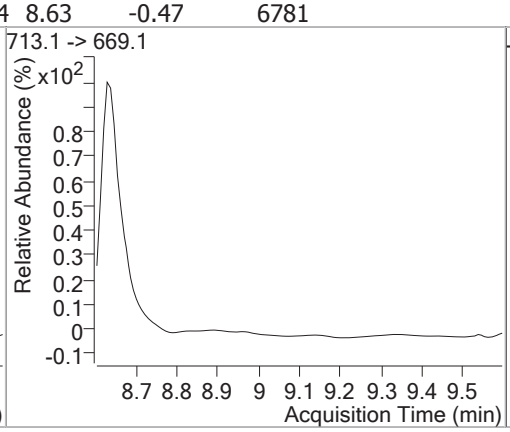


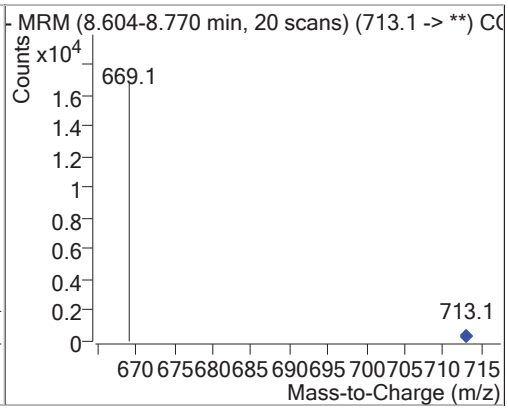




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	4754.8684	8.63	-0.47	6781				







8 - FORM VIII
INTERNAL STANDARD AREA AND RT SUMMARY

SOP 434-PFAAS

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Sequence:	S030754	Instrument:	HPLC1
		Calibration:	1800396

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (S030754-CCV1)			*Lab File ID: lims export files full-001*			*Analyzed: 12/27/18 10:28*			
13C-PFOA	11180.97	7.895717	13379.37	8.021883	84	50 - 150	-0.1262	+/-0.50	
13C-PFOS	10124.86	8.078333	10613.26	8.229867	95	50 - 150	-0.1515	+/-0.50	
d3-NMeFOSAA	9766.829	8.31195	11503.36	8.49695	85	50 - 150	-0.1850	+/-0.50	
LCS (B219828-BS1)			*Lab File ID: lims export files full-002*			*Analyzed: 12/27/18 10:43*			
13C-PFOA	13744.05	7.92095	11180.97	7.895717	123	50 - 150	0.0252	+/-0.50	
13C-PFOS	9978.466	8.103567	10124.86	8.078333	99	50 - 150	0.0252	+/-0.50	
d3-NMeFOSAA	12280.66	8.328767	9766.829	8.31195	126	50 - 150	0.0168	+/-0.50	
Matrix Spike (B219828-MS1)			*Lab File ID: lims export files full-003*			*Analyzed: 12/27/18 10:56*			
13C-PFOA	13457.98	7.862067	11180.97	7.895717	120	50 - 150	-0.0337	+/-0.50	
13C-PFOS	8040.99	8.044683	10124.86	8.078333	79	50 - 150	-0.0337	+/-0.50	
d3-NMeFOSAA	11813.71	8.278334	9766.829	8.31195	121	50 - 150	-0.0336	+/-0.50	
Matrix Spike Dup (B219828-MSD1)			*Lab File ID: lims export files full-004*			*Analyzed: 12/27/18 11:08*			
13C-PFOA	14419.31	7.895717	11180.97	7.895717	129	50 - 150	0.0000	+/-0.50	
13C-PFOS	9474.287	8.078333	10124.86	8.078333	94	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	12287.68	8.30355	9766.829	8.31195	126	50 - 150	-0.0084	+/-0.50	
Blank (B219828-BLK1)			*Lab File ID: lims export files full-005*			*Analyzed: 12/27/18 11:21*			
13C-PFOA	11844.11	7.8873	11180.97	7.895717	106	50 - 150	-0.0084	+/-0.50	
13C-PFOS	9094.379	8.0699	10124.86	8.078333	90	50 - 150	-0.0084	+/-0.50	
d3-NMeFOSAA	11265.09	8.295134	9766.829	8.31195	115	50 - 150	-0.0168	+/-0.50	
MW-15 121218 (18L0603-01)			*Lab File ID: lims export files full-006*			*Analyzed: 12/27/18 11:34*			
13C-PFOA	14305.04	7.85365	11180.97	7.895717	128	50 - 150	-0.0421	+/-0.50	
13C-PFOS	9785.632	8.036266	10124.86	8.078333	97	50 - 150	-0.0421	+/-0.50	
d3-NMeFOSAA	11730.17	8.261517	9766.829	8.31195	120	50 - 150	-0.0504	+/-0.50	
MW-5 121218 (18L0603-02)			*Lab File ID: lims export files full-007*			*Analyzed: 12/27/18 11:47*			
13C-PFOA	14031.13	7.870483	11180.97	7.895717	125	50 - 150	-0.0252	+/-0.50	
13C-PFOS	9235.168	8.053083	10124.86	8.078333	91	50 - 150	-0.0252	+/-0.50	
d3-NMeFOSAA	11460.92	8.278334	9766.829	8.31195	117	50 - 150	-0.0336	+/-0.50	
MW-18 121218 (18L0603-03)			*Lab File ID: lims export files full-008*			*Analyzed: 12/27/18 11:59*			
13C-PFOA	15718.92	7.8873	11180.97	7.895717	141	50 - 150	-0.0084	+/-0.50	
13C-PFOS	10568.51	8.0615	10124.86	8.078333	104	50 - 150	-0.0168	+/-0.50	
d3-NMeFOSAA	12775.7	8.286734	9766.829	8.31195	131	50 - 150	-0.0252	+/-0.50	

8 - FORM VIII
INTERNAL STANDARD AREA AND RT SUMMARY

SOP 434-PFAAS

Laboratory:	Con-Test Analytical Laboratory	Work Order:	18L0603
Client:	AECOM Environment - Latham, NY	Project:	60284002 - Utica, NY
Sequence:	S030754	Instrument:	HPLC1
		Calibration:	1800396

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-12 121218 (18L0603-04)			*Lab File ID: lims export files full-009*			*Analyzed: 12/27/18 12:12*			
13C-PFOA	11507.74	7.870483	11180.97	7.895717	103	50 - 150	-0.0252	+/-0.50	
13C-PFOS	8809.83	8.053083	10124.86	8.078333	87	50 - 150	-0.0252	+/-0.50	
d3-NMeFOSAA	10205.7	8.286734	9766.829	8.31195	104	50 - 150	-0.0252	+/-0.50	
MW-1 121218 (18L0603-05)			*Lab File ID: lims export files full-010*			*Analyzed: 12/27/18 12:25*			
13C-PFOA	11983.99	7.8789	11180.97	7.895717	107	50 - 150	-0.0168	+/-0.50	
13C-PFOS	9700.019	8.053083	10124.86	8.078333	96	50 - 150	-0.0252	+/-0.50	
d3-NMeFOSAA	11482.85	8.286734	9766.829	8.31195	118	50 - 150	-0.0252	+/-0.50	
field blank (18L0603-06)			*Lab File ID: lims export files full-011*			*Analyzed: 12/27/18 12:38*			
13C-PFOA	12106.15	7.811617	11180.97	7.895717	108	50 - 150	-0.0841	+/-0.50	
13C-PFOS	9593.964	7.994216	10124.86	8.078333	95	50 - 150	-0.0841	+/-0.50	
d3-NMeFOSAA	10516.25	8.219517	9766.829	8.31195	108	50 - 150	-0.0924	+/-0.50	
equipment blank (18L0603-07)			*Lab File ID: lims export files full-012*			*Analyzed: 12/27/18 12:50*			
13C-PFOA	13369.21	7.870483	11180.97	7.895717	120	50 - 150	-0.0252	+/-0.50	
13C-PFOS	10224.8	8.053083	10124.86	8.078333	101	50 - 150	-0.0252	+/-0.50	
d3-NMeFOSAA	12194.57	8.278334	9766.829	8.31195	125	50 - 150	-0.0336	+/-0.50	
DUP (18L0603-08)			*Lab File ID: lims export files full-013*			*Analyzed: 12/27/18 13:03*			
13C-PFOA	13875.16	7.878883	11180.97	7.895717	124	50 - 150	-0.0168	+/-0.50	
13C-PFOS	9815.707	8.053083	10124.86	8.078333	97	50 - 150	-0.0252	+/-0.50	
d3-NMeFOSAA	11494.9	8.278334	9766.829	8.31195	118	50 - 150	-0.0336	+/-0.50	
Calibration Check (S030754-CCV2)			*Lab File ID: lims export files full-014*			*Analyzed: 12/27/18 13:16*			
13C-PFOA	12417.39	7.828434	11180.97	7.895717	111	50 - 150	-0.0673	+/-0.50	
13C-PFOS	10212.94	8.011033	10124.86	8.078333	101	50 - 150	-0.0673	+/-0.50	
d3-NMeFOSAA	9893.829	8.236317	9766.829	8.31195	101	50 - 150	-0.0756	+/-0.50	

QC DATA

1 - FORM I
ANALYSIS DATA SHEET

Blank

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY		Project:	60284002 - Utica, NY	
Matrix:	Water	Laboratory ID:	B219828-BLK1	File ID:	lims export files full-005
Sampled:		Prepared:	12/24/18 08:00	Analyzed:	12/27/18 11:21
Solids:		Preparation:	EPA 537	Dilution:	
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
Instrument:	HPLC1				
Column:	1				

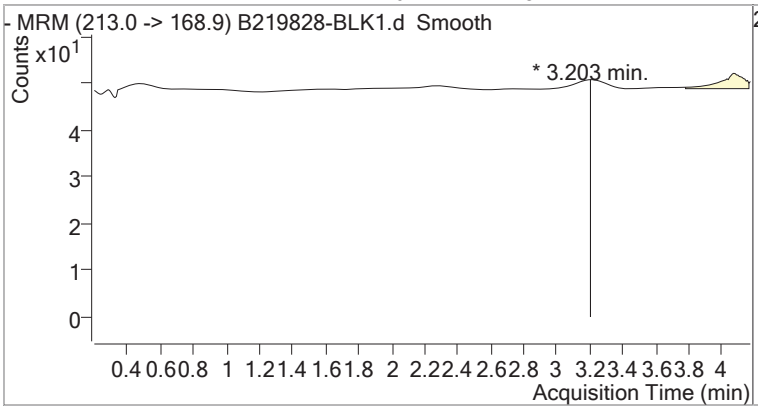
CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)		2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)		2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)		2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)		2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)		2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)		2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)		2.0	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)		2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)		2.0	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		2.0	2.0	
	NMeFOSAA		2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		2.0	2.0	
	NEtFOSAA		2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		2.0	2.0	

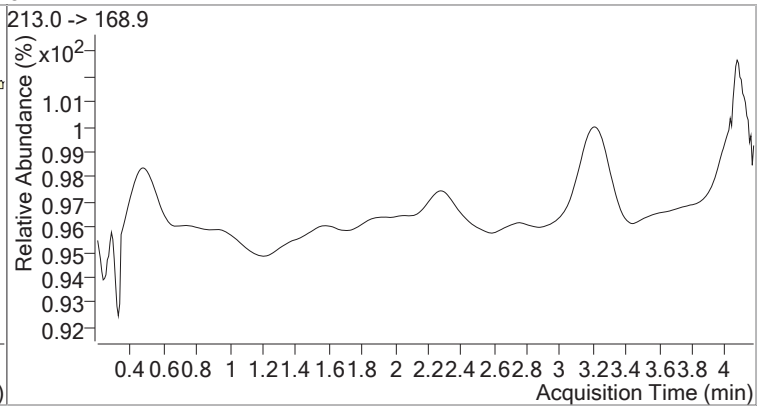
Data File	B219828-BLK1.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/27/2018 11:21:42 AM
Sample Name	B219828-BLK1	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File	122018.m	Comment	
Tune File		Tune Date	
Batch Name	1.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	7.887	416.9 -> 371.9	11844	10000.0000	pg/ml		0.237
M PFOS C13	8.070	502.9 -> 80.0	9094	28700.0000	pg/ml		0.170
M d3-N-MeFOSAA	8.295	573.2 -> 419.0	11265	40000.0000	pg/ml		0.111
System Monitoring Compounds							
S PFHxA C13	7.333	314.9 -> 269.9	15455	10614.6164	pg/ml		0.396
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 106.15%			
S PFDA C13	8.229	514.9 -> 469.9	7145	9310.4856	pg/ml		0.136
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 93.10%			
S d5-N-MeFOSAA	8.370	589.2 -> 419.0	8862	35962.3701	pg/ml		0.102
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 89.91%			
Target Compounds							QValue
T PFBA	3.203	213.0 -> 168.9	0	0.0000	pg/ml	md	1
T PFPeA	6.451	263.0 -> 219.0	0	0.0000	pg/ml	md	1
T PFBS	6.451	298.9 -> 80.0	0	0.0000	pg/ml	md	1
T PFHxA	6.972	312.9 -> 268.9	0	0.0000	pg/ml	md	1
T PFHpA	7.728	362.9 -> 319.0	0	0.0000	pg/ml	md	1
T 6.2 FTS	7.702	427.0 -> 406.8	0	0.0000	pg/ml	md	1
T PFOA-Total	7.795	412.9 -> 368.9	0	0.0000	pg/ml	md	1
T PFHpS	7.886	449.0 -> 79.7	0	0.0000	pg/ml	md	1
T PFHxS-Total	7.736	398.9 -> 80.0	0	0.0000	pg/ml	md	1
T PFNA	8.004	462.9 -> 418.9	0	0.0000	pg/ml	md	1
T PFOS-Total	8.062	498.9 -> 80.0	188	470.4338	pg/ml	m	100
T PFDA	8.137	513.1 -> 469.0	0	0.0000	pg/ml	md	1
T 8.2 FTS	8.044	527.0 -> 81.0	0	0.0000	pg/ml	md	1
T N-MeFOSAA	8.119	570.2 -> 419.1	0	0.0000	pg/ml	md	1
T FOSA	8.365	497.9 -> 77.9	0	0.0000	pg/ml	md	1
T PFDS	8.311	599.0 -> 80.0	0	0.0000	pg/ml	md	1
T N-EtFOSAA	8.211	584.2 -> 419.0	0	0.0000	pg/ml	md	1
T PFUnA	8.119	563.1 -> 519.0	0	0.0000	pg/ml	md	1
T PFDoA	8.395	613.1 -> 569.0	0	0.0000	pg/ml	md	1
T PFTrDA	8.537	663.1 -> 619.0	0	0.0000	pg/ml	md	1
T PFTA	8.697	713.1 -> 669.1	0	0.0000	pg/ml	md	1

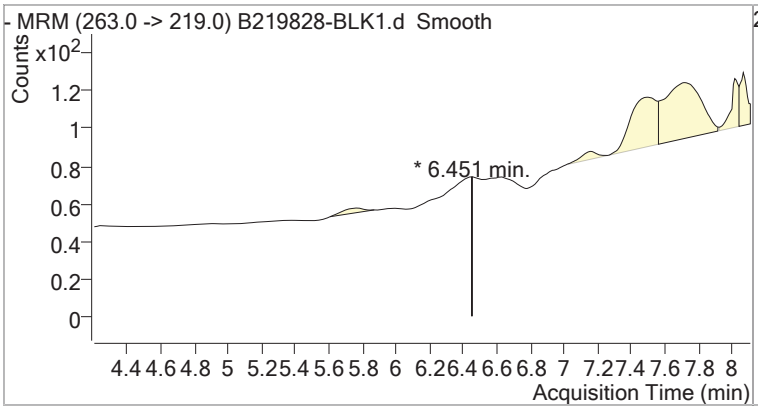
(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

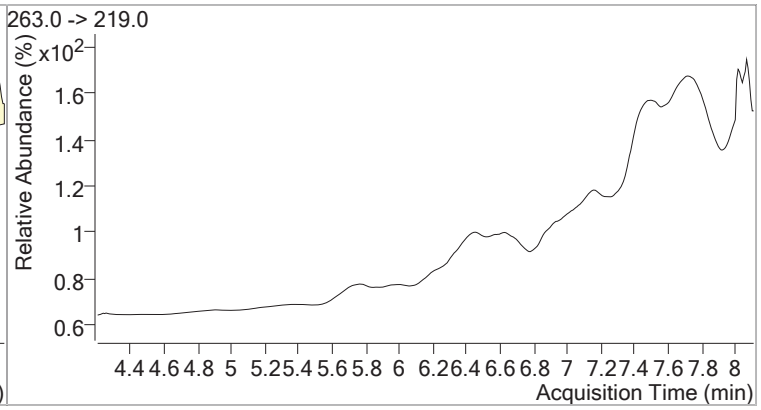
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	d	0		0				



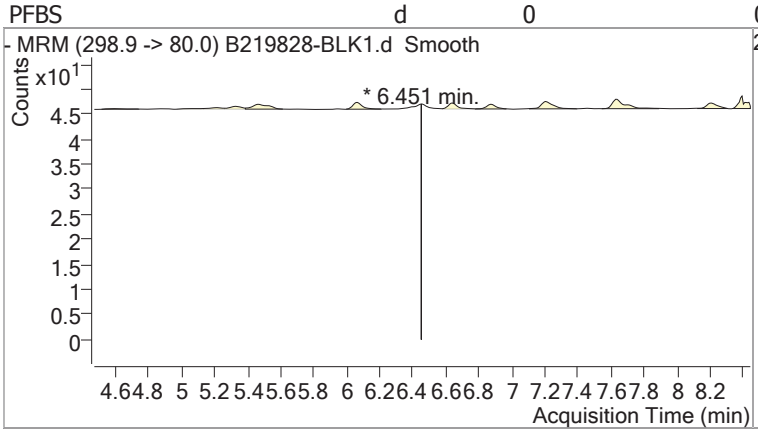


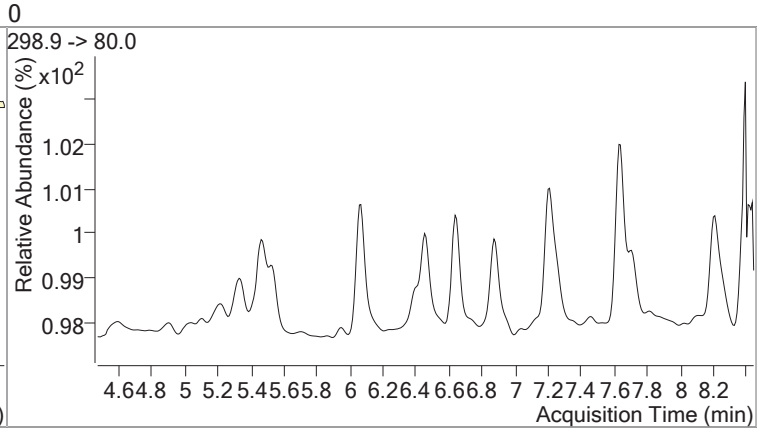
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	d	0		0				



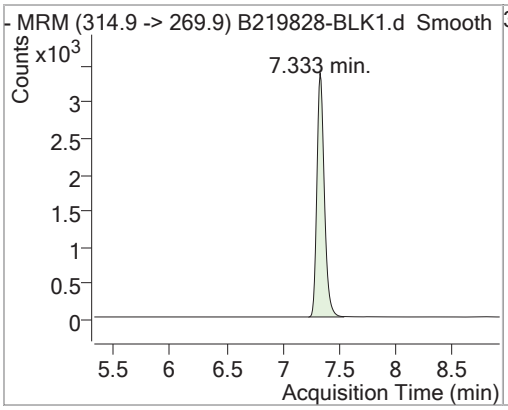


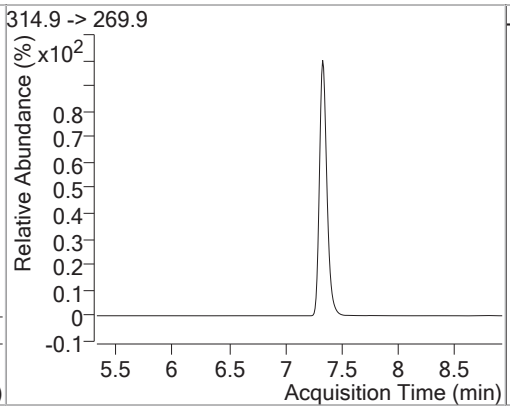
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PFBS	d	0		0				

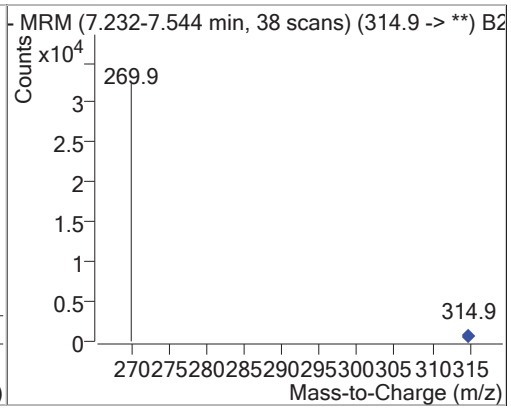




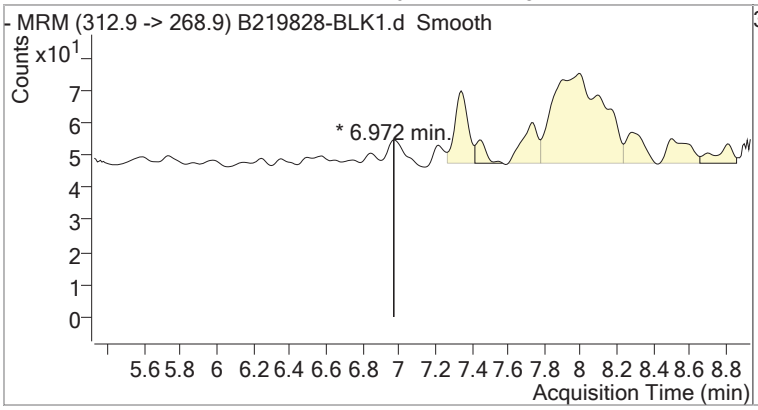
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	10614.6164	7.33	0.40	15455				

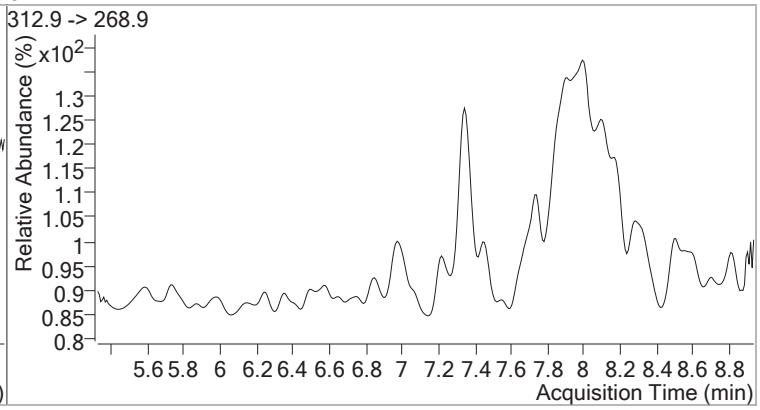




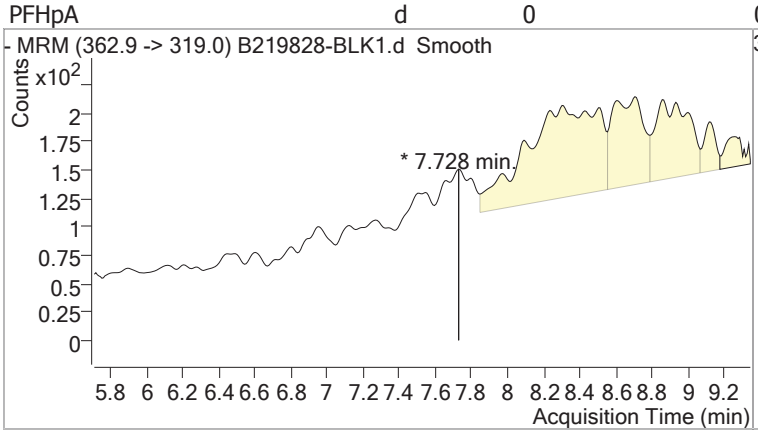


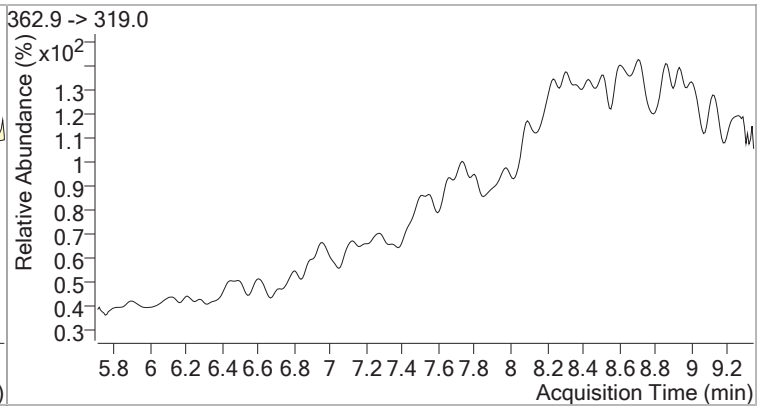
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	d	0		0				



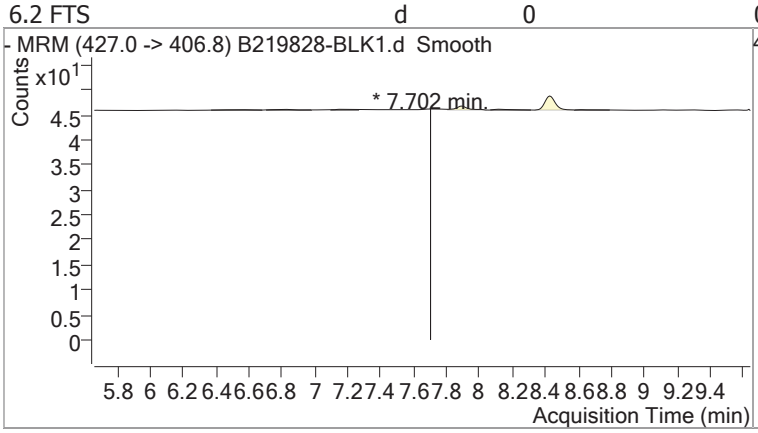


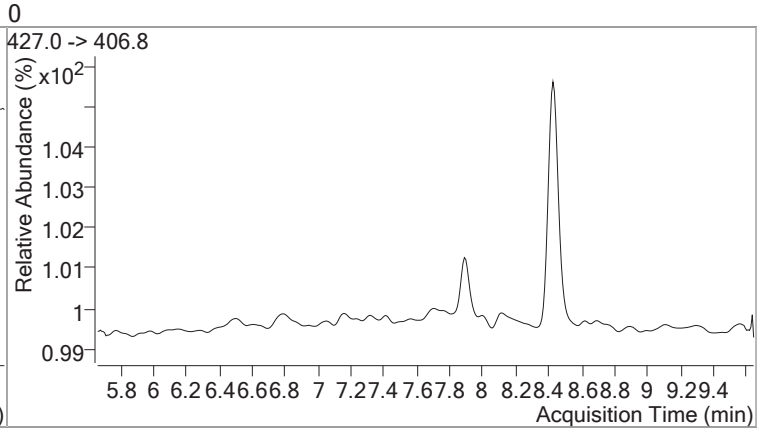
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	d	0		0				



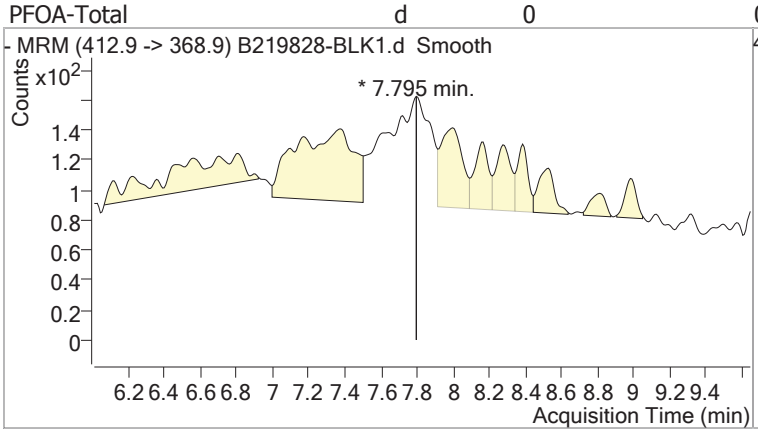


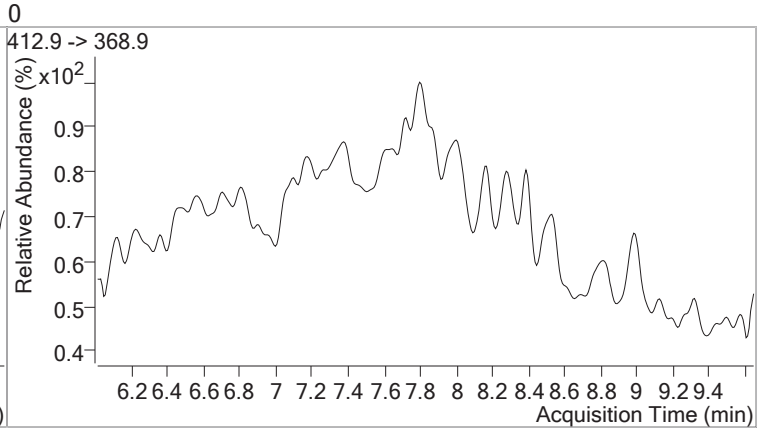
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	d	0		0				



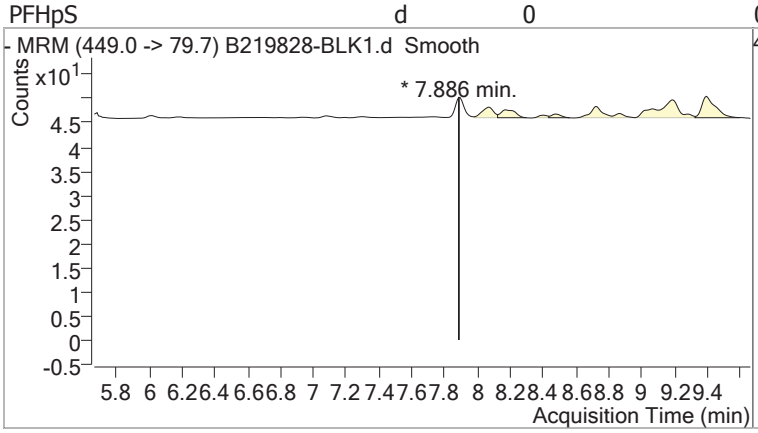


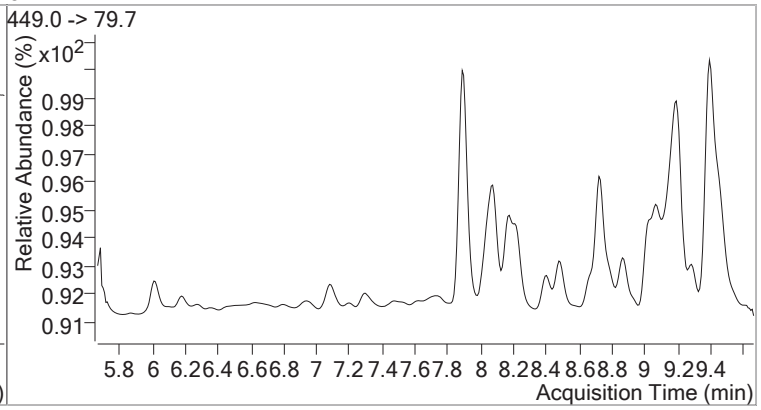
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	d	0		0				



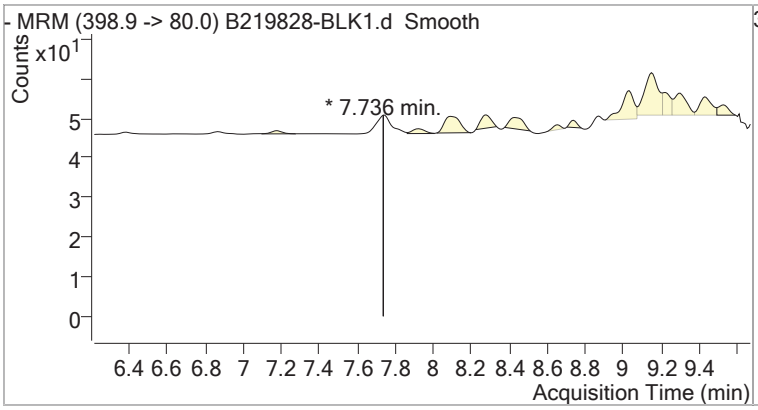


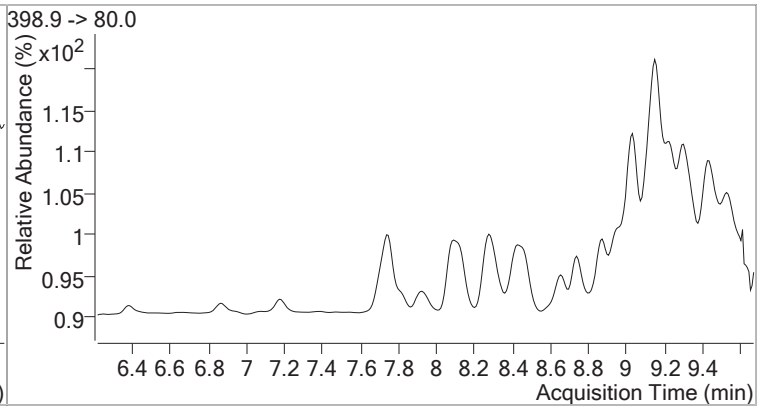
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	d	0		0				



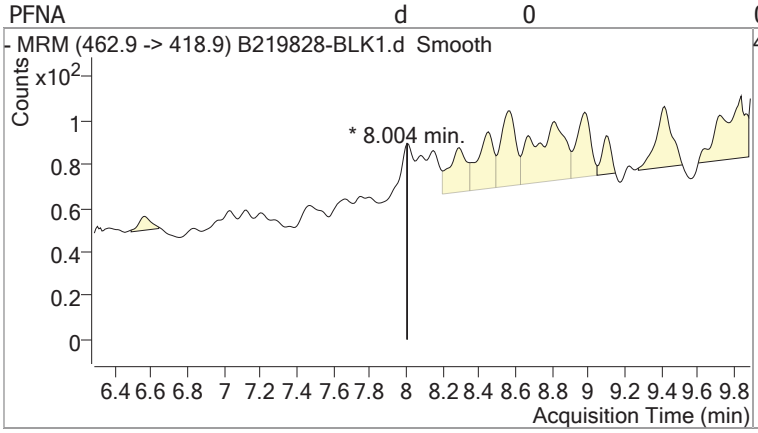


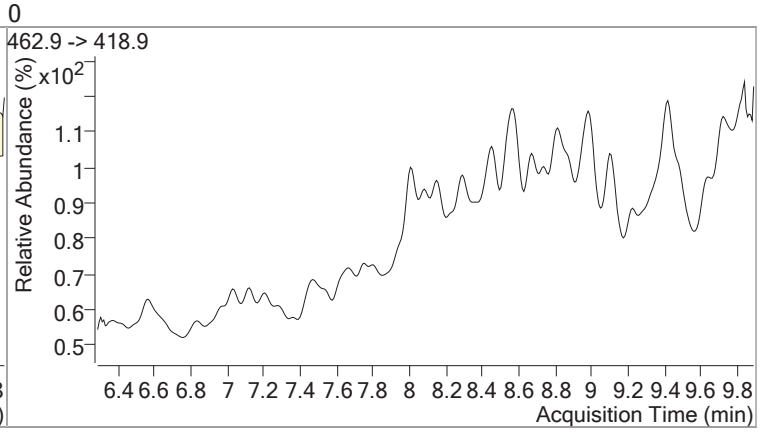
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	d	0		0				



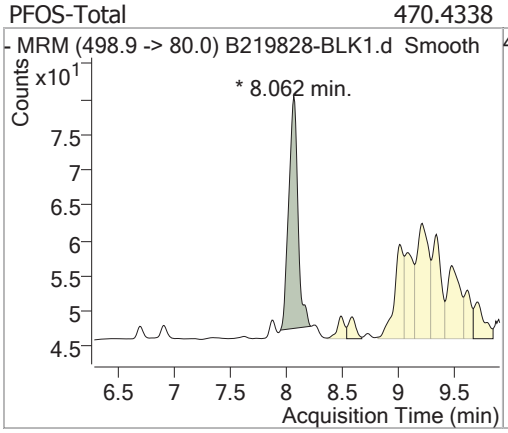


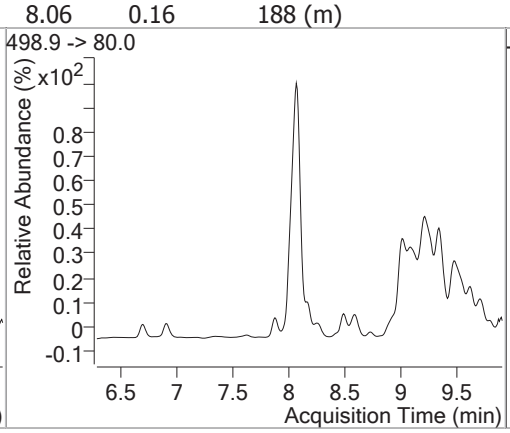
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	d	0		0				

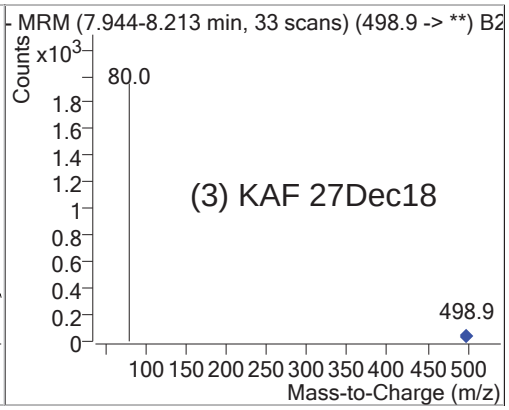




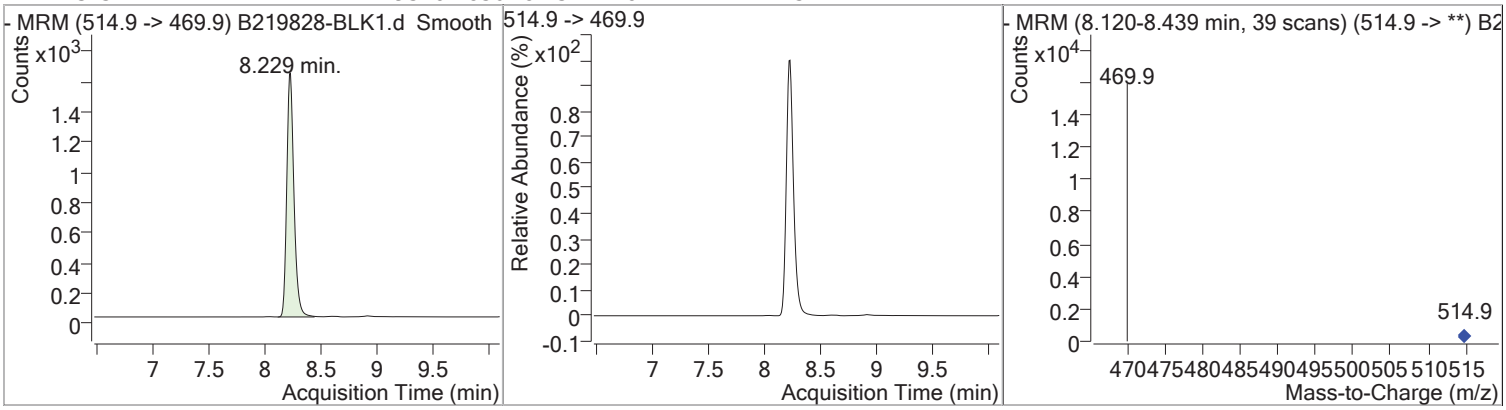
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	470.4338	8.06	0.16	188 (m)				



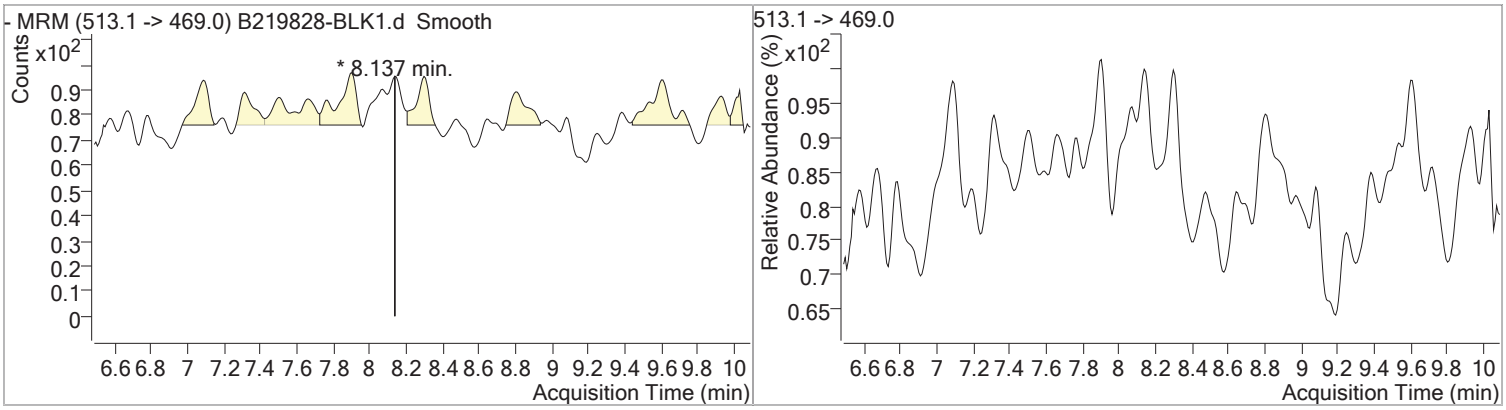




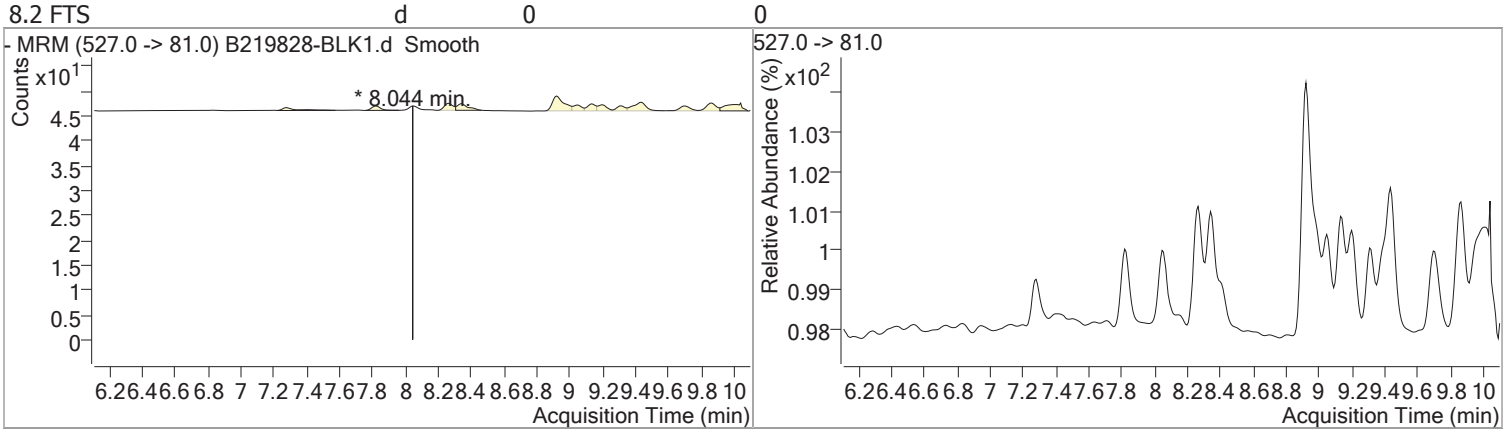
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	9310.4856	8.23	0.14	7145				



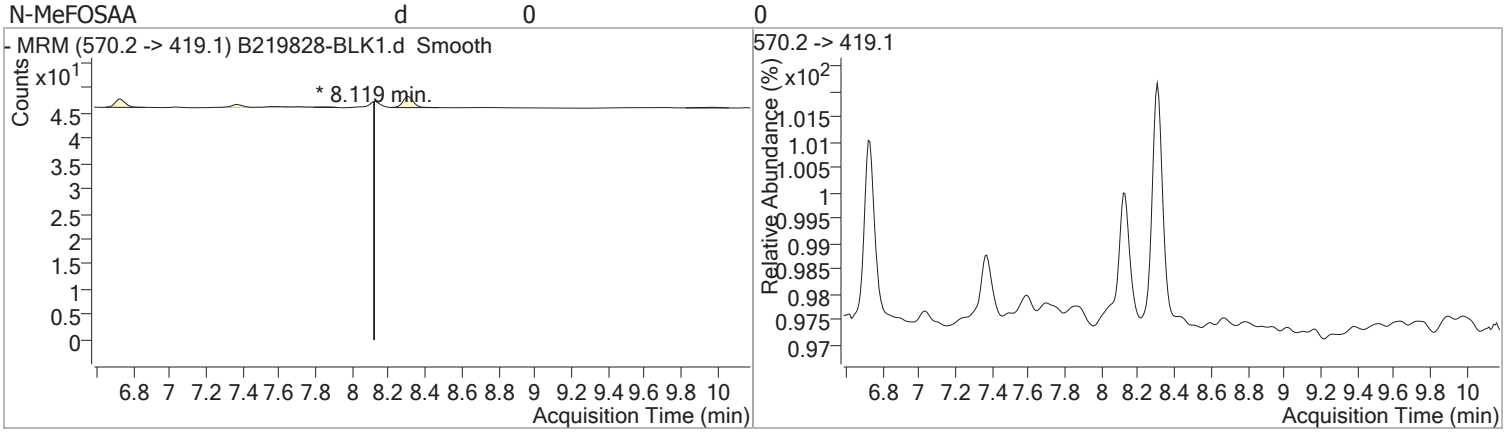
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	d	0		0				



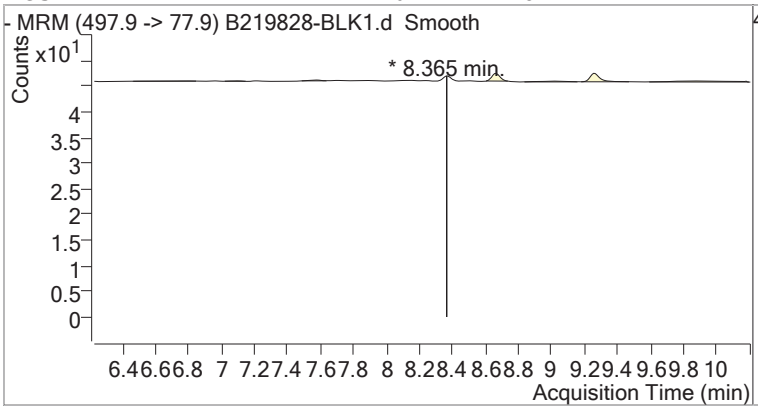
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	d	0		0				

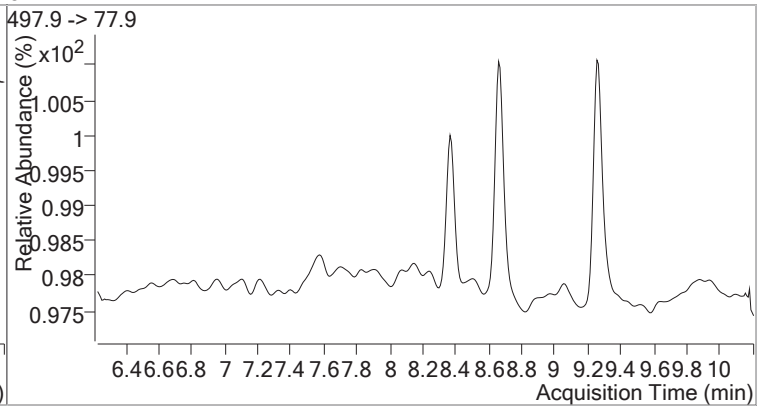


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	d	0		0				

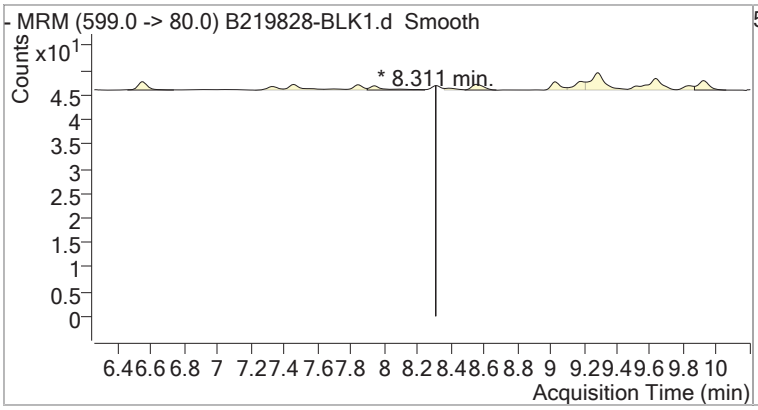


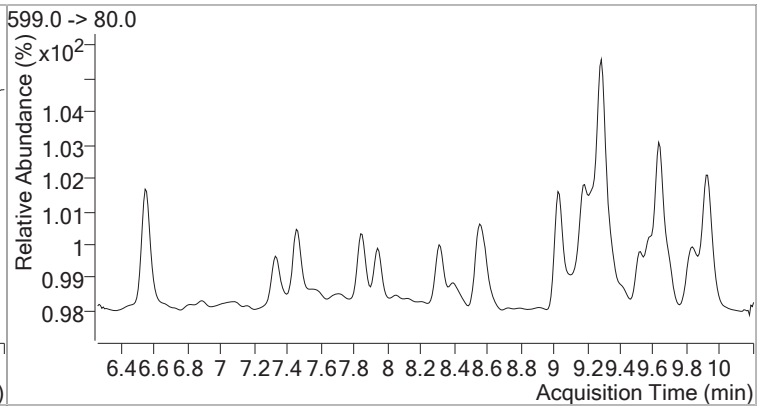
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	d	0		0				



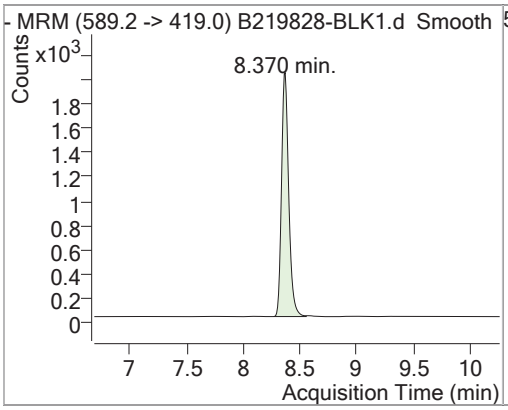


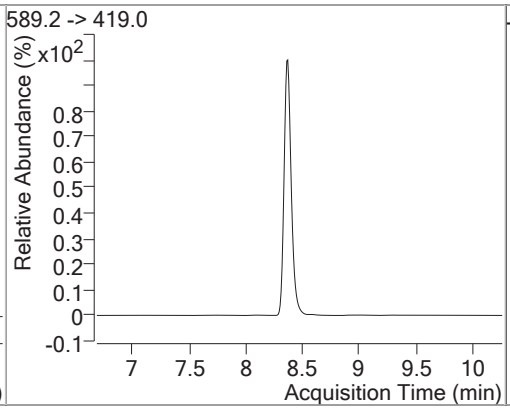
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	d	0		0				

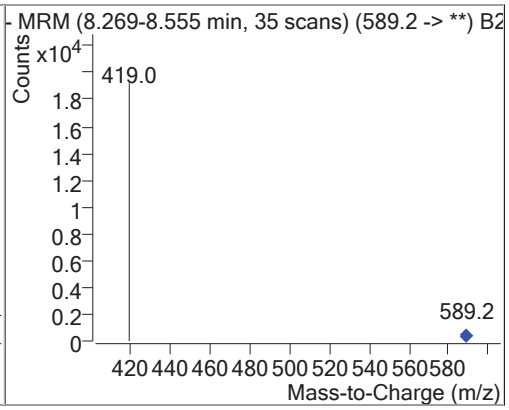




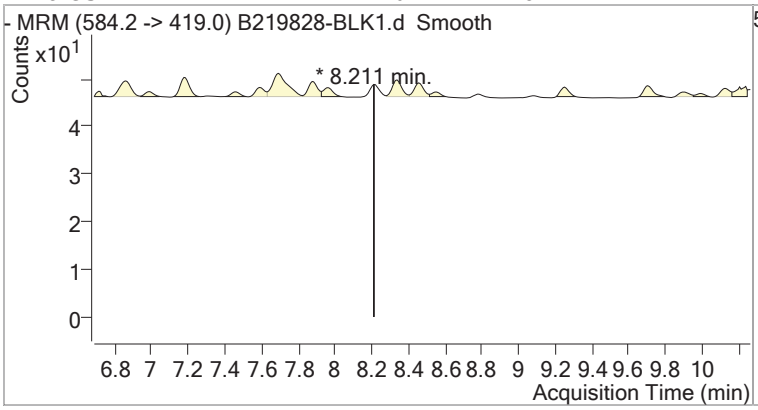
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	35962.3701	8.37	0.10	8862				

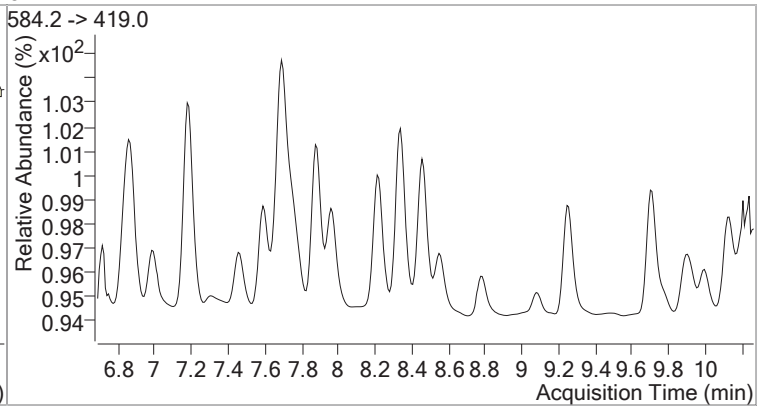




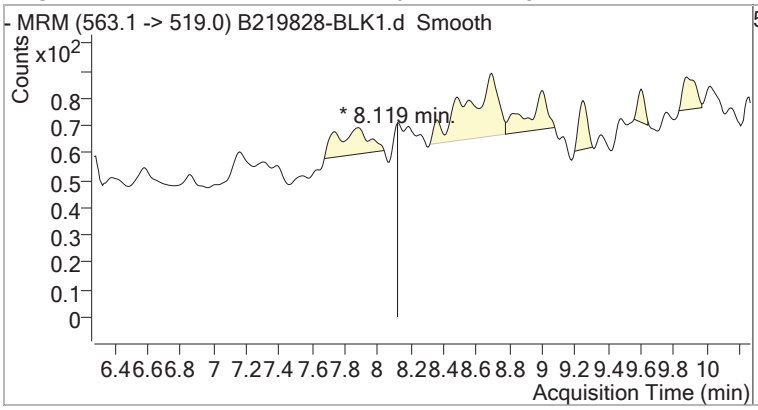


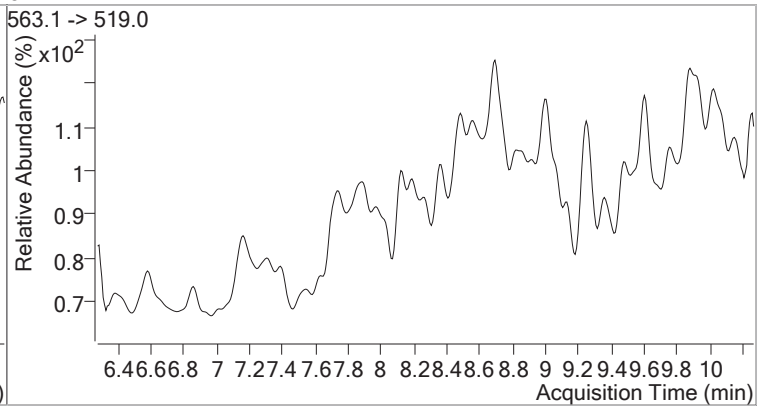
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	d	0		0				



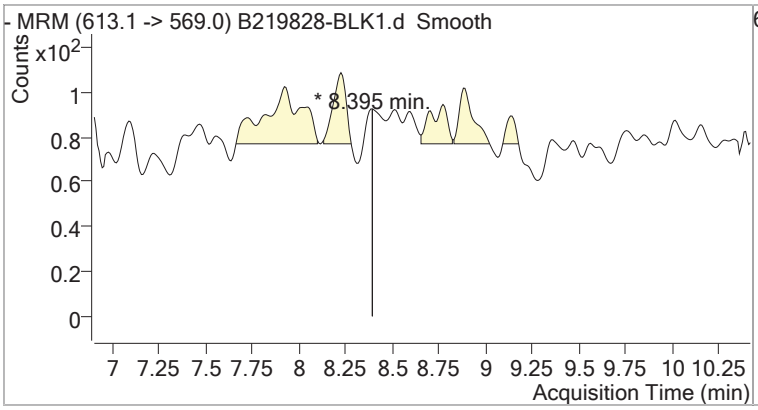


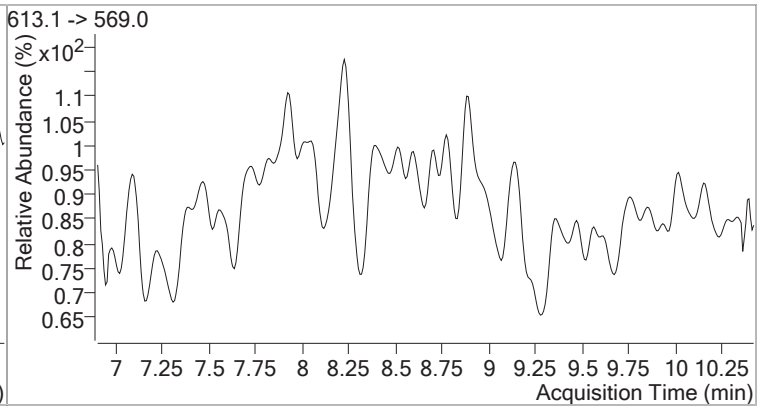
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	d	0		0				



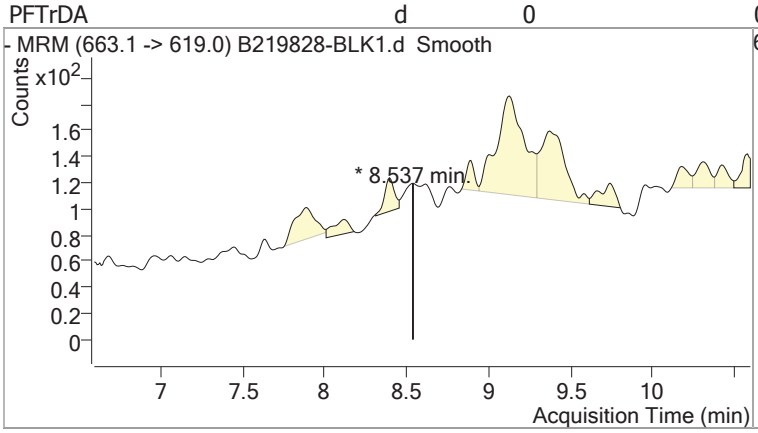


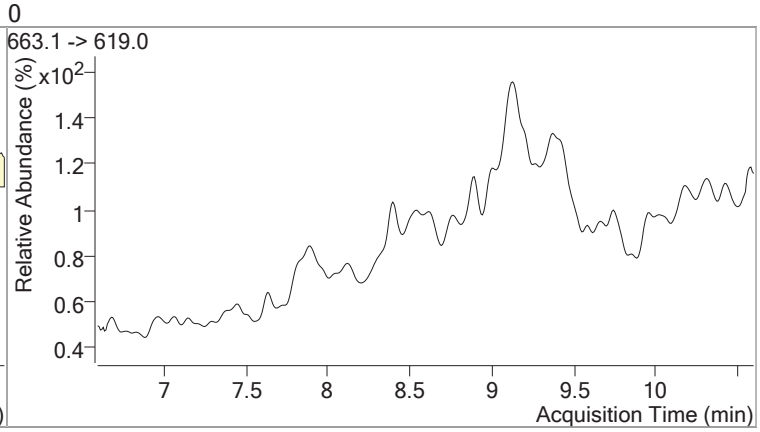
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	d	0		0				



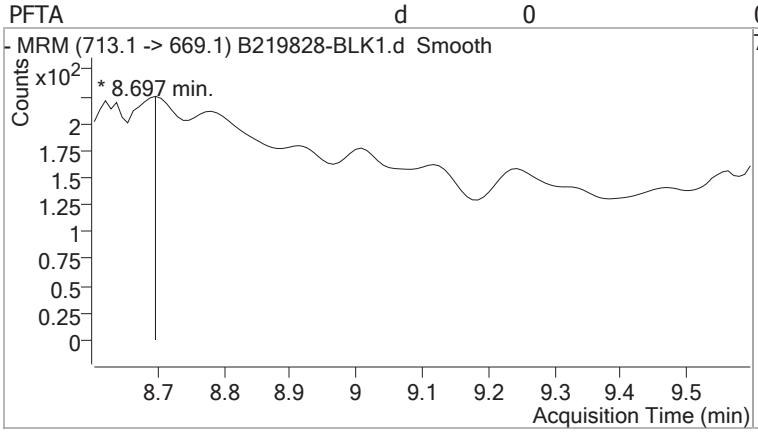


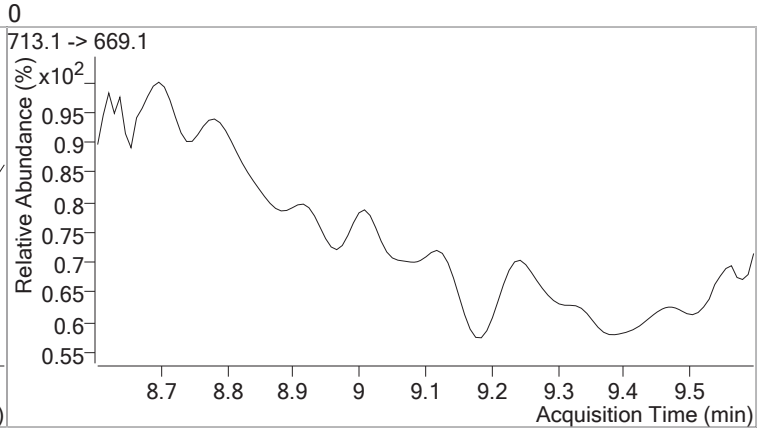
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	d	0		0				





Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	d	0		0				





1 - FORM I
ANALYSIS DATA SHEET

LCS

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY		Project:	60284002 - Utica, NY	
Matrix:	Water	Laboratory ID:	B219828-BS1	File ID:	lims export files full-002
Sampled:		Prepared:	12/24/18 08:00	Analyzed:	12/27/18 10:43
Solids:		Preparation:	EPA 537	Dilution:	
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
Instrument:	HPLC1				
Column:	1				

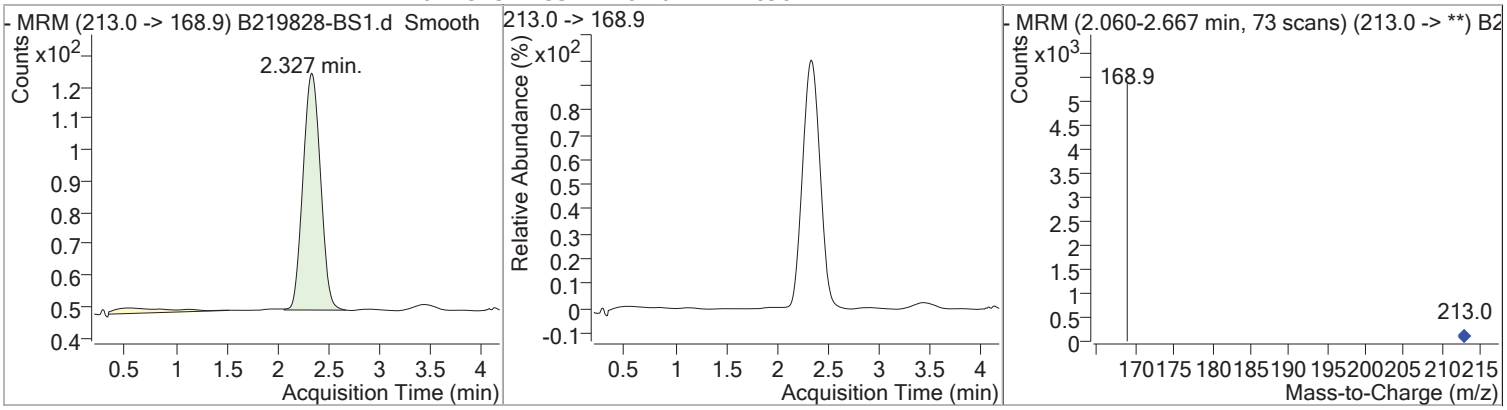
CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)	11.5	0.0	0.0	
307-24-4	Perfluorohexanoic acid (PFHxA)	12.9	0.0	0.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)	12.6	0.0	0.0	
375-22-4	Perfluorobutanoic acid (PFBA)	4.66	0.0	0.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)	12.2	0.0	0.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)	12.1	0.0	0.0	
75491-6	Perfluorooctanesulfonamide (FOSA)	0.824	0.0	0.0	L-03
2706-90-3	Perfluoropentanoic acid (PFPeA)	13.0	0.0	0.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)	11.1	0.0	0.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)	15.2	0.0	0.0	L-02
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	11.4	0.0	0.0	
335-67-1	Perfluorooctanoic acid (PFOA)	12.0	0.0	0.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	9.48	0.0	0.0	
375-95-1	Perfluorononanoic acid (PFNA)	13.0	0.0	0.0	
335-76-2	Perfluorodecanoic acid (PFDA)	11.8	0.0	0.0	
	NMeFOSAA	9.87	0.0	0.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)	11.8	0.0	0.0	
	NEtFOSAA	11.8	0.0	0.0	
307-55-1	Perfluorododecanoic acid (PFDoA)	10.9	0.0	0.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	10.3	0.0	0.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)	10.9	0.0	0.0	

Data File	B219828-BS1.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/27/2018 10:43:30 AM
Sample Name	B219828-BS1	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File	122018.m	Comment	
Tune File		Tune Date	
Batch Name	1.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

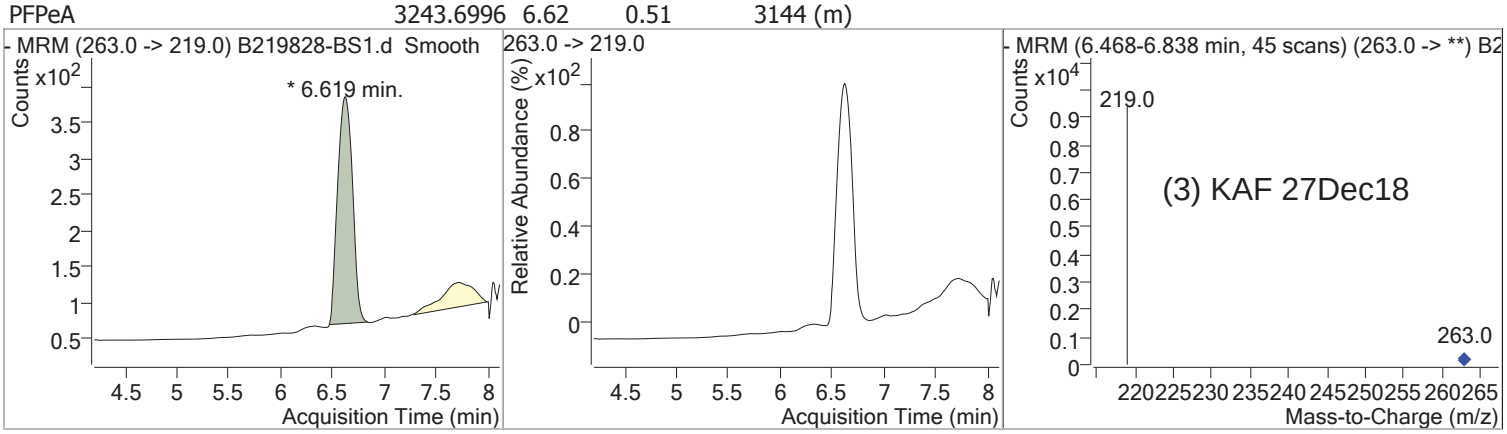
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	7.921	416.9 -> 371.9	13744	10000.0000	pg/ml	m	0.270
M PFOS C13	8.104	502.9 -> 80.0	9978	28700.0000	pg/ml	m	0.203
M d3-N-MeFOSAA	8.329	573.2 -> 419.0	12281	40000.0000	pg/ml		0.144
System Monitoring Compounds							
S PFHxA C13	7.342	314.9 -> 269.9	18019	10664.9134	pg/ml		0.404
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 106.65%			
S PFDA C13	8.263	514.9 -> 469.9	8481	9522.8891	pg/ml		0.170
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 95.23%			
S d5-N-MeFOSAA	8.395	589.2 -> 419.0	10544	39249.4437	pg/ml		0.128
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 98.12%			
Target Compounds							QValue
T PFBA	2.327	213.0 -> 168.9	898	1164.2975	pg/ml		100
T PFPeA	6.619	263.0 -> 219.0	3144	3243.6996	pg/ml	m	100
T PFBS	6.930	298.9 -> 80.0	927	2870.2509	pg/ml	m	100
T PFHxA	7.342	312.9 -> 268.9	5014	3229.0850	pg/ml		100
T PFHpA	7.678	362.9 -> 319.0	5264	3160.5824	pg/ml		100
T 6.2 FTS	7.912	427.0 -> 406.8	203	2767.1416	pg/ml		100
T PFOA-Total	7.913	412.9 -> 368.9	4743	3011.3588	pg/ml	m	100
T PFHpS	7.920	449.0 -> 79.7	629	3021.4108	pg/ml		100
T PFHxS-Total	7.703	398.9 -> 80.0	832	2838.3643	pg/ml		100
T PFNA	8.105	462.9 -> 418.9	2600	3248.7223	pg/ml	m	100
T PFOS-Total	8.104	498.9 -> 80.0	1040	2369.6145	pg/ml		100
T PFDA	8.255	513.1 -> 469.0	4025	2958.6411	pg/ml		100
T 8.2 FTS	8.262	527.0 -> 81.0	298	3798.3343	pg/ml	m	100
T N-MeFOSAA	8.329	570.2 -> 419.1	864	2466.3477	pg/ml		100
T FOSA	8.382	497.9 -> 77.9	224	206.0923	pg/ml	m	100
T PFDS	8.386	599.0 -> 80.0	794	3056.9348	pg/ml		100
T N-EtFOSAA	8.396	584.2 -> 419.0	843	2955.5144	pg/ml		100
T PFUnA	8.388	563.1 -> 519.0	4025	2943.1260	pg/ml		100
T PFDoA	8.512	613.1 -> 569.0	5059	2734.3974	pg/ml		100
T PFTrDA	8.630	663.1 -> 619.0	5257	2570.4588	pg/ml		100
T PFTA	8.755	713.1 -> 669.1	4297	2722.5225	pg/ml		100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

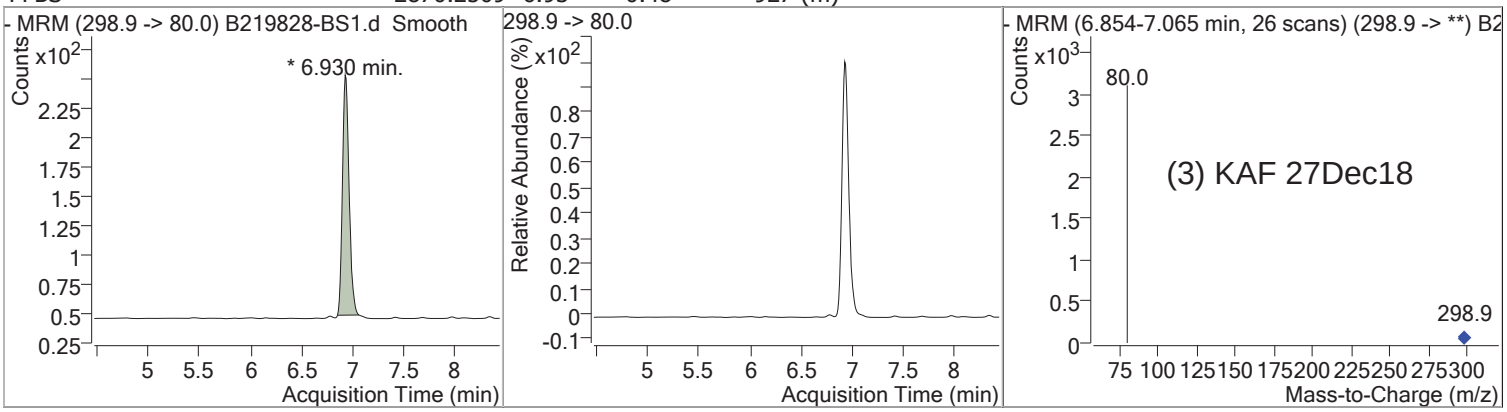
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	1164.2975	2.33	0.16	898				



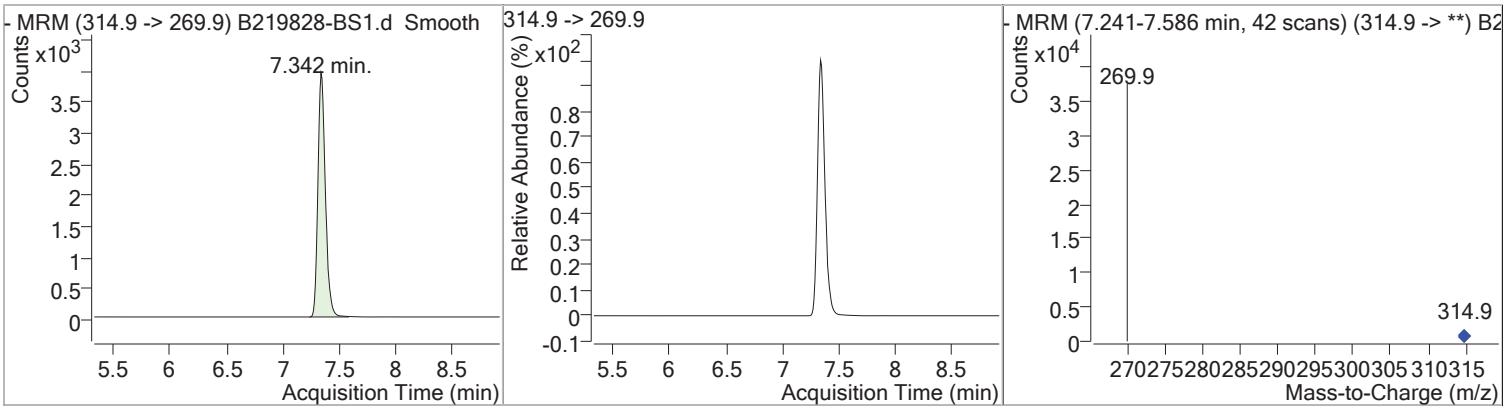
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	3243.6996	6.62	0.51	3144 (m)				



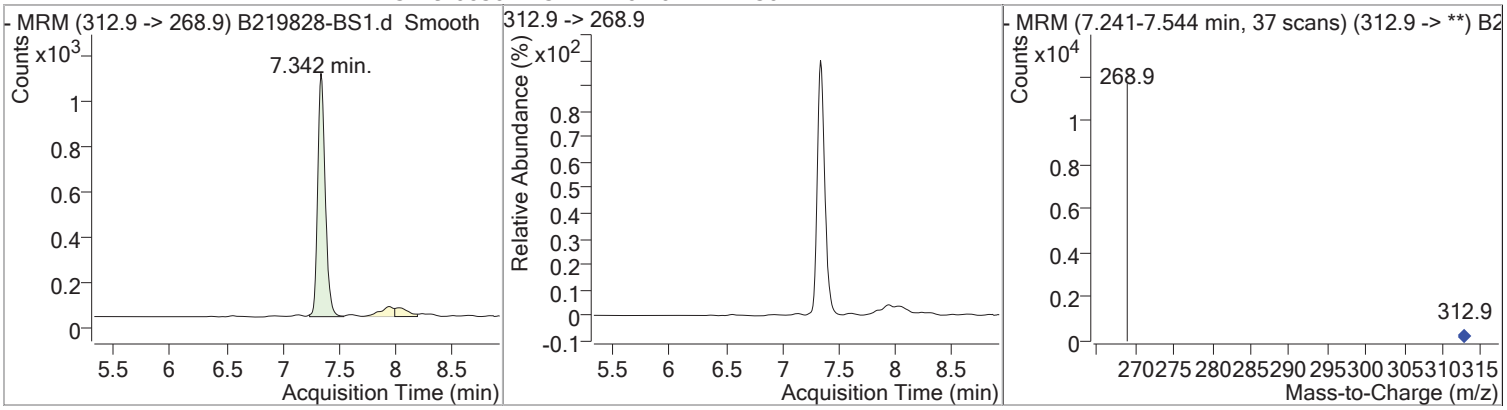
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	2870.2509	6.93	0.48	927 (m)				



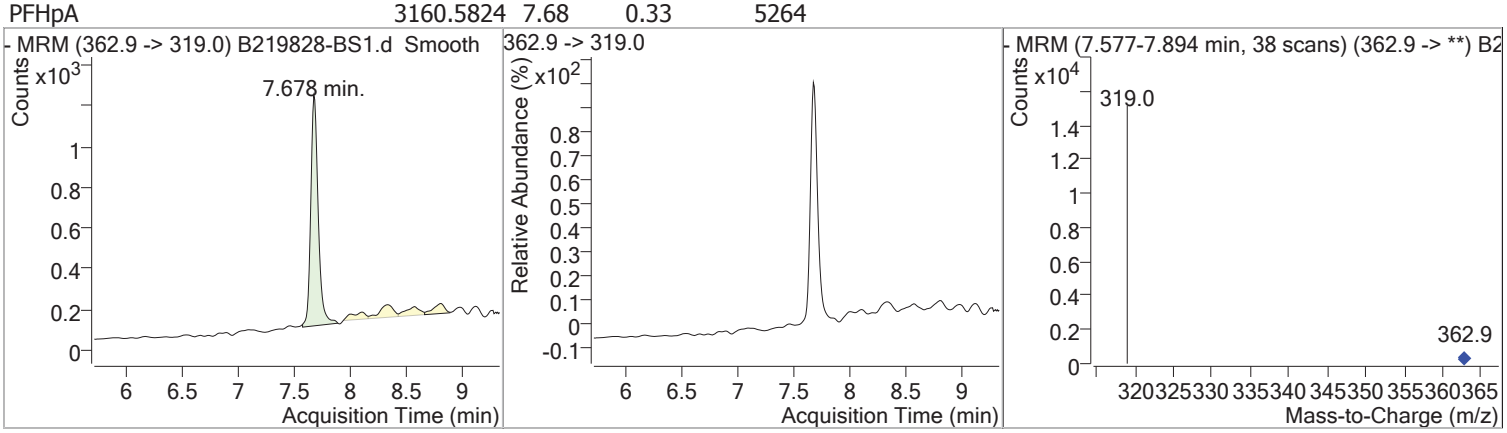
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	10664.9134	7.34	0.40	18019				



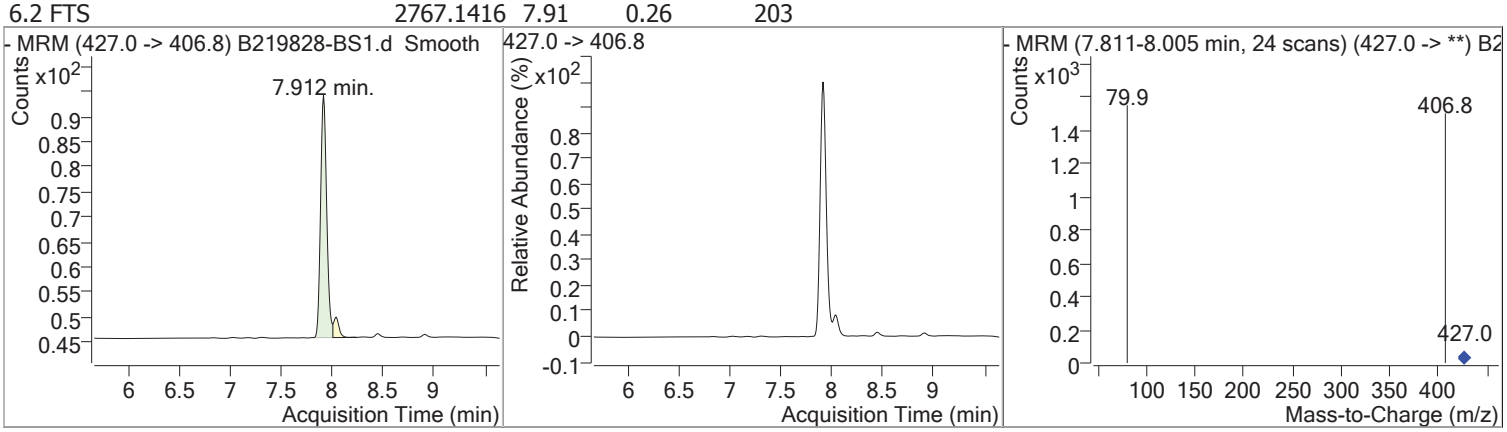
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	3229.0850	7.34	0.40	5014				



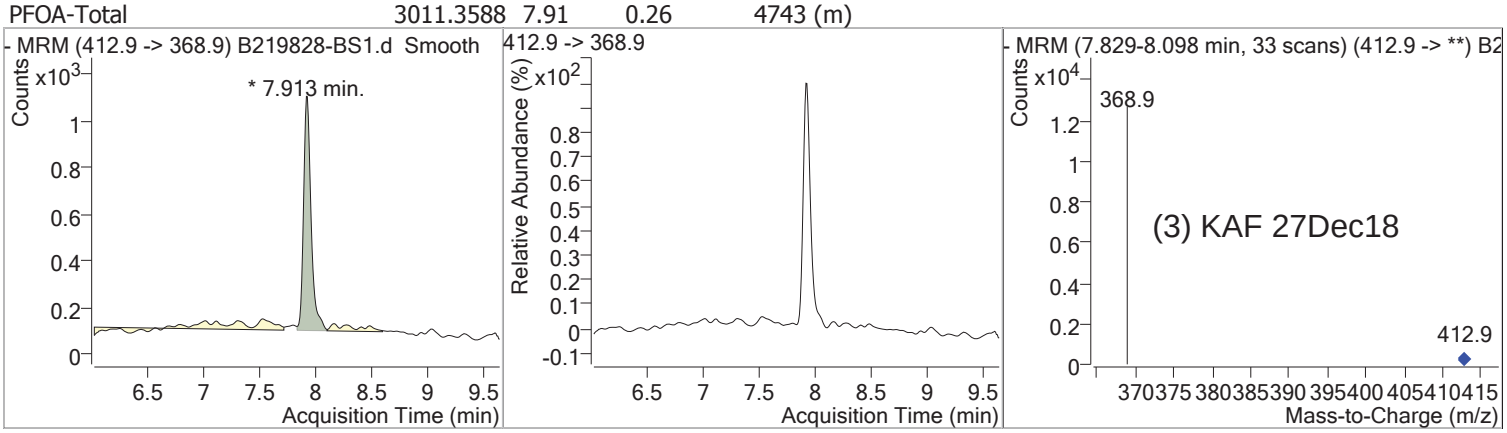
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	3160.5824	7.68	0.33	5264				



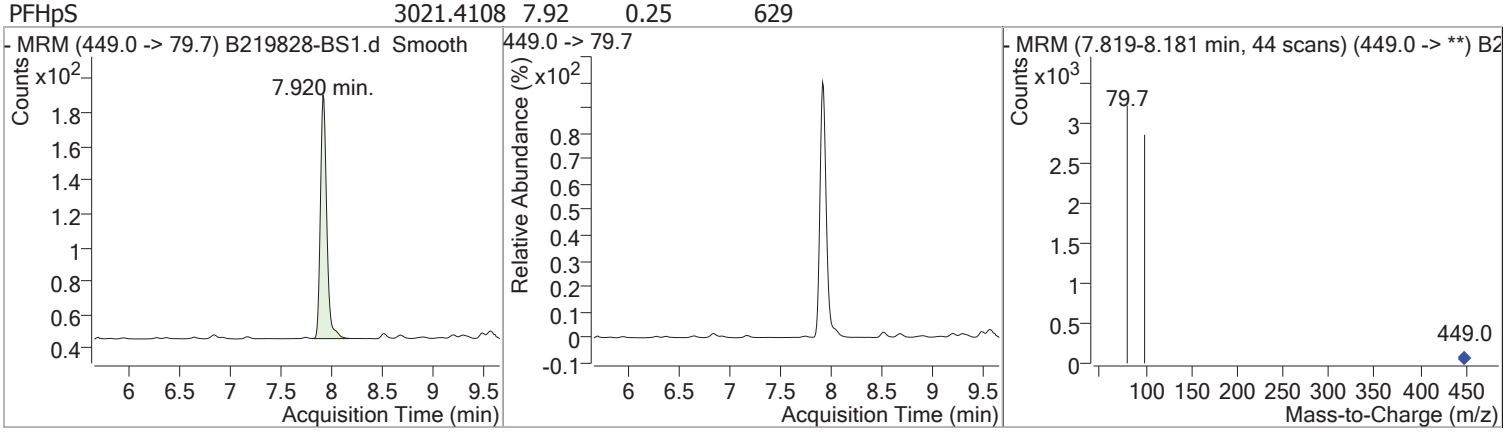
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	2767.1416	7.91	0.26	203				



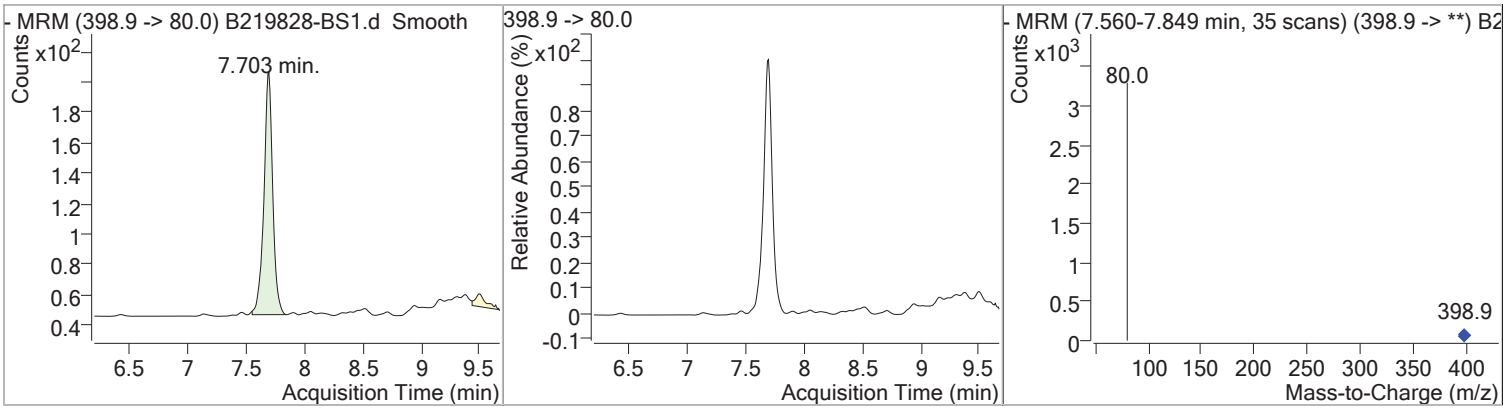
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	3011.3588	7.91	0.26	4743 (m)				



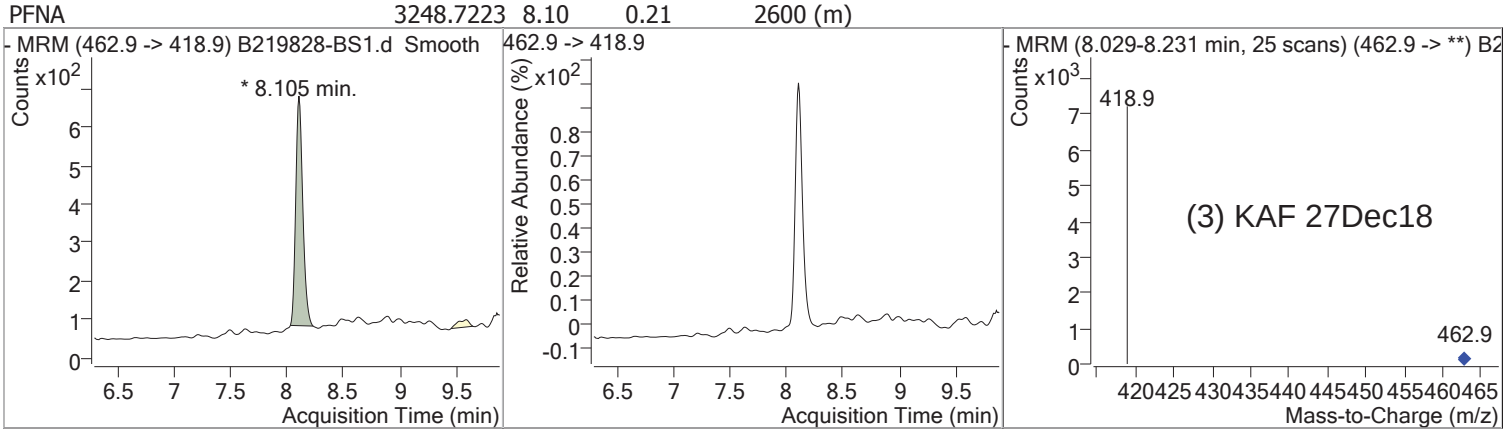
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	3021.4108	7.92	0.25	629				



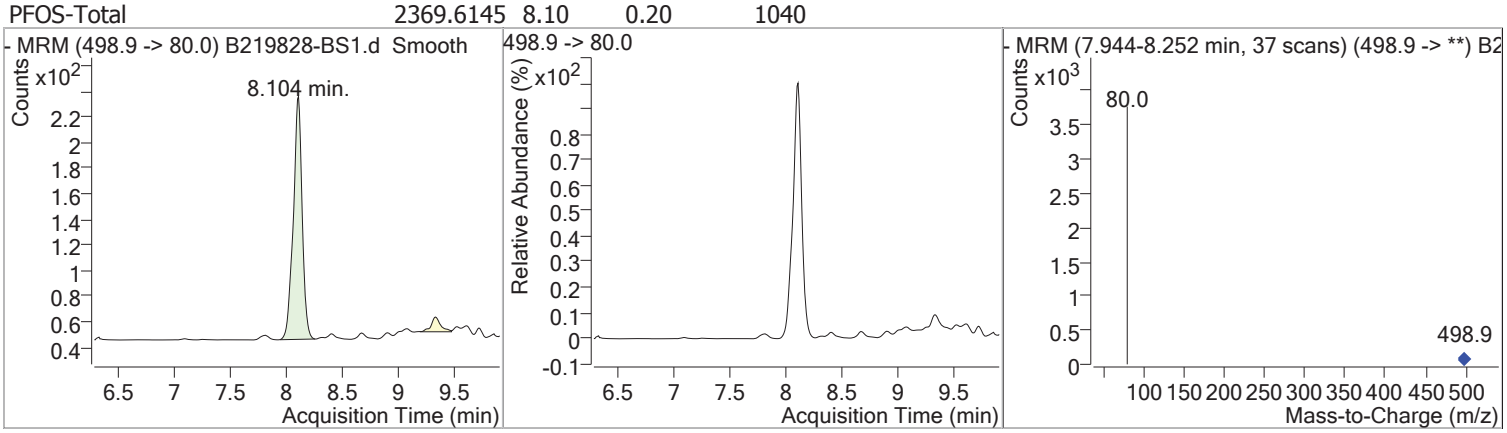
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	2838.3643	7.70	0.03	832				



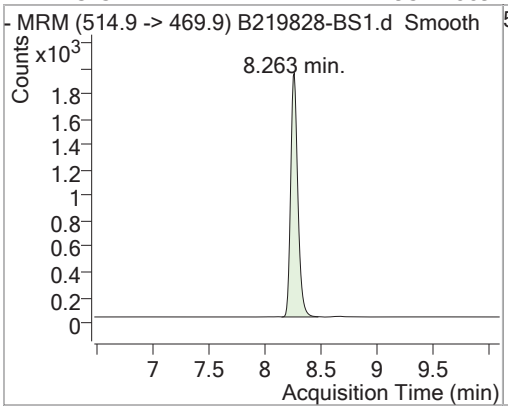
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	3248.7223	8.10	0.21	2600 (m)				

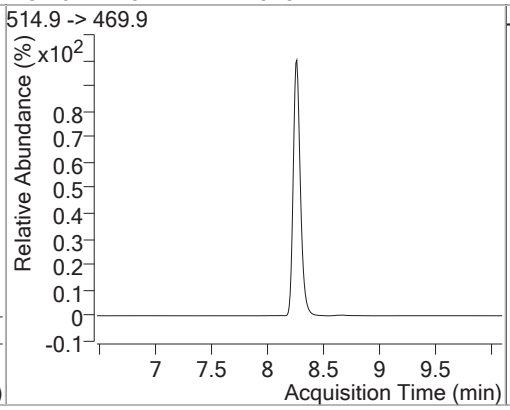


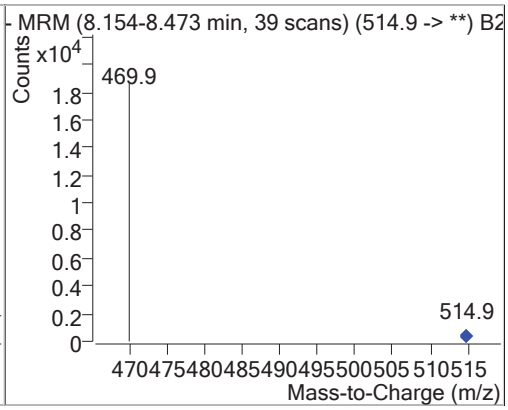
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	2369.6145	8.10	0.20	1040				



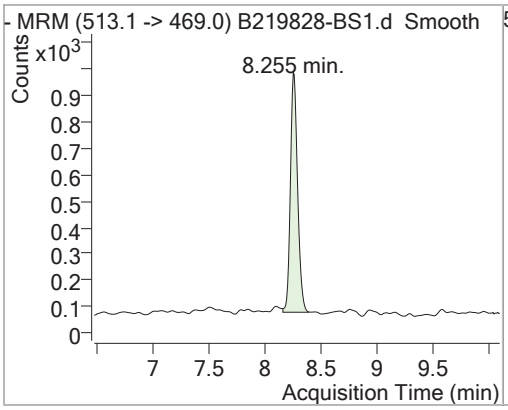
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	9522.8891	8.26	0.17	8481				

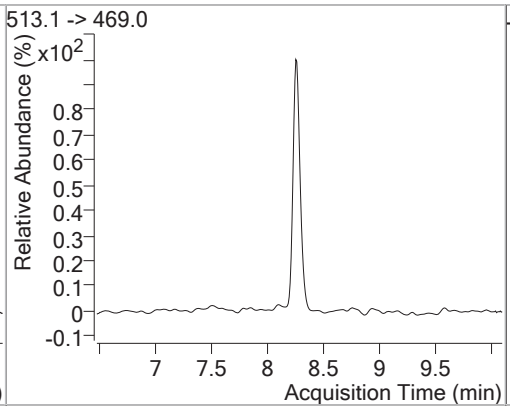


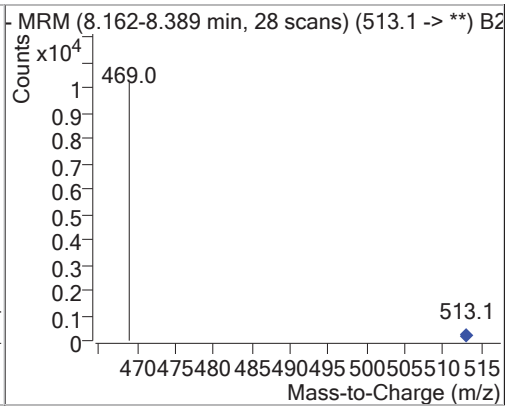




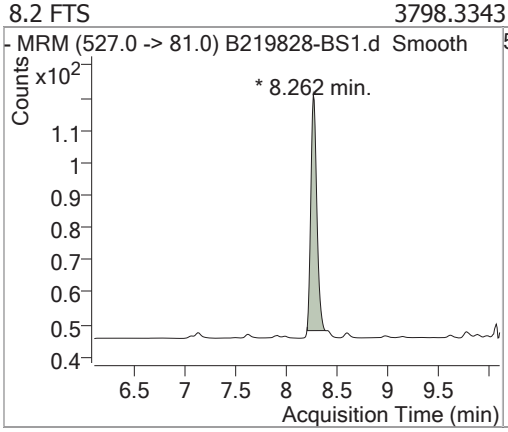
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	2958.6411	8.25	0.16	4025				

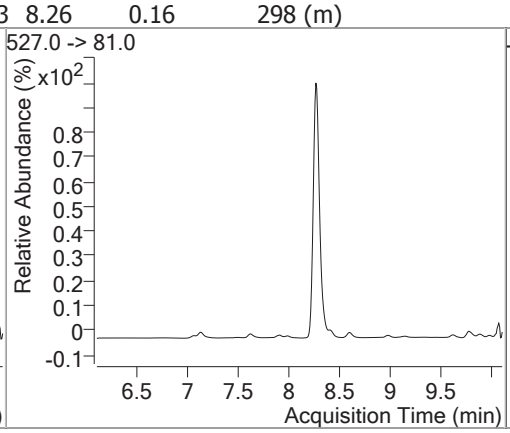


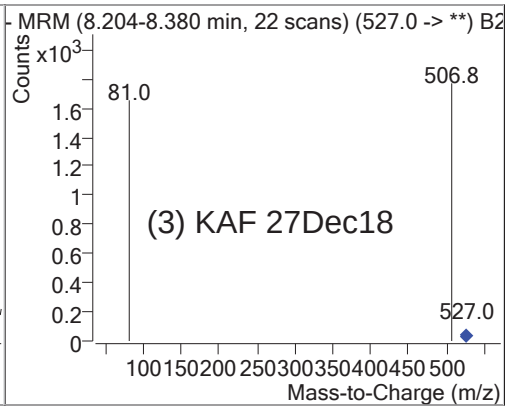




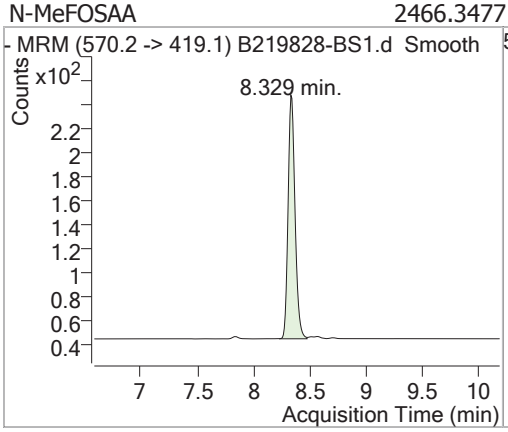
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	3798.3343	8.26	0.16	298 (m)				

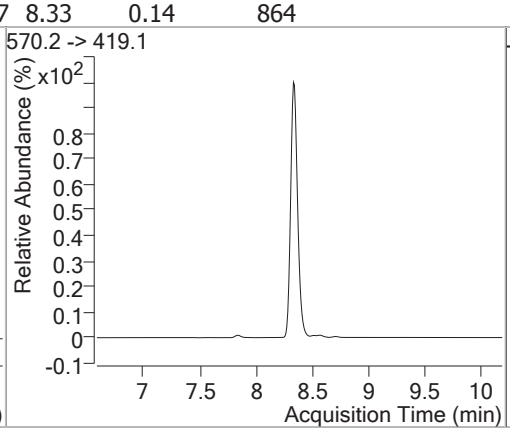


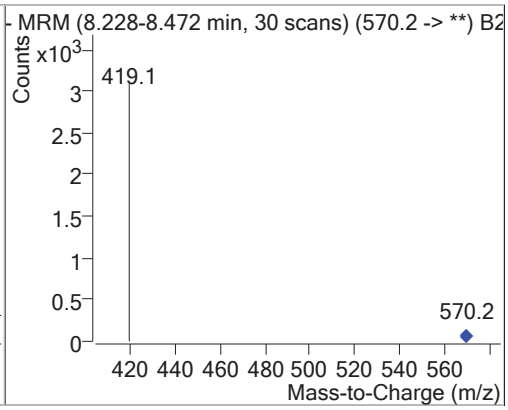




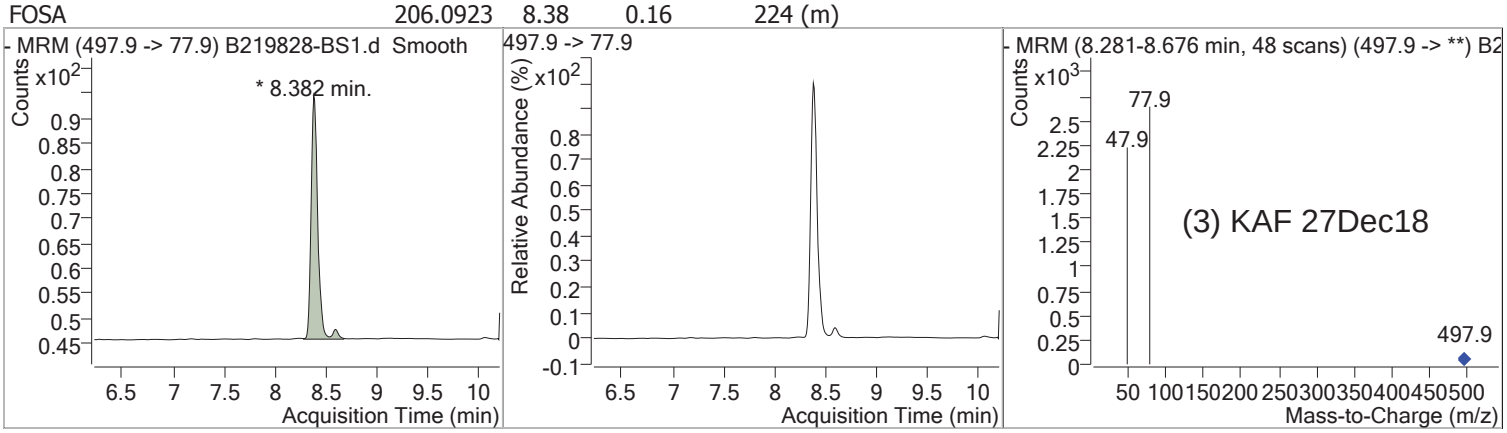
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	2466.3477	8.33	0.14	864				



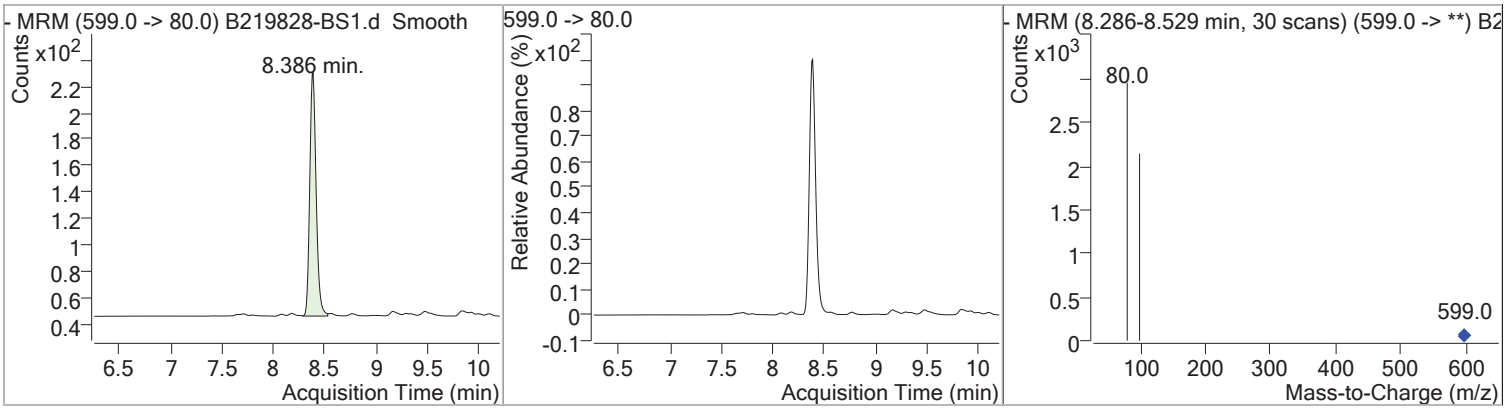




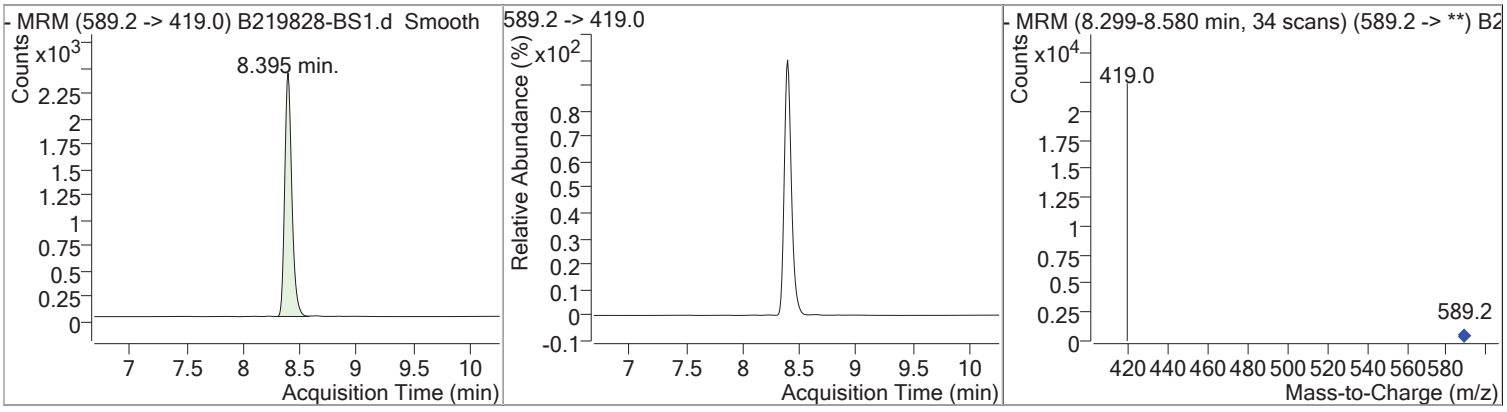
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	206.0923	8.38	0.16	224 (m)				



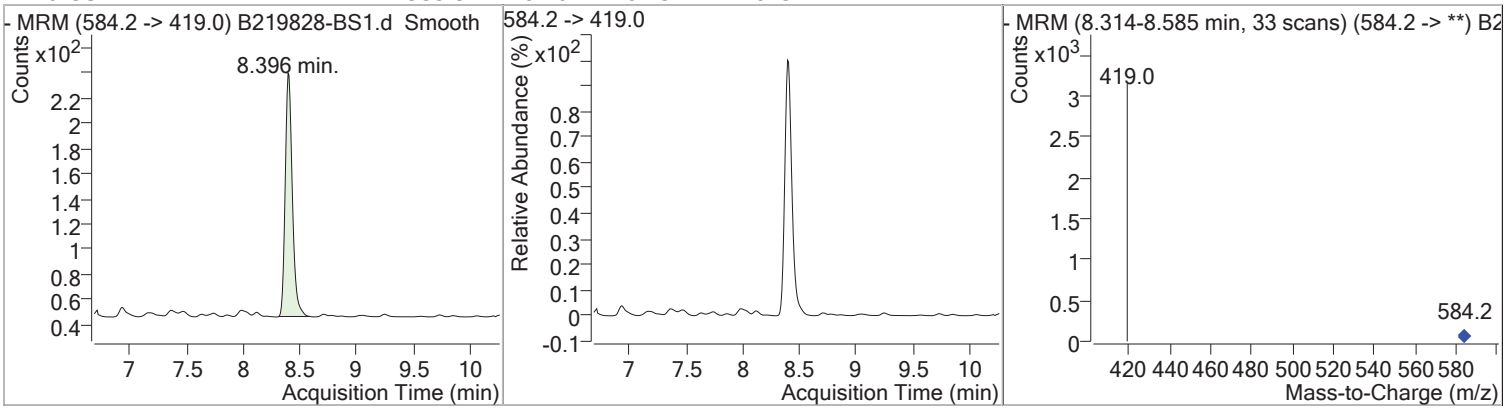
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	3056.9348	8.39	0.13	794				



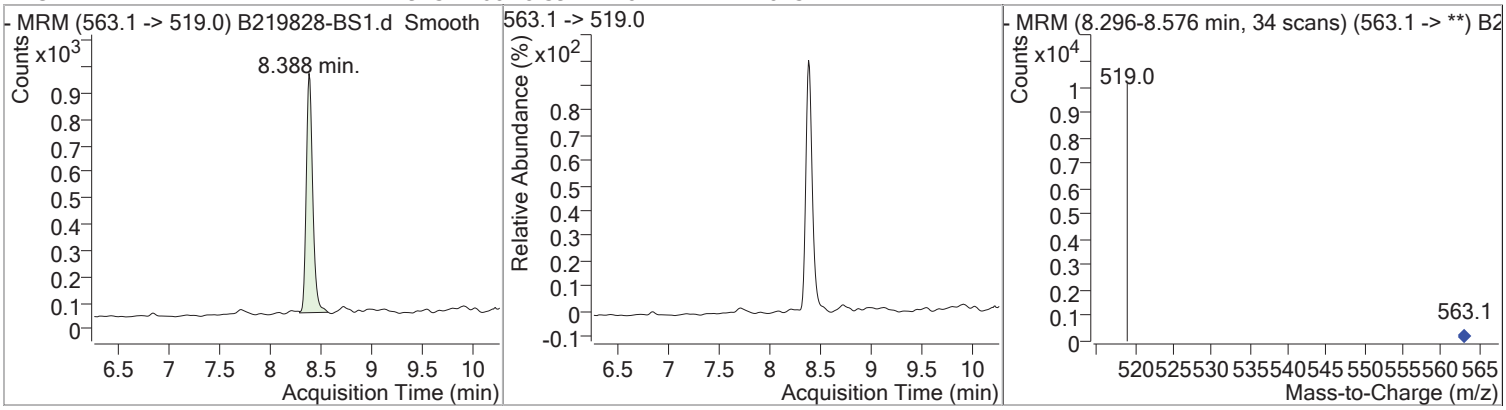
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	39249.4437	8.40	0.13	10544				



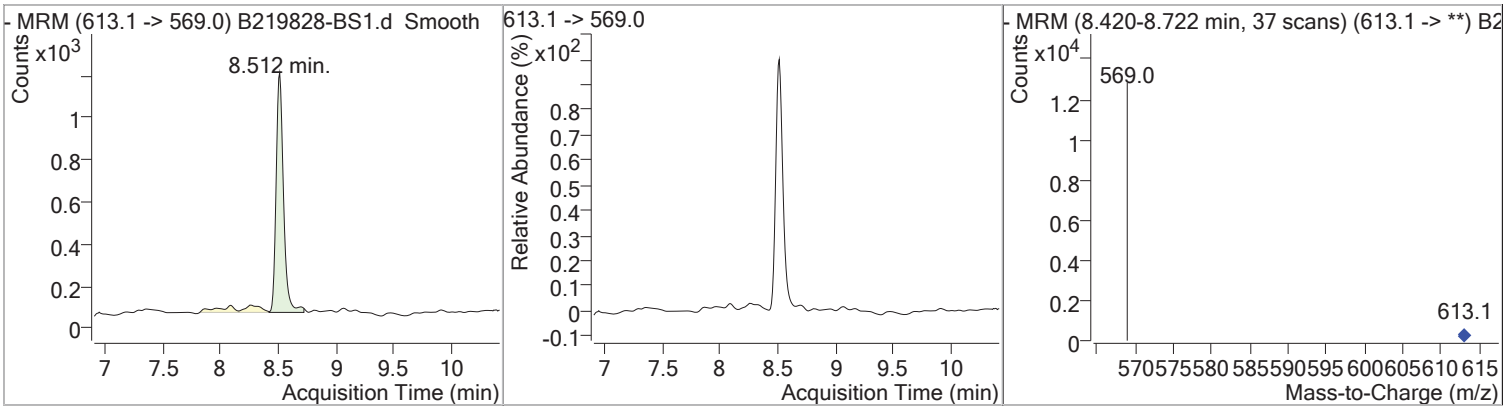
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	2955.5144	8.40	0.13	843				



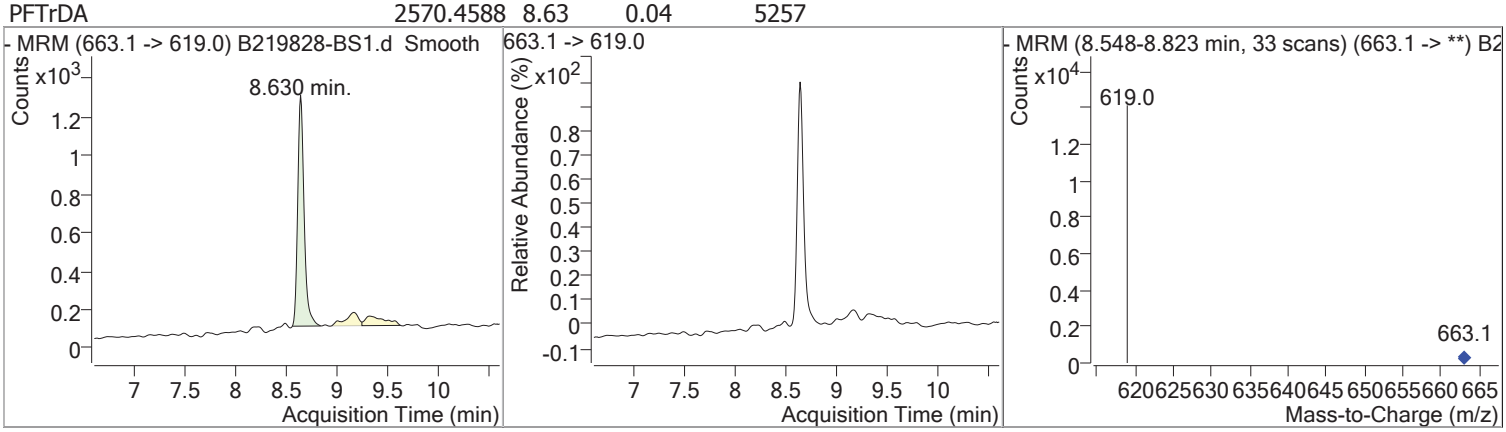
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	2943.1260	8.39	0.12	4025				



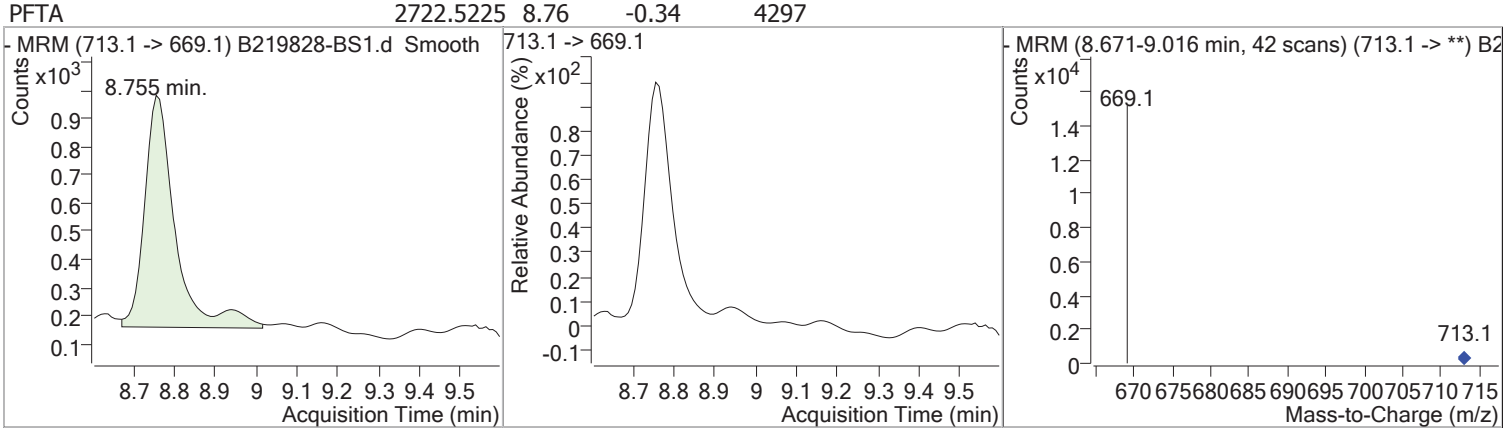
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	2734.3974	8.51	0.09	5059				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	2570.4588	8.63	0.04	5257				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	2722.5225	8.76	-0.34	4297				



1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY		Project:	60284002 - Utica, NY	
Matrix:	Water	Laboratory ID:	B219828-MS1	File ID:	lims export files full-003
Sampled:		Prepared:	12/24/18 08:00	Analyzed:	12/27/18 10:56
Solids:		Preparation:	EPA 537	Dilution:	
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
Instrument:	HPLC1				
Column:	1				

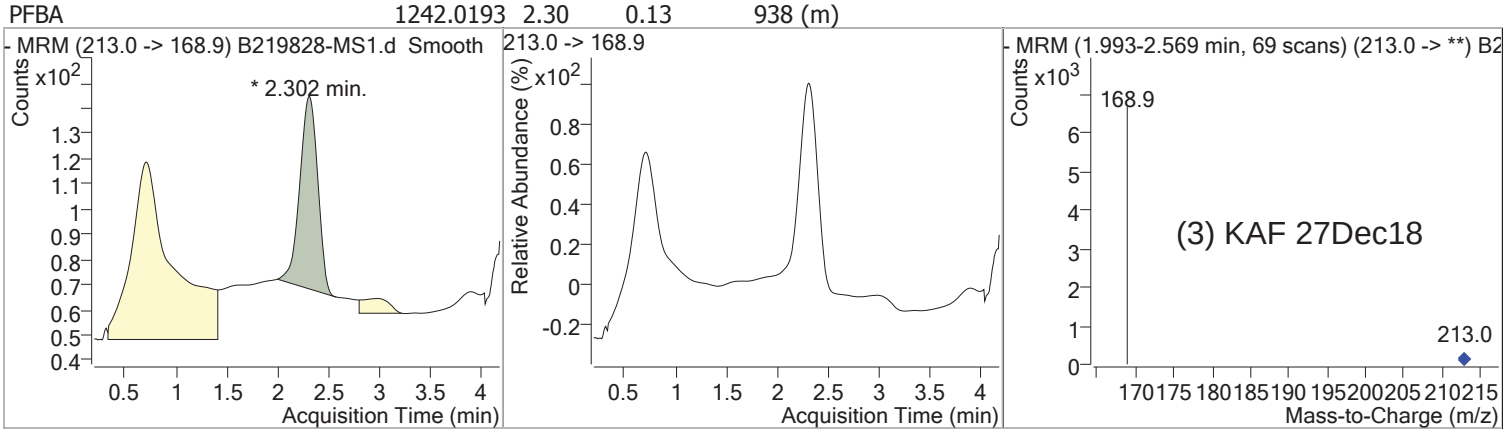
CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)	19.7	2.0	2.0	MS-12
307-24-4	Perfluorohexanoic acid (PFHxA)	14.9	2.0	2.0	MS-12
375-85-9	Perfluoroheptanoic acid (PFHpA)	13.4	2.0	2.0	MS-12
375-22-4	Perfluorobutanoic acid (PFBA)	4.97	2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)	12.1	2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)	15.5	2.0	2.0	MS-12
75491-6	Perfluorooctanesulfonamide (FOSA)	4.40	2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)	12.5	2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)	46.0	2.0	2.0	MS-12
	8:2 Fluorotelomersulfonate (8:2 FTS)	21.7	2.0	2.0	MS-12
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	19.4	2.0	2.0	MS-11
335-67-1	Perfluorooctanoic acid (PFOA)	21.7	2.0	2.0	MS-11
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	19.0	2.0	2.0	MS-11
375-95-1	Perfluorononanoic acid (PFNA)	14.1	0.0	2.0	MS-12
335-76-2	Perfluorodecanoic acid (PFDA)	10.2	2.0	2.0	
	NMeFOSAA	8.83	2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)	10.4	2.0	2.0	
	NEtFOSAA	12.1	2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)	8.18	2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	6.01	2.0	2.0	MS-08
376-06-7	Perfluorotetradecanoic acid (PFTA)	4.00	2.0	2.0	MS-08

Data File	B219828-MS1.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/27/2018 10:56:15 AM
Sample Name	B219828-MS1	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File	122018.m	Comment	
Tune File		Tune Date	
Batch Name	1.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

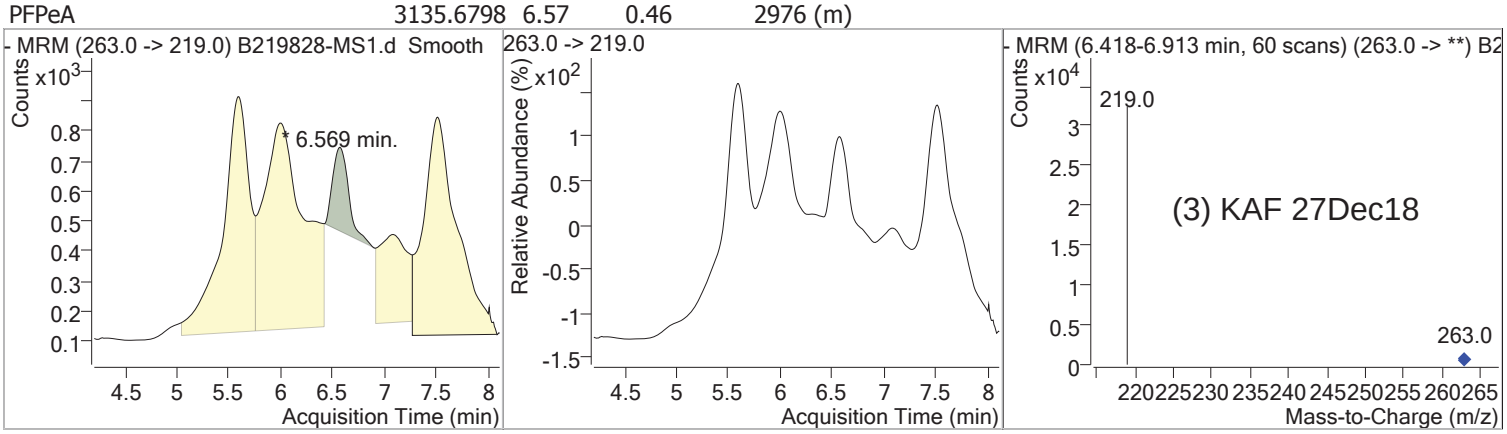
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	7.862	416.9 -> 371.9	13458	10000.0000	pg/ml		0.211
M PFOS C13	8.045	502.9 -> 80.0	8041	28700.0000	pg/ml		0.144
M d3-N-MeFOSAA	8.278	573.2 -> 419.0	11814	40000.0000	pg/ml		0.094
System Monitoring Compounds							
S PFHxA C13	7.300	314.9 -> 269.9	15497	9367.1850	pg/ml		0.362
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 93.67%			
S PFDA C13	8.204	514.9 -> 469.9	7092	8132.7937	pg/ml		0.111
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 81.33%			
S d5-N-MeFOSAA	8.345	589.2 -> 419.0	8869	34319.2002	pg/ml		0.077
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 85.80%			
Target Compounds							QValue
T PFBA	2.302	213.0 -> 168.9	938	1242.0193	pg/ml	m	100
T PFPeA	6.569	263.0 -> 219.0	2976	3135.6798	pg/ml	m	100
T PFBS	6.880	298.9 -> 80.0	1280	4917.9409	pg/ml		100
T PFHxA	7.300	312.9 -> 268.9	5648	3715.3420	pg/ml	m	100
T PFHpA	7.627	362.9 -> 319.0	5481	3361.0131	pg/ml		100
T 6.2 FTS	7.862	427.0 -> 406.8	680	11487.6463	pg/ml		100
T PFOA-Total	7.862	412.9 -> 368.9	8366	5424.8025	pg/ml		100
T PFHpS	7.869	449.0 -> 79.7	651	3879.2667	pg/ml		100
T PFHxS-Total	7.652	398.9 -> 80.0	1148	4858.4211	pg/ml		100
T PFNA	8.054	462.9 -> 418.9	2768	3531.2428	pg/ml		100
T PFOS-Total	8.045	498.9 -> 80.0	1683	4760.5803	pg/ml		100
T PFDA	8.204	513.1 -> 469.0	3409	2559.2139	pg/ml		100
T 8.2 FTS	8.212	527.0 -> 81.0	344	5427.6728	pg/ml		100
T N-MeFOSAA	8.279	570.2 -> 419.1	744	2206.4944	pg/ml		100
T FOSA	8.340	497.9 -> 77.9	1150	1098.9352	pg/ml		100
T PFDS	8.336	599.0 -> 80.0	634	3027.4326	pg/ml		100
T N-EtFOSAA	8.354	584.2 -> 419.0	832	3031.4314	pg/ml		100
T PFUnA	8.346	563.1 -> 519.0	3479	2597.9761	pg/ml		100
T PFDoA	8.470	613.1 -> 569.0	3706	2045.4583	pg/ml		100
T PFTrDA	8.588	663.1 -> 619.0	3010	1502.9337	pg/ml		100
T PFTA	8.713	713.1 -> 669.1	1547	1001.1165	pg/ml		100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

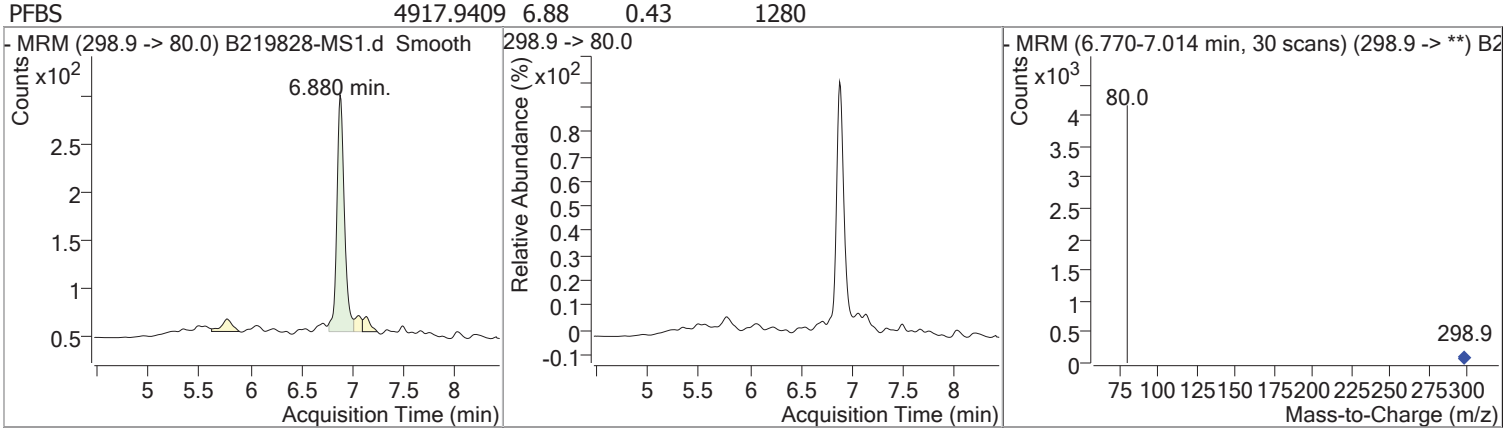
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	1242.0193	2.30	0.13	938 (m)				



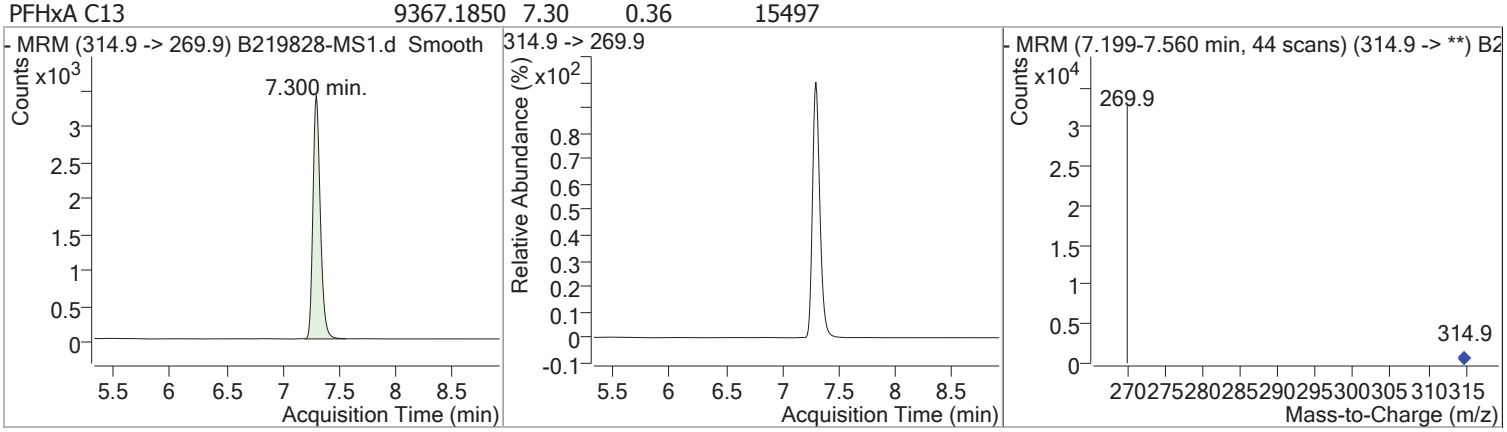
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	3135.6798	6.57	0.46	2976 (m)				



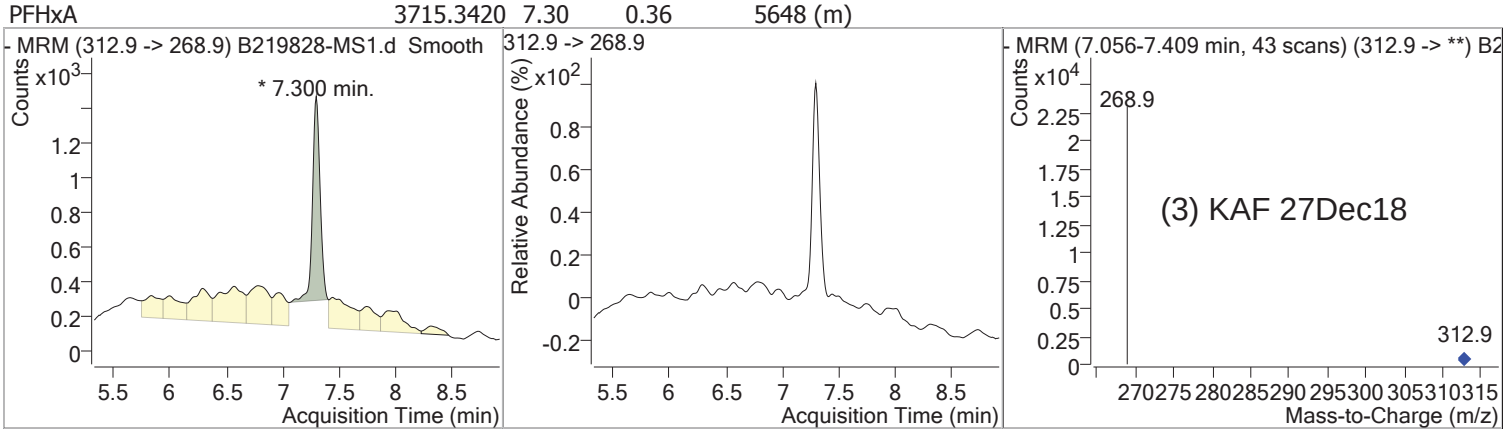
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	4917.9409	6.88	0.43	1280				



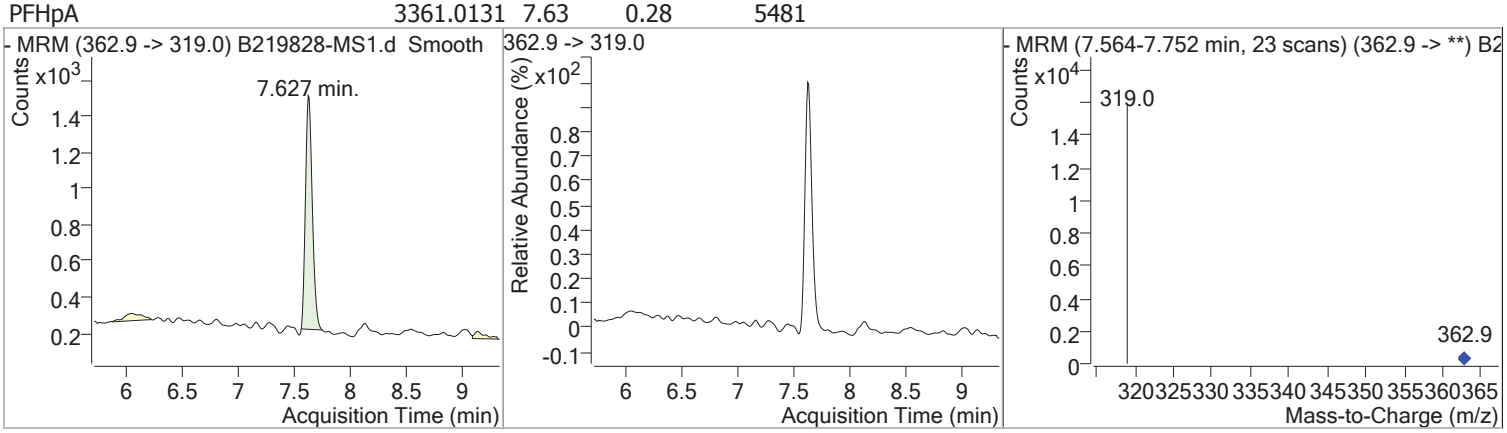
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	9367.1850	7.30	0.36	15497				



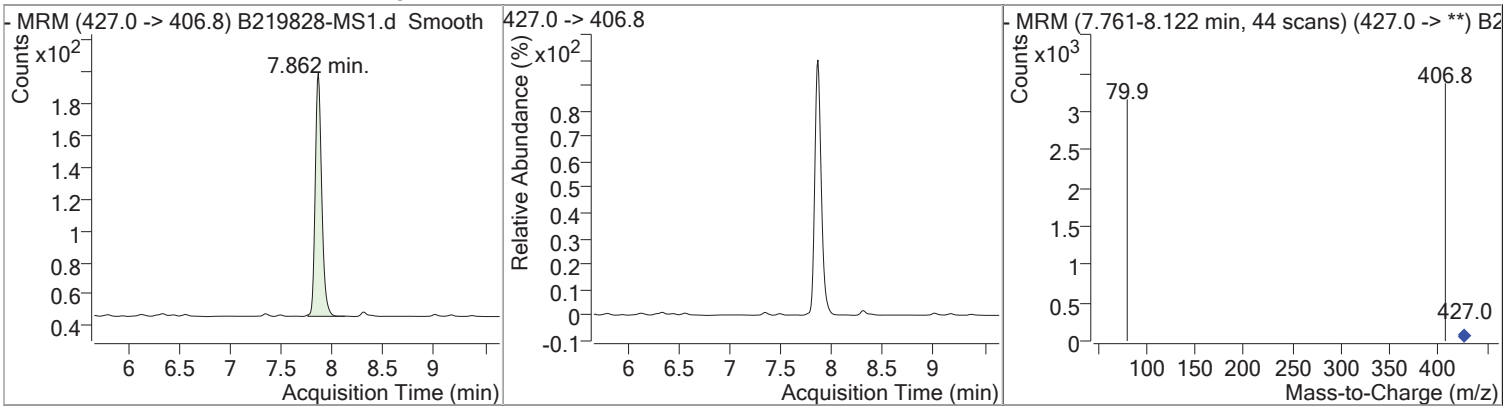
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	3715.3420	7.30	0.36	5648 (m)				



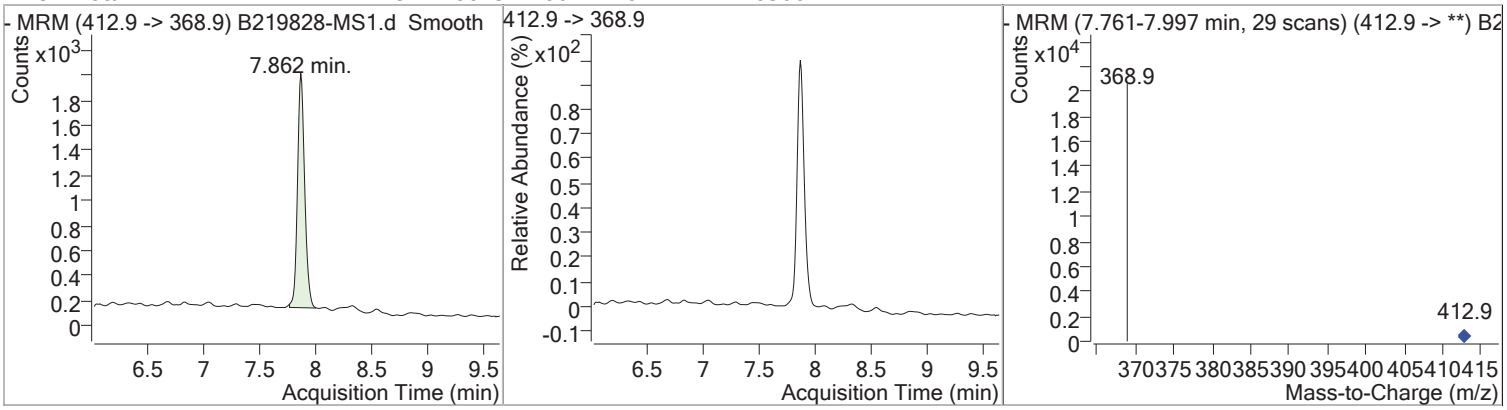
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	3361.0131	7.63	0.28	5481				



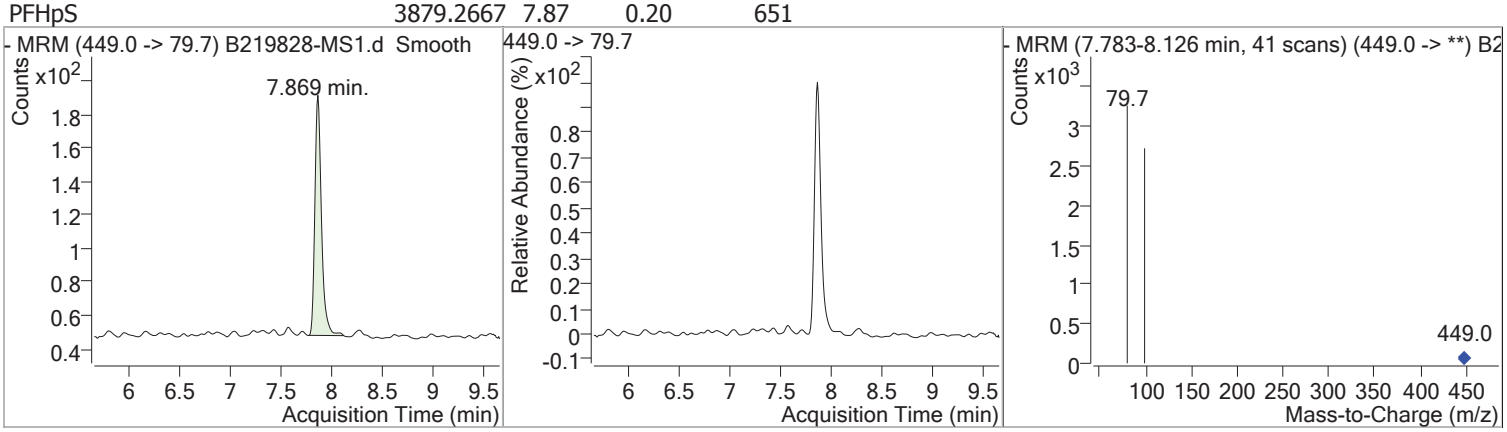
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
6.2 FTS	11487.6463	7.86	0.21	680				



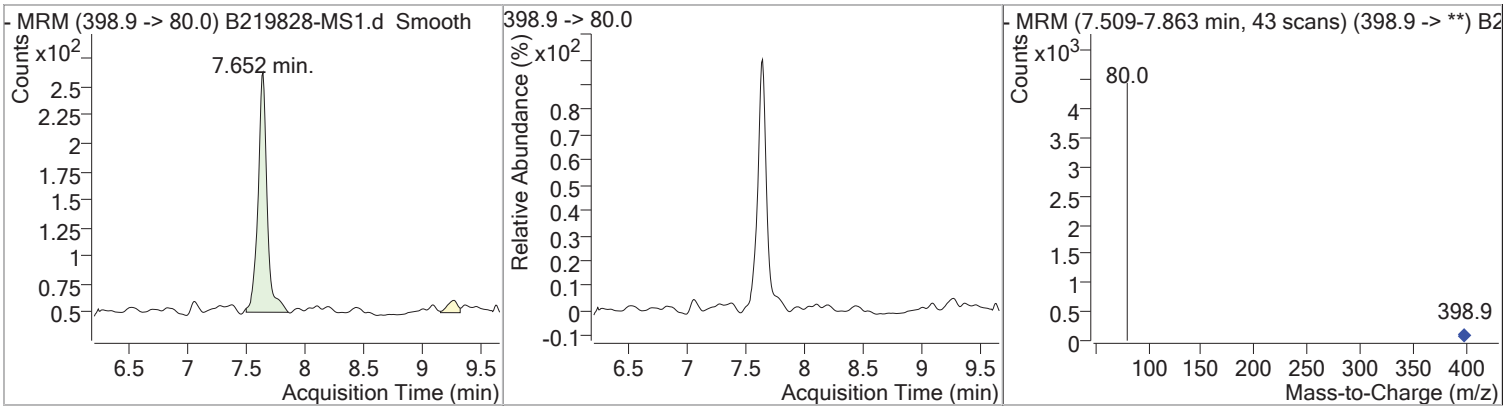
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	5424.8025	7.86	0.21	8366				



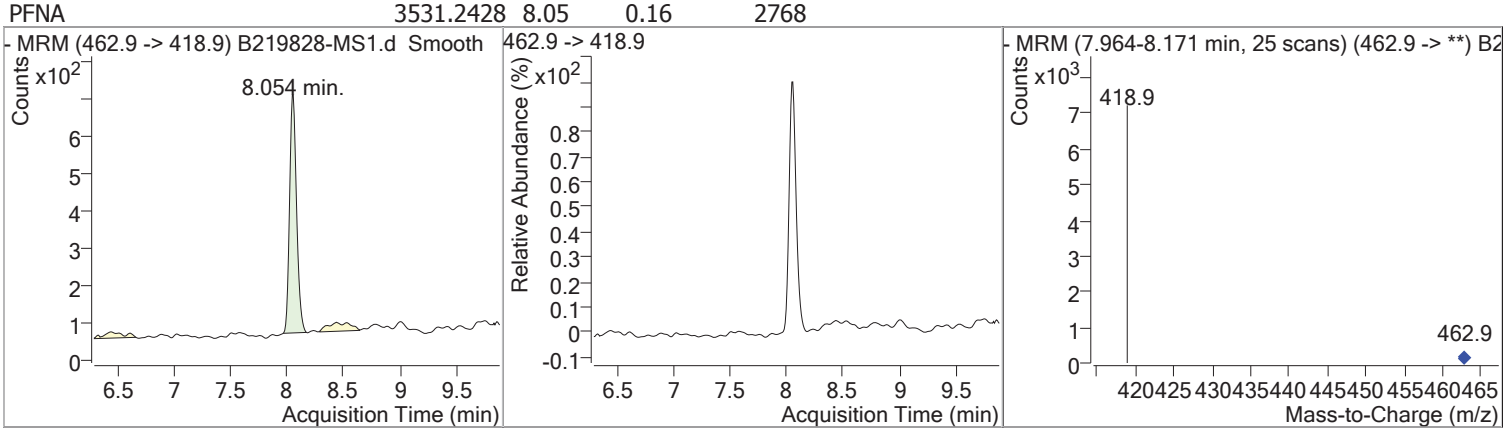
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpS	3879.2667	7.87	0.20	651				



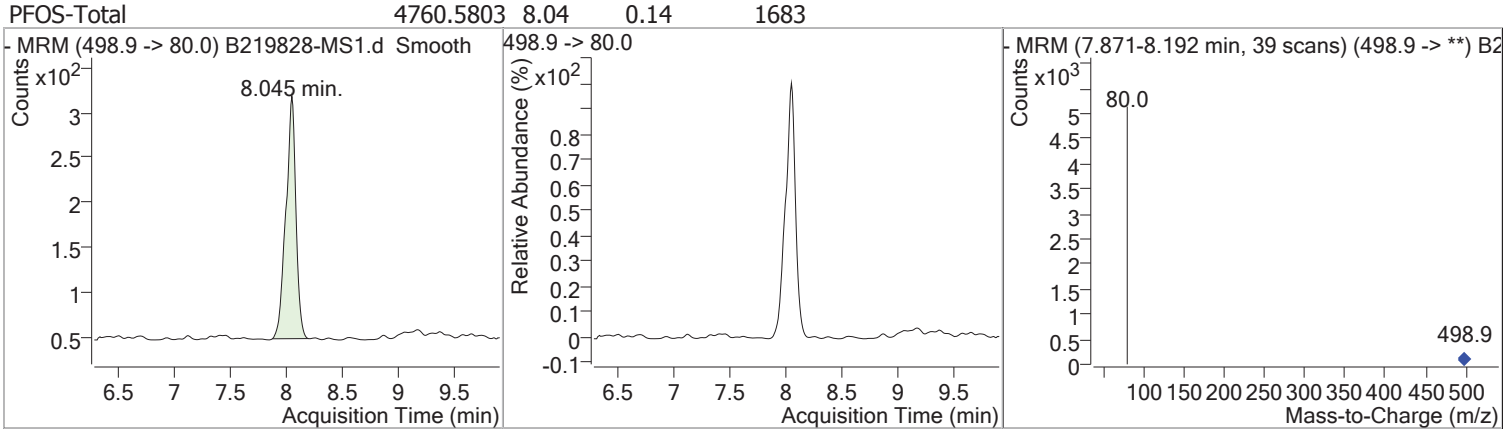
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	4858.4211	7.65	-0.03	1148				



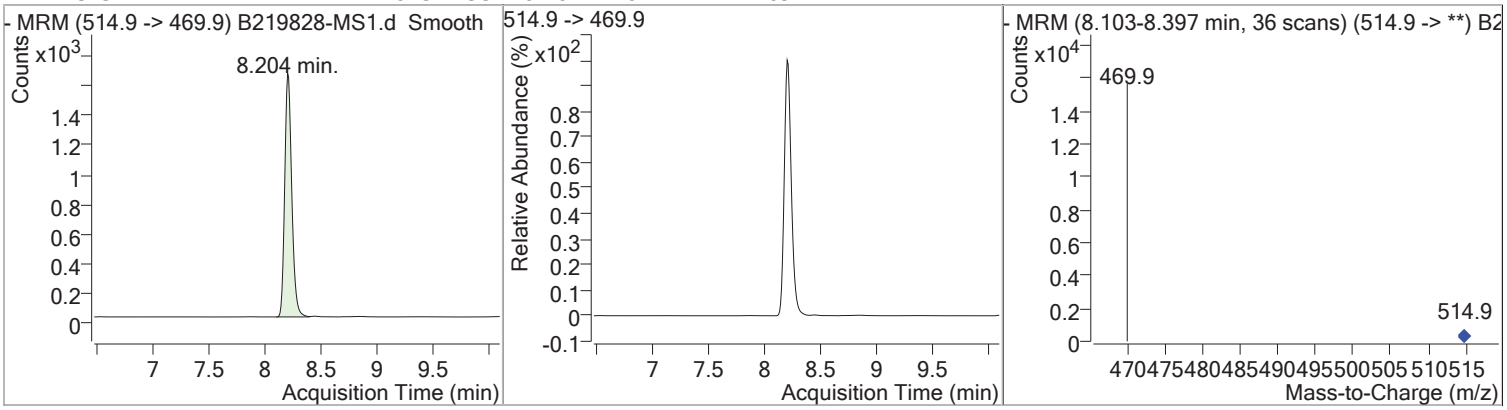
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	3531.2428	8.05	0.16	2768				



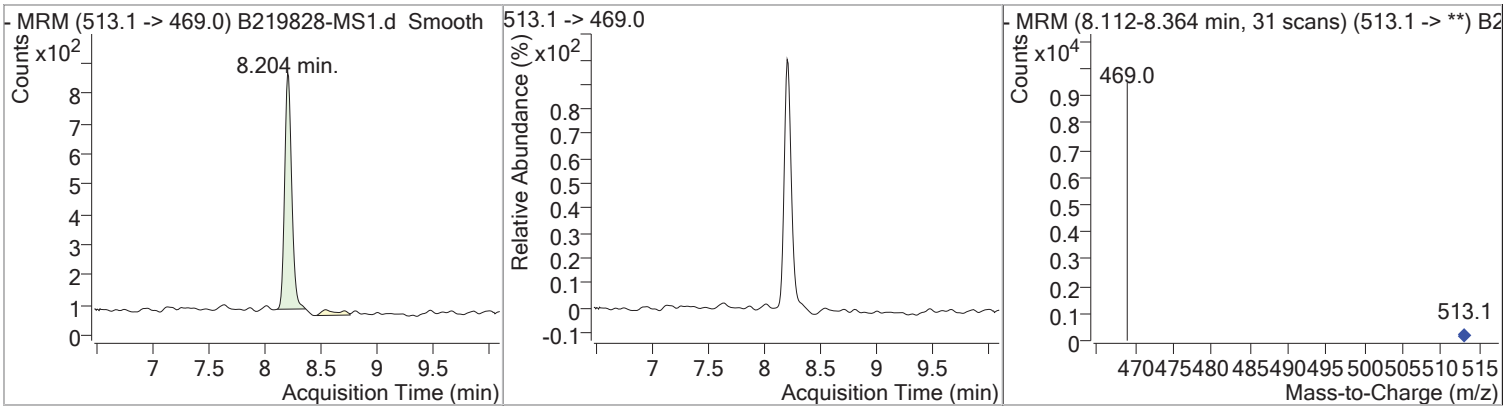
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	4760.5803	8.04	0.14	1683				



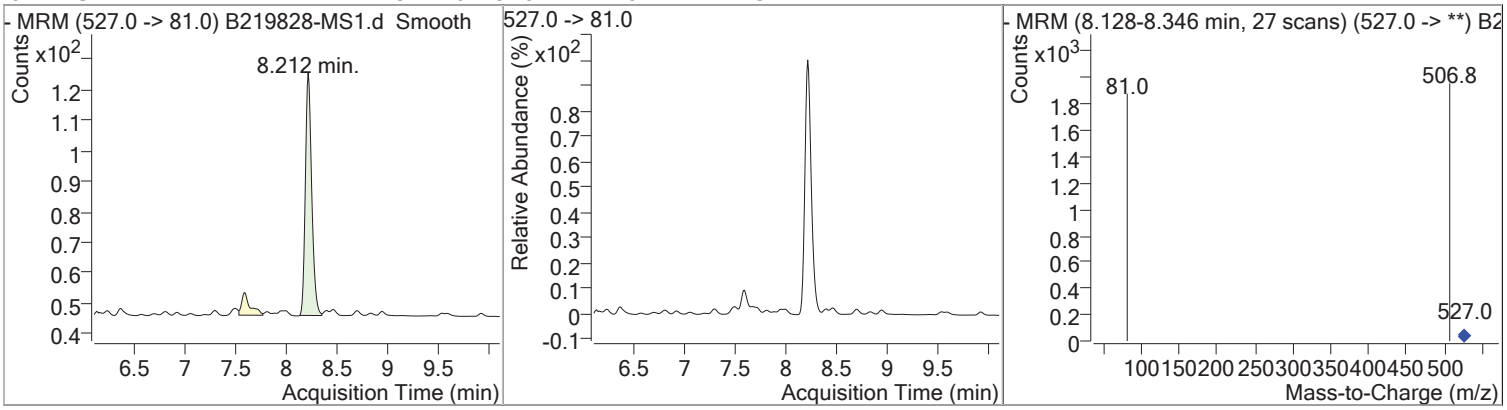
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	8132.7937	8.20	0.11	7092				



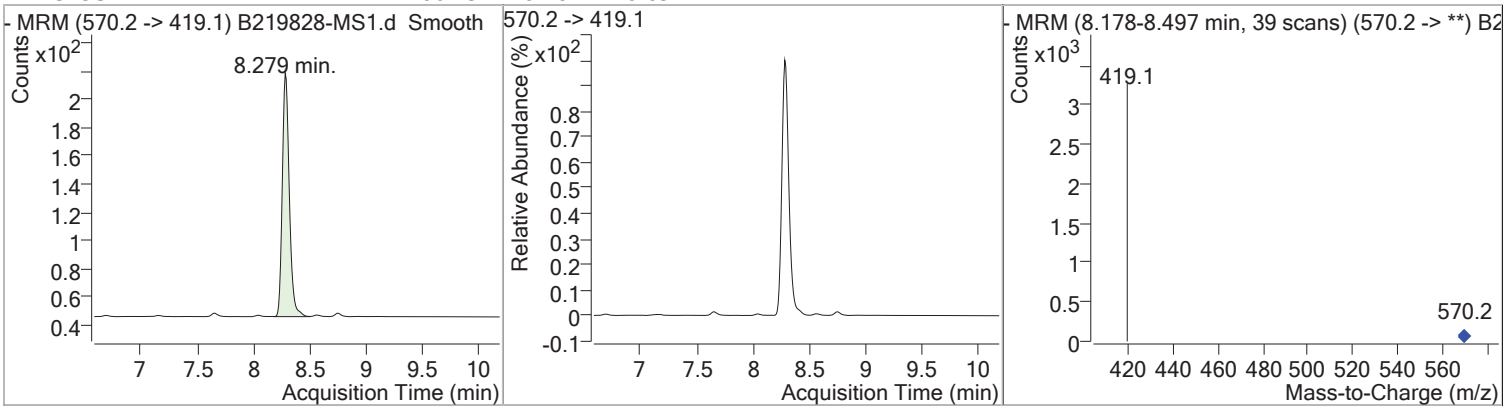
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PFDA	2559.2139	8.20	0.11	3409				



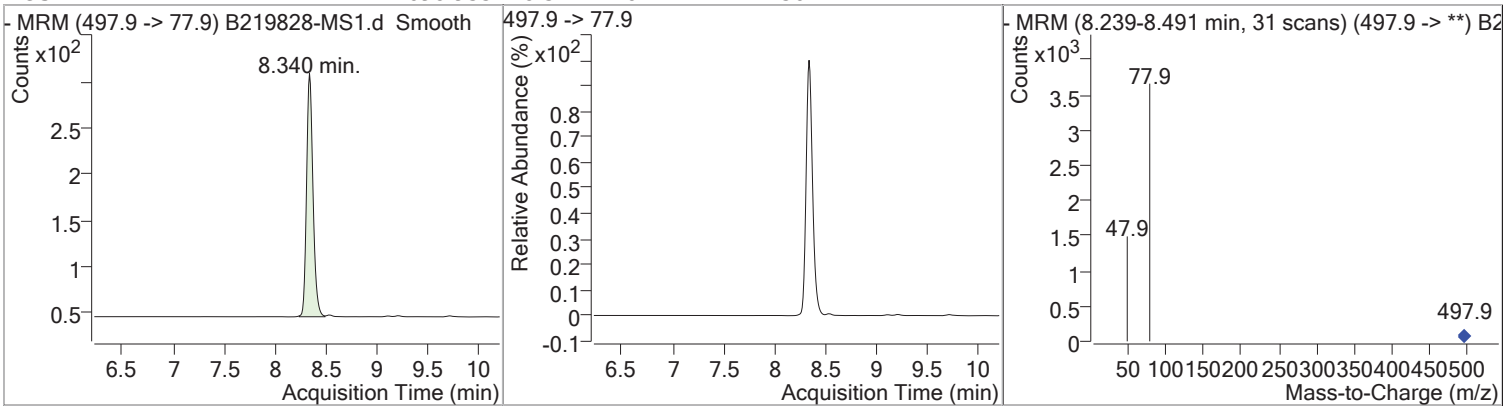
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8.2 FTS	5427.6728	8.21	0.11	344				



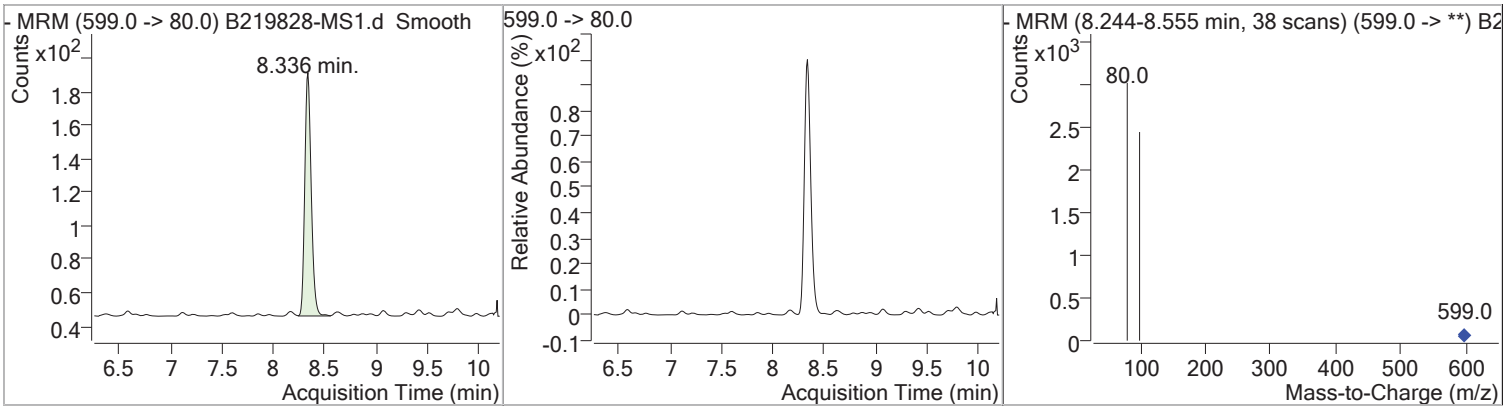
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N-MeFOSAA	2206.4944	8.28	0.09	744				



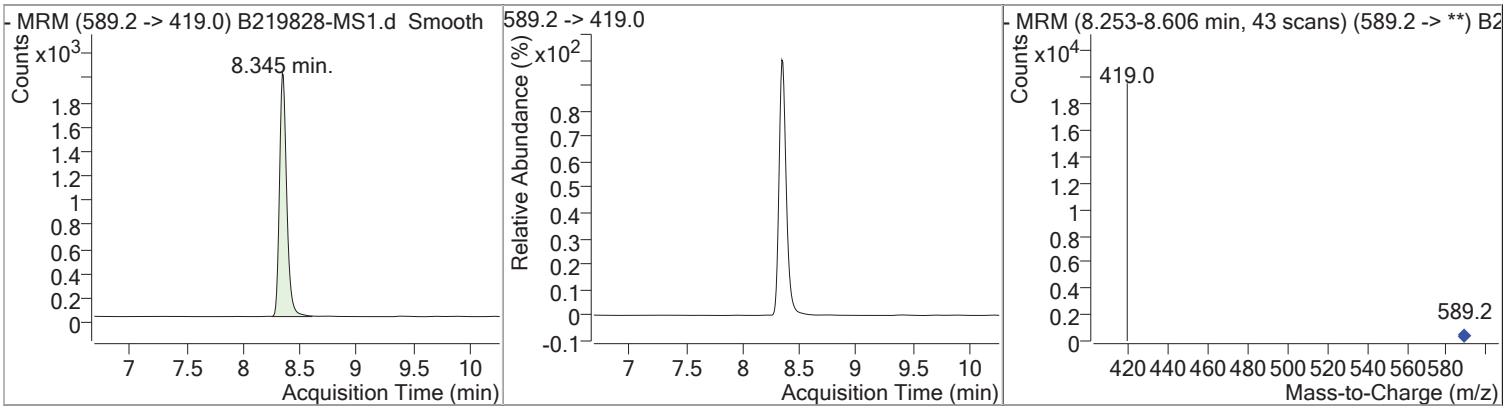
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FOSA	1098.9352	8.34	0.12	1150				



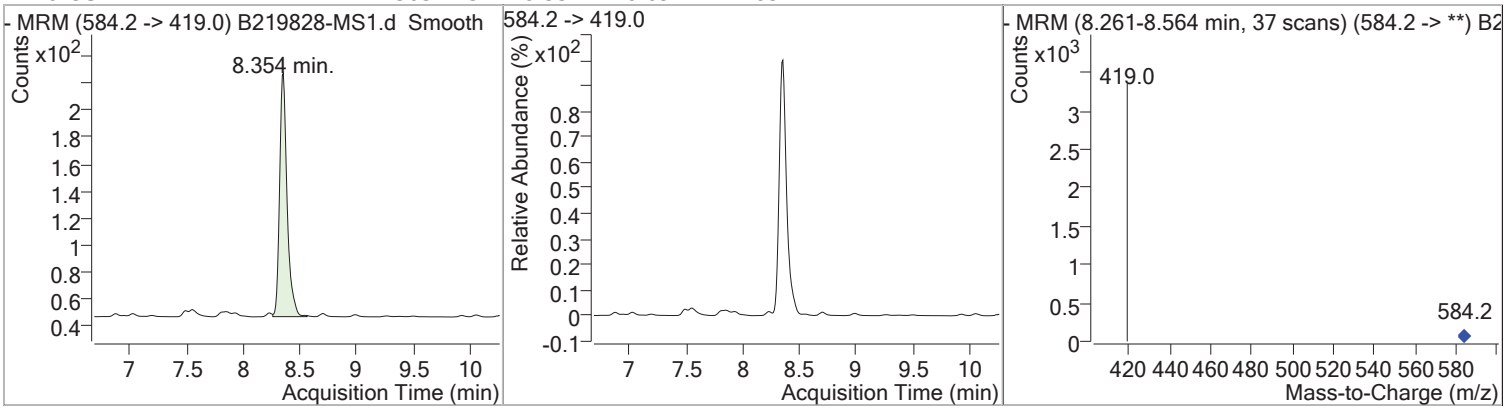
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PFDS	3027.4326	8.34	0.08	634				



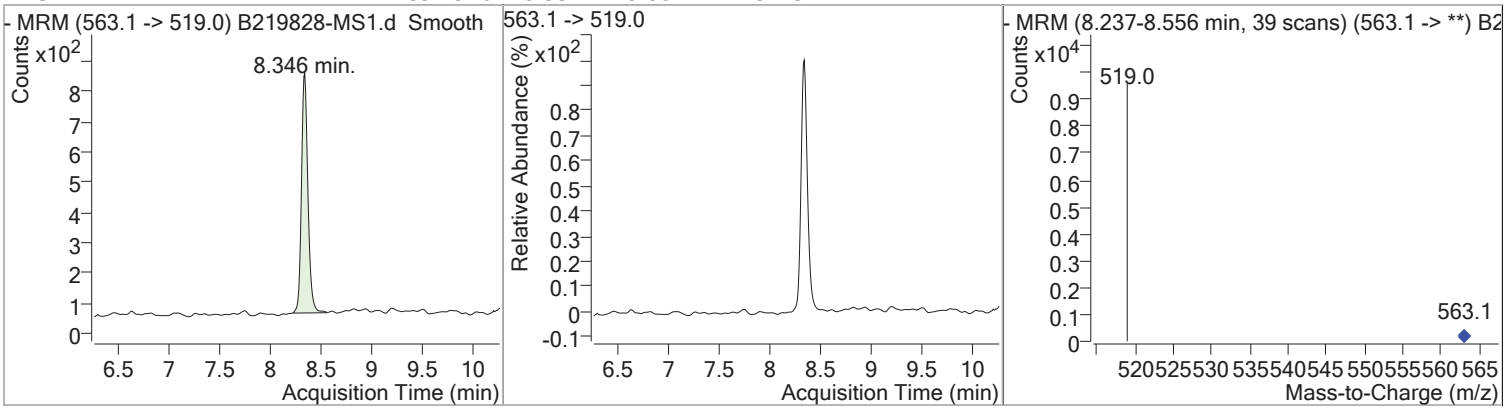
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d5-N-MeFOSAA	34319.2002	8.35	0.08	8869				



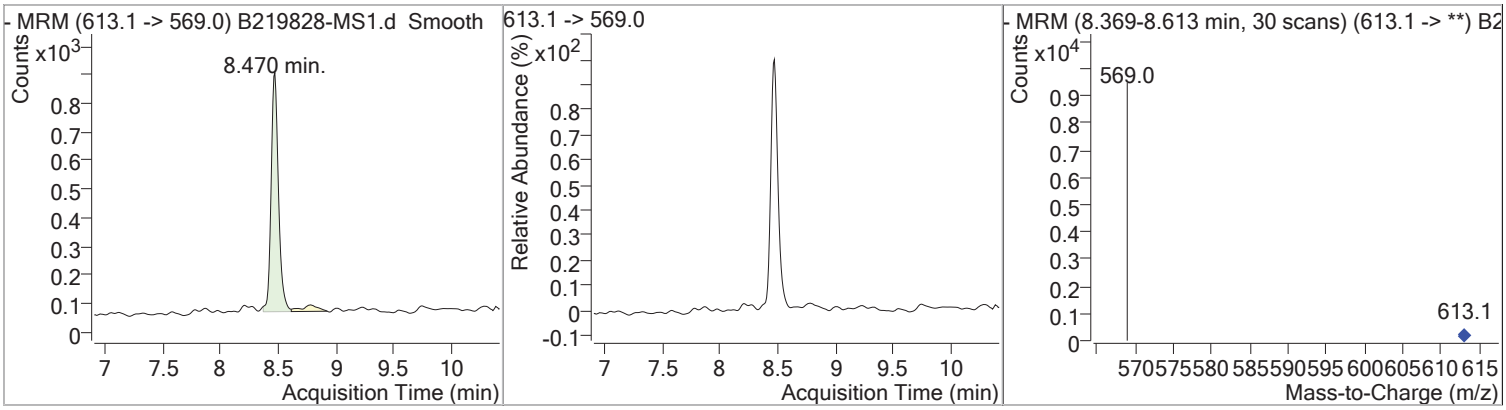
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N-EtFOSAA	3031.4314	8.35	0.09	832				



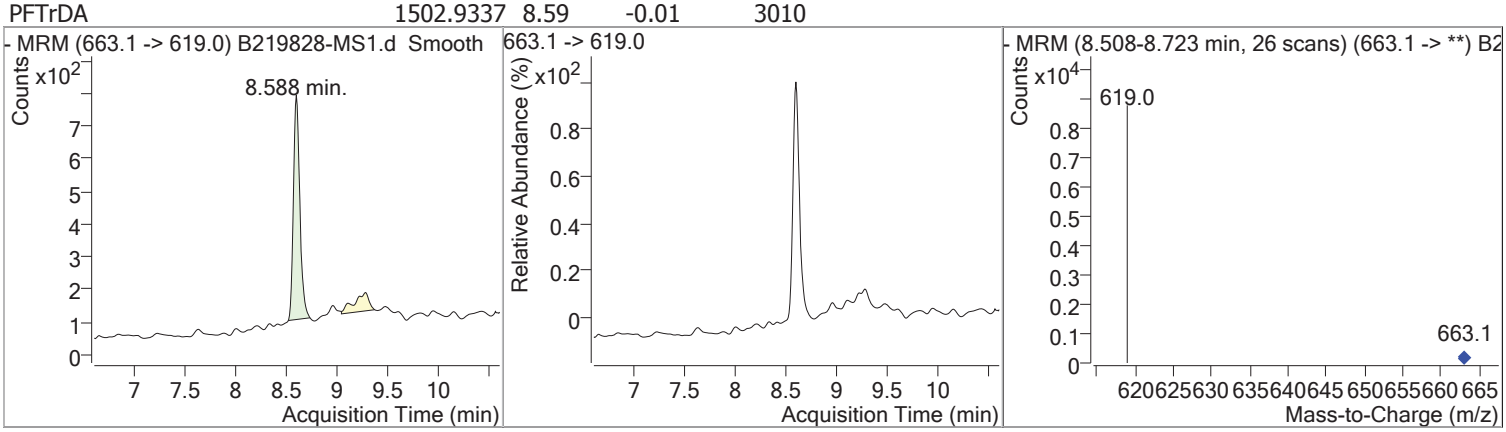
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PFUnA	2597.9761	8.35	0.08	3479				



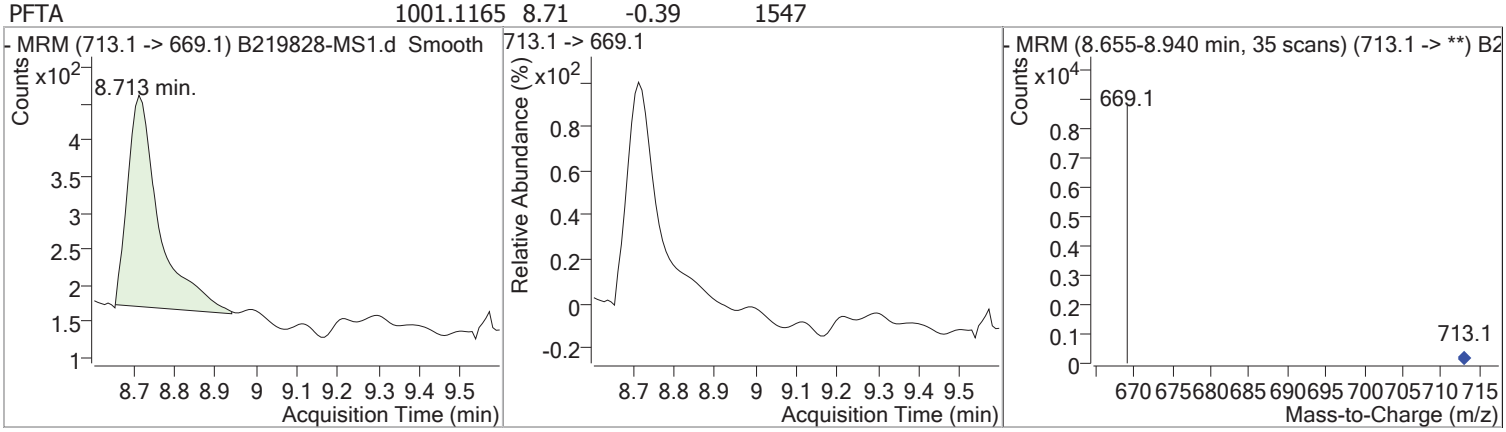
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	2045.4583	8.47	0.04	3706				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	1502.9337	8.59	-0.01	3010				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	1001.1165	8.71	-0.39	1547				



1 - FORM I
ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY		Project:	60284002 - Utica, NY	
Matrix:	Water	Laboratory ID:	B219828-MSD1	File ID:	lims export files full-004
Sampled:		Prepared:	12/24/18 08:00	Analyzed:	12/27/18 11:08
Solids:		Preparation:	EPA 537	Dilution:	
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
Instrument:	HPLC1				
Column:	1				

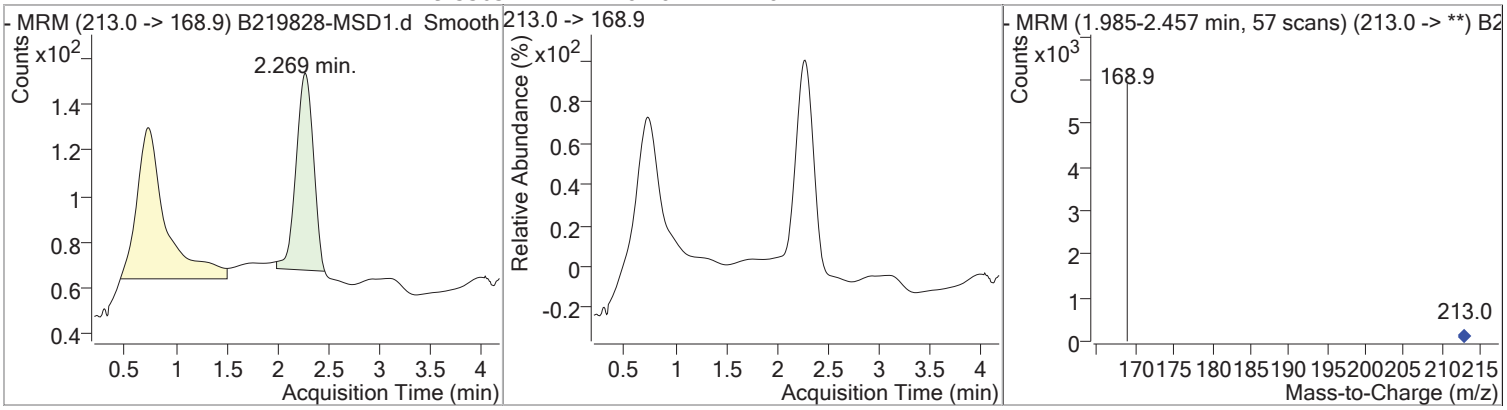
CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)	17.9	2.0	2.0	MS-12
307-24-4	Perfluorohexanoic acid (PFHxA)	14.8	2.0	2.0	MS-12
375-85-9	Perfluoroheptanoic acid (PFHpA)	13.6	2.0	2.0	MS-12
375-22-4	Perfluorobutanoic acid (PFBA)	5.00	2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)	9.57	2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)	16.0	2.0	2.0	MS-12
75491-6	Perfluorooctanesulfonamide (FOSA)	6.06	2.0	2.0	R-02
2706-90-3	Perfluoropentanoic acid (PFPeA)	12.8	2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)	37.7	2.0	2.0	MS-12
	8:2 Fluorotelomersulfonate (8:2 FTS)	22.4	2.0	2.0	MS-12
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12.9	2.0	2.0	MS-23
335-67-1	Perfluorooctanoic acid (PFOA)	22.3	2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	20.2	2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)	14.8	2.0	2.0	MS-12
335-76-2	Perfluorodecanoic acid (PFDA)	12.1	2.0	2.0	
	NMeFOSAA	12.8	2.0	2.0	R-02
2058-94-8	Perfluoroundecanoic acid (PFUnA)	10.2	2.0	2.0	
	NEtFOSAA	10.1	2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)	10.0	2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	8.51	2.0	2.0	R-02
376-06-7	Perfluorotetradecanoic acid (PFTA)	7.52	2.0	2.0	R-02

Data File	B219828-MSD1.d	Operator	KAF
Acq. Method	21List042718.m	Acq. Date-Time	12/27/2018 11:08:58 AM
Sample Name	B219828-MSD1	Instrument	Instrument 1
Vial		Multiplier	1.00
DA Method File	122018.m	Comment	
Tune File		Tune Date	
Batch Name	1.batch.bin	Last Calib Update	12/21/2018 2:05:57 PM
Ref Library			

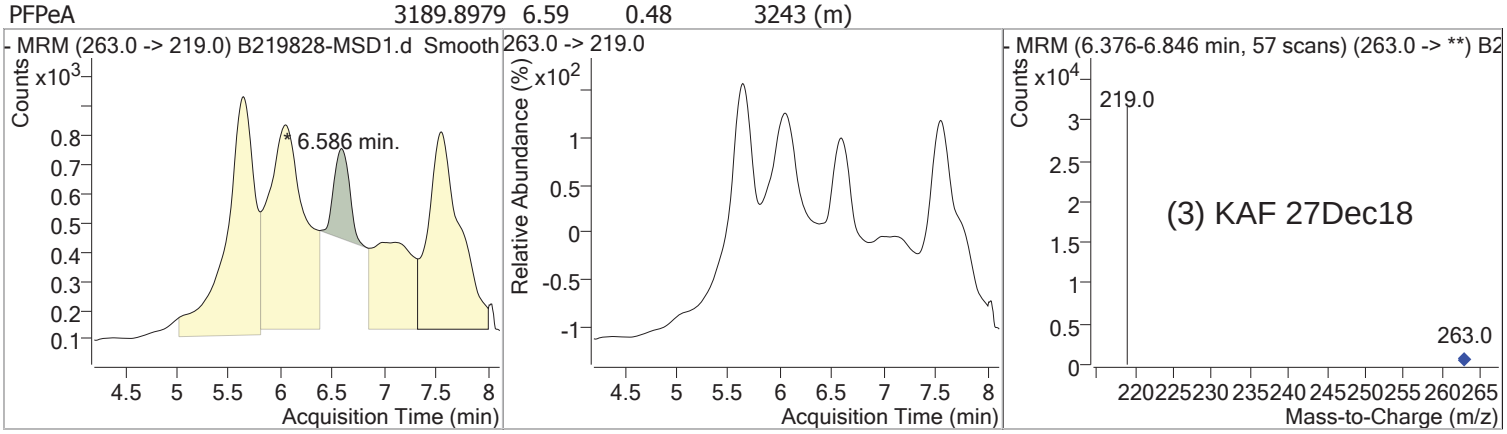
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M PFOA C13	7.896	416.9 -> 371.9	14419	10000.0000	pg/ml		0.245
M PFOS C13	8.078	502.9 -> 80.0	9474	28700.0000	pg/ml		0.178
M d3-N-MeFOSAA	8.304	573.2 -> 419.0	12288	40000.0000	pg/ml		0.119
System Monitoring Compounds							
S PFHxA C13	7.342	314.9 -> 269.9	16549	9336.2150	pg/ml		0.404
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 93.36%			
S PFDA C13	8.229	514.9 -> 469.9	8280	8862.1945	pg/ml		0.136
Spiked Amount: 10000.000	Range: 70.0 - 130.0%			Recovery = 88.62%			
S d5-N-MeFOSAA	8.370	589.2 -> 419.0	8607	32020.3934	pg/ml		0.102
Spiked Amount: 40000.000	Range: 70.0 - 130.0%			Recovery = 80.05%			
Target Compounds							QValue
T PFBA	2.269	213.0 -> 168.9	1011	1249.5363	pg/ml		100
T PFPeA	6.586	263.0 -> 219.0	3243	3189.8979	pg/ml	m	100
T PFBS	6.930	298.9 -> 80.0	1374	4481.4913	pg/ml	m	100
T PFHxA	7.342	312.9 -> 268.9	6039	3707.6548	pg/ml	m	100
T PFHpA	7.669	362.9 -> 319.0	5957	3409.2380	pg/ml		100
T 6.2 FTS	7.895	427.0 -> 406.8	657	9422.6627	pg/ml		100
T PFOA-Total	7.896	412.9 -> 368.9	9212	5575.6627	pg/ml		100
T PFHpS	7.903	449.0 -> 79.7	791	4001.2296	pg/ml	m	100
T PFHxS-Total	7.686	398.9 -> 80.0	899	3228.1525	pg/ml		100
T PFNA	8.079	462.9 -> 418.9	3102	3694.0241	pg/ml		100
T PFOS-Total	8.070	498.9 -> 80.0	2100	5041.4053	pg/ml		100
T PFDA	8.230	513.1 -> 469.0	4334	3036.7399	pg/ml		100
T 8.2 FTS	8.237	527.0 -> 81.0	417	5595.0322	pg/ml		100
T N-MeFOSAA	8.312	570.2 -> 419.1	1122	3199.5670	pg/ml		100
T FOSA	8.365	497.9 -> 77.9	1649	1515.0428	pg/ml		100
T PFDS	8.361	599.0 -> 80.0	590	2393.2496	pg/ml		100
T N-EtFOSAA	8.371	584.2 -> 419.0	719	2519.3988	pg/ml		100
T PFUnA	8.371	563.1 -> 519.0	3666	2555.4998	pg/ml		100
T PFDoA	8.487	613.1 -> 569.0	4869	2508.3868	pg/ml		100
T PFTrDA	8.604	663.1 -> 619.0	4565	2127.3872	pg/ml		100
T PFTA	8.730	713.1 -> 669.1	3114	1880.3035	pg/ml	m	100

(#) = Qualifier Out of Range; (m) = Manual Integration; (+) = Area Summed; (*) = Surrogate Percent Recovery Out of Range; (d): Zeroed Peak

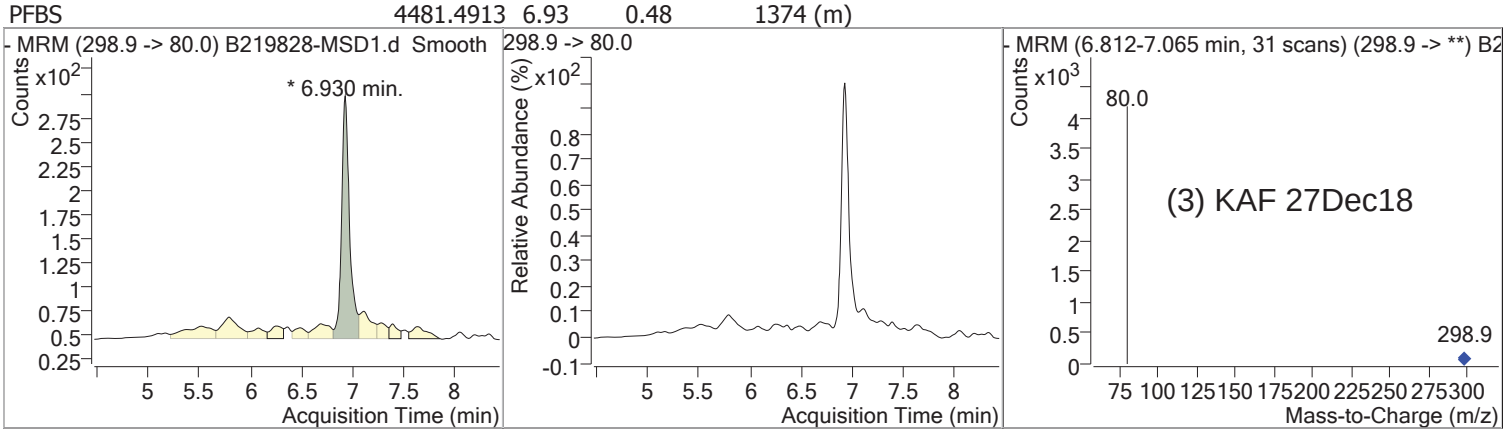
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBA	1249.5363	2.27	0.10	1011				



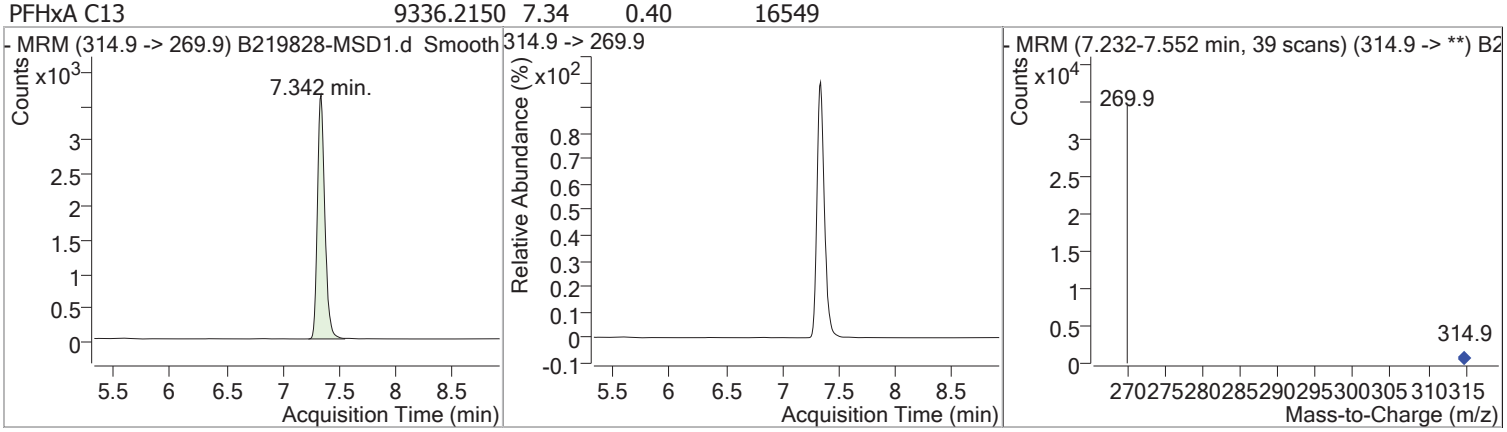
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFPeA	3189.8979	6.59	0.48	3243 (m)				



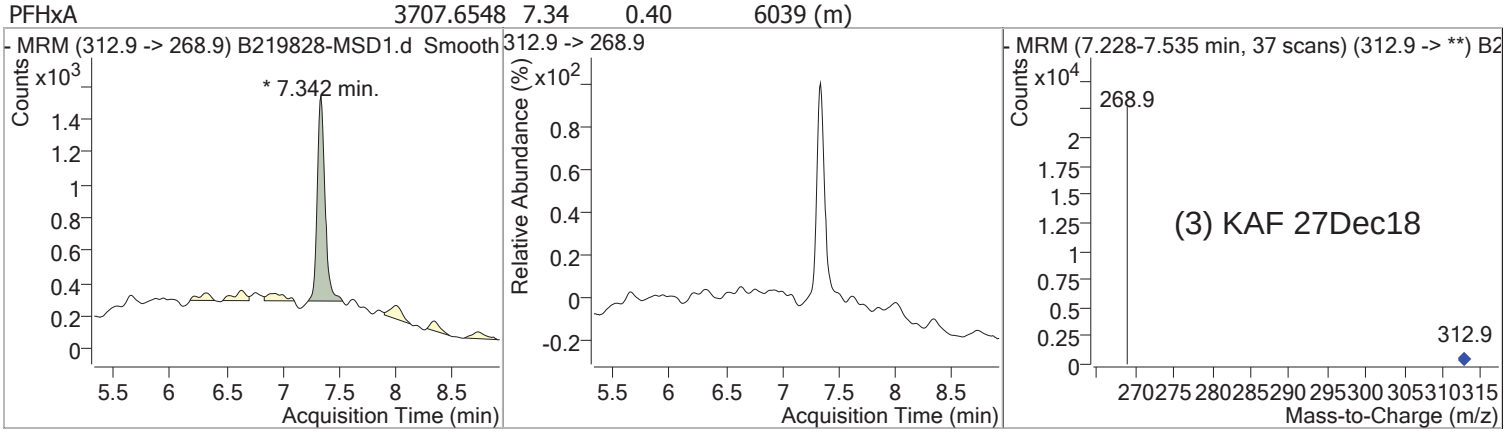
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFBS	4481.4913	6.93	0.48	1374 (m)				



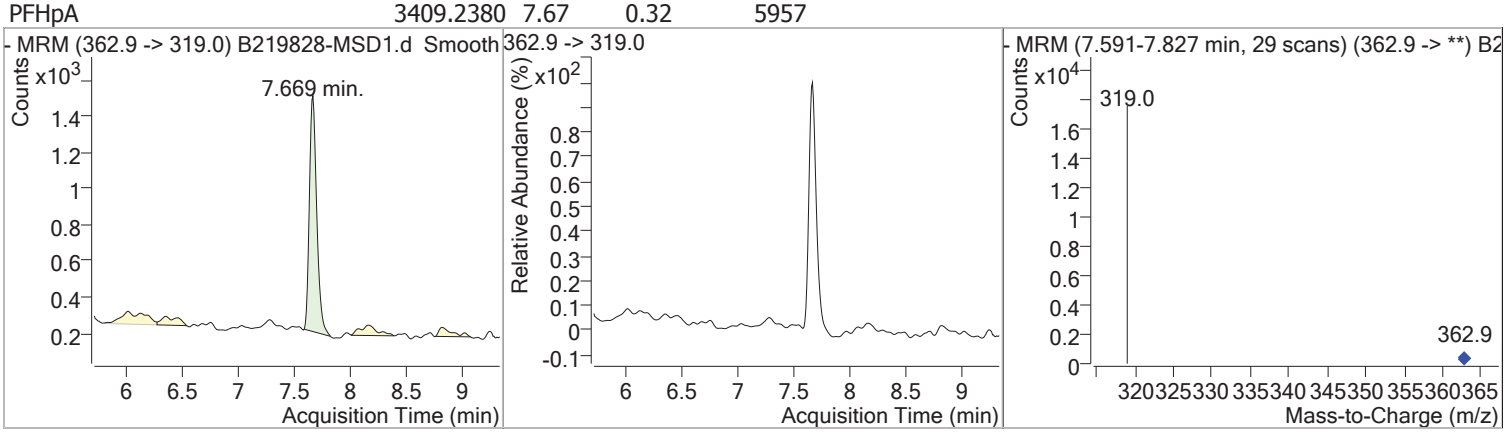
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA C13	9336.2150	7.34	0.40	16549				



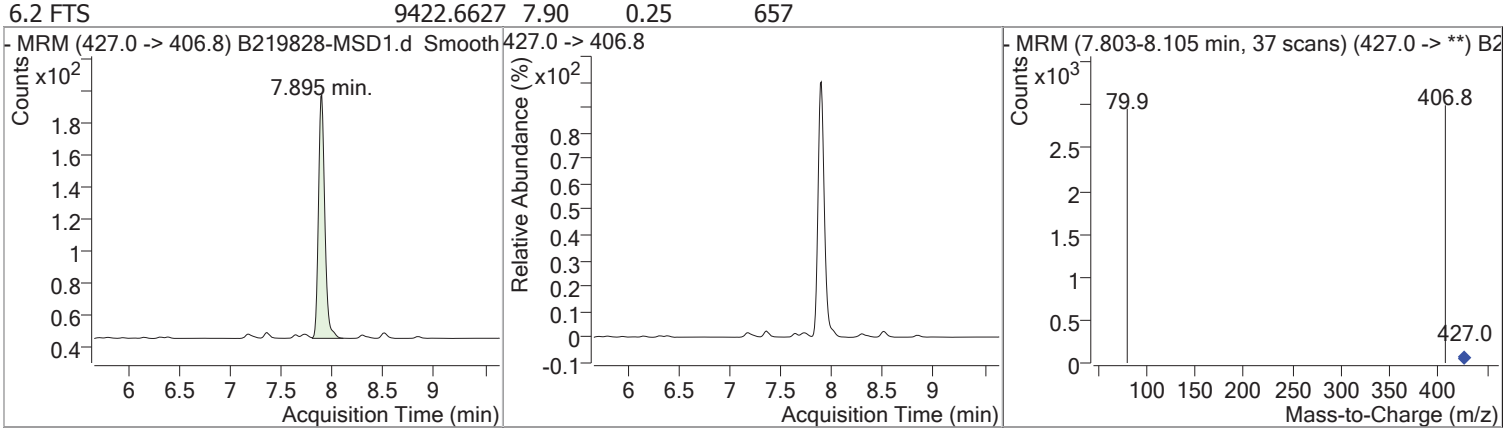
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxA	3707.6548	7.34	0.40	6039 (m)				



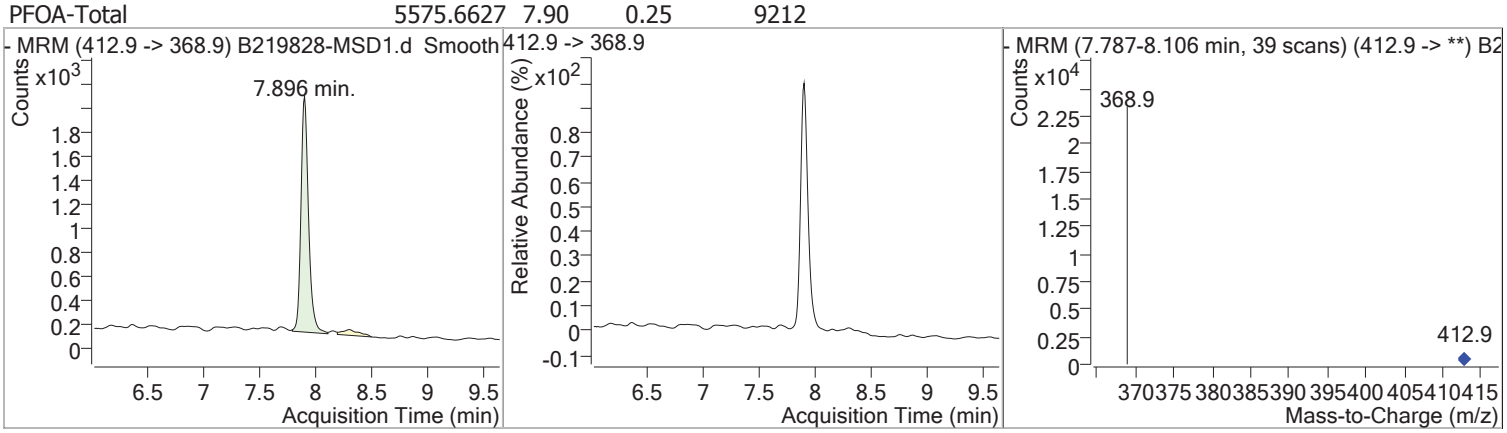
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHpA	3409.2380	7.67	0.32	5957				



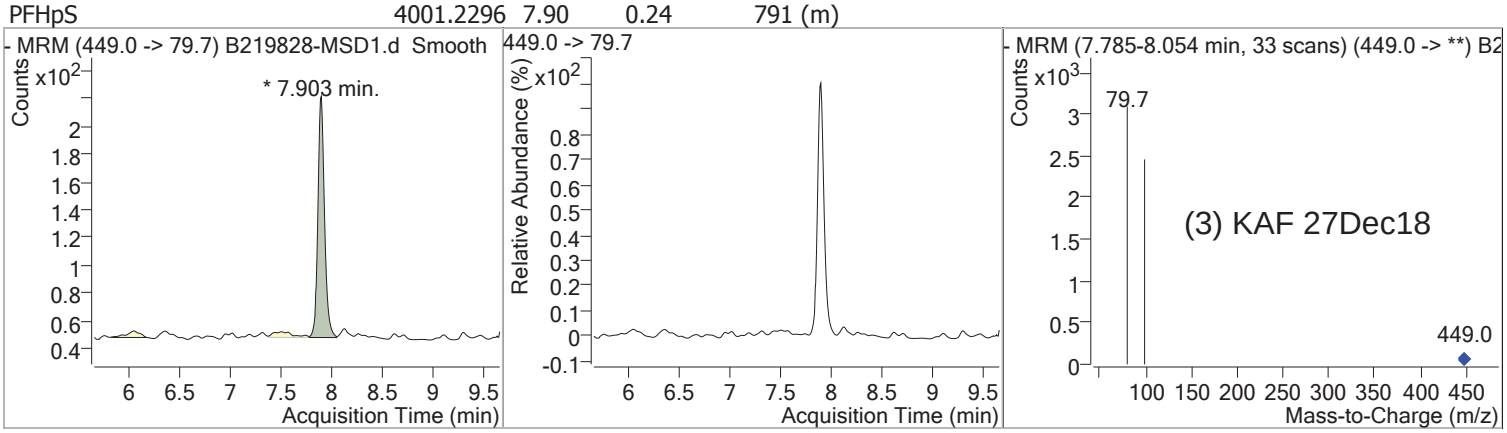
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6.2 FTS	9422.6627	7.90	0.25	657				



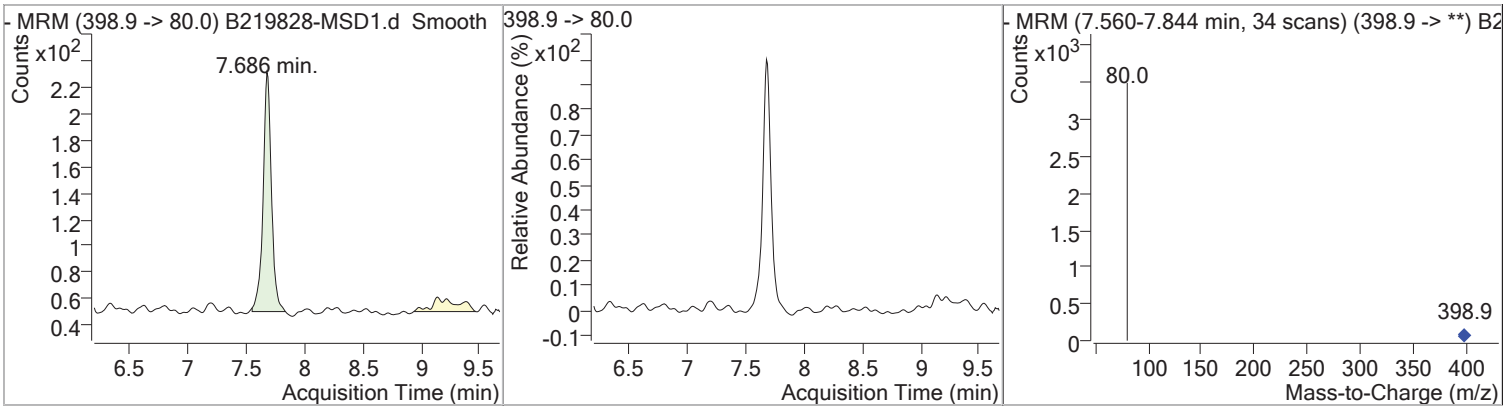
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOA-Total	5575.6627	7.90	0.25	9212				



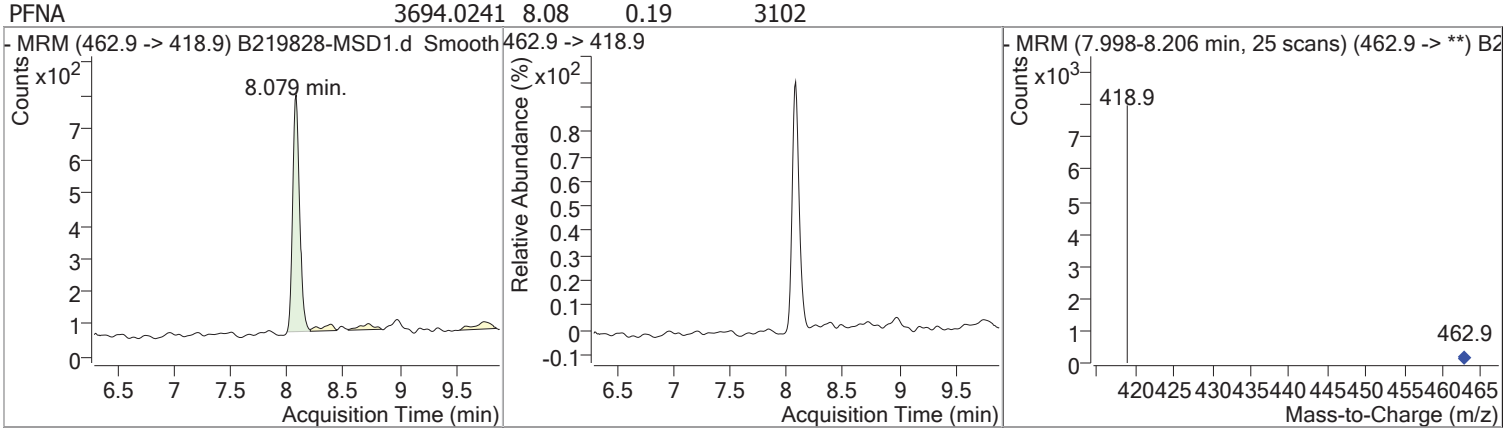
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PFHpS	4001.2296	7.90	0.24	791 (m)				



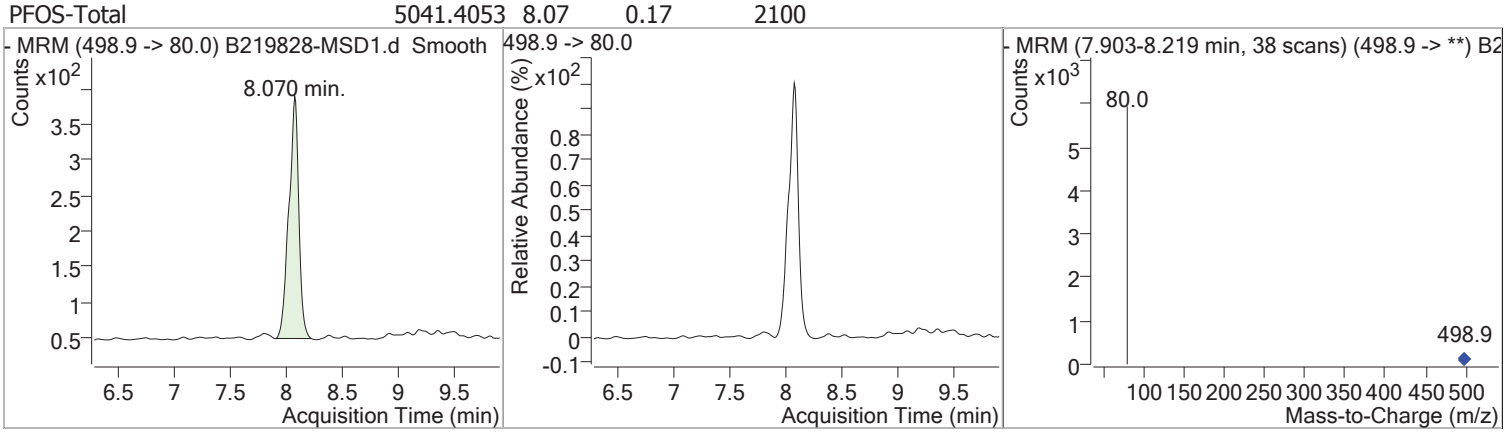
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFHxS-Total	3228.1525	7.69	0.01	899				



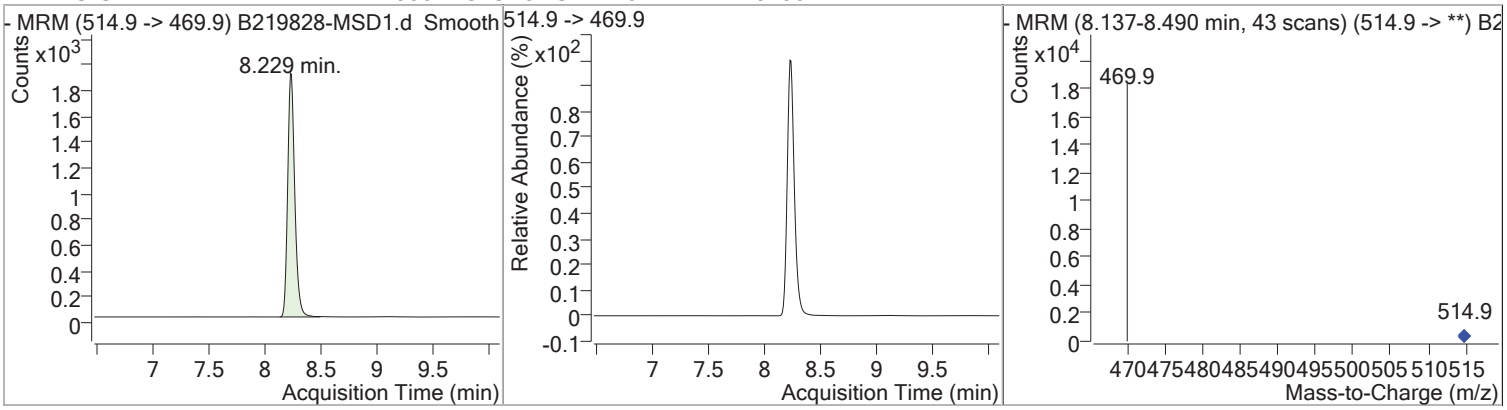
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFNA	3694.0241	8.08	0.19	3102				



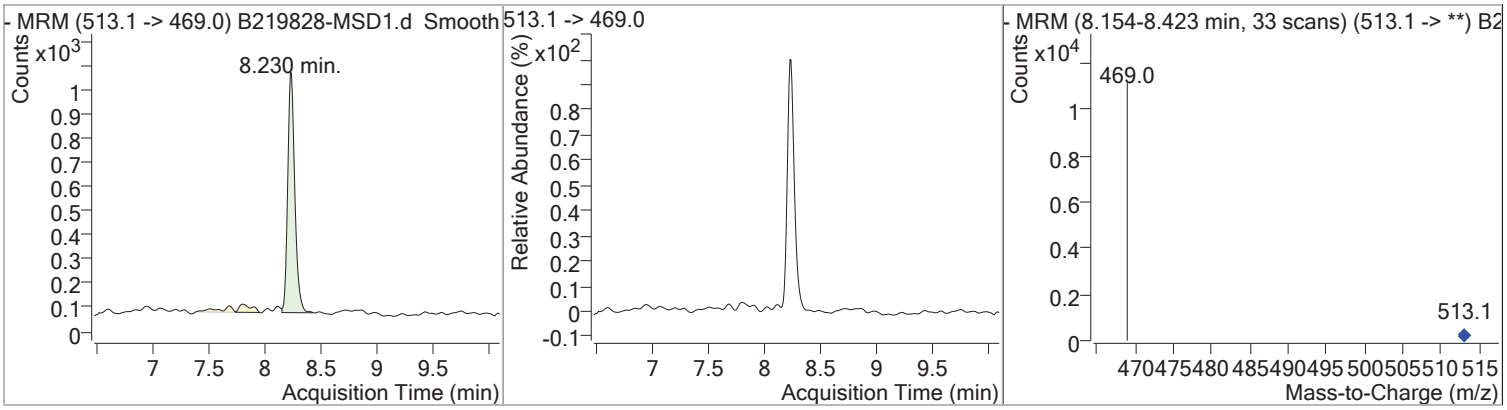
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFOS-Total	5041.4053	8.07	0.17	2100				



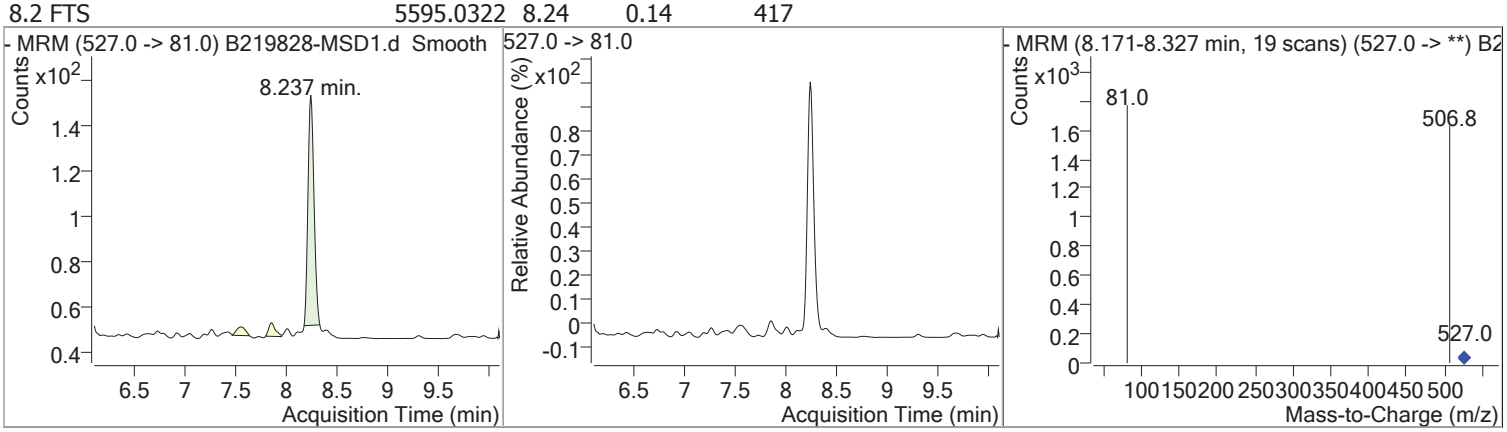
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA C13	8862.1945	8.23	0.14	8280				



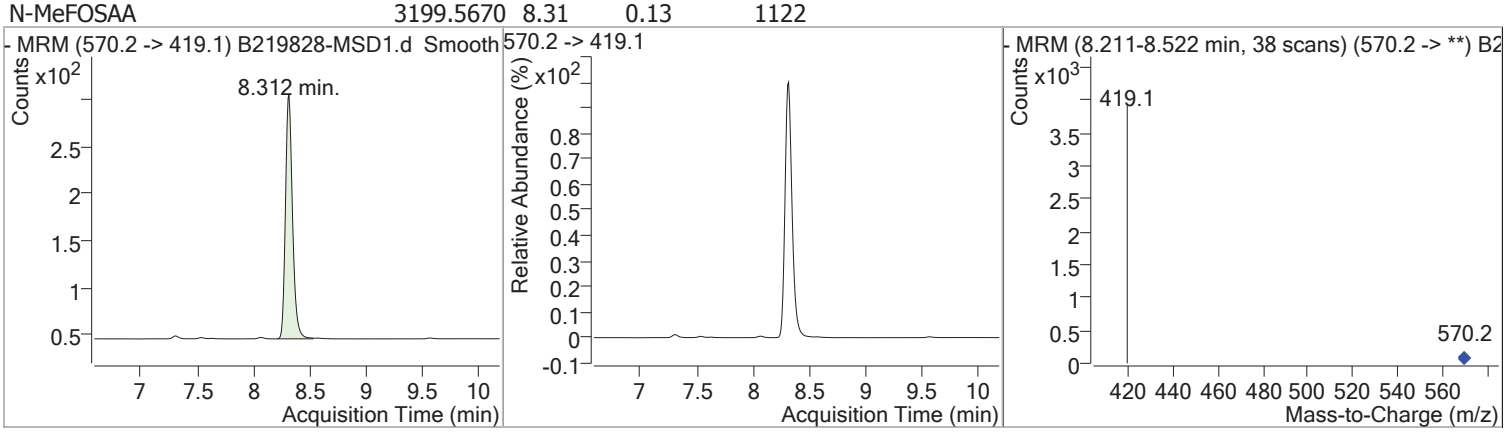
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDA	3036.7399	8.23	0.14	4334				



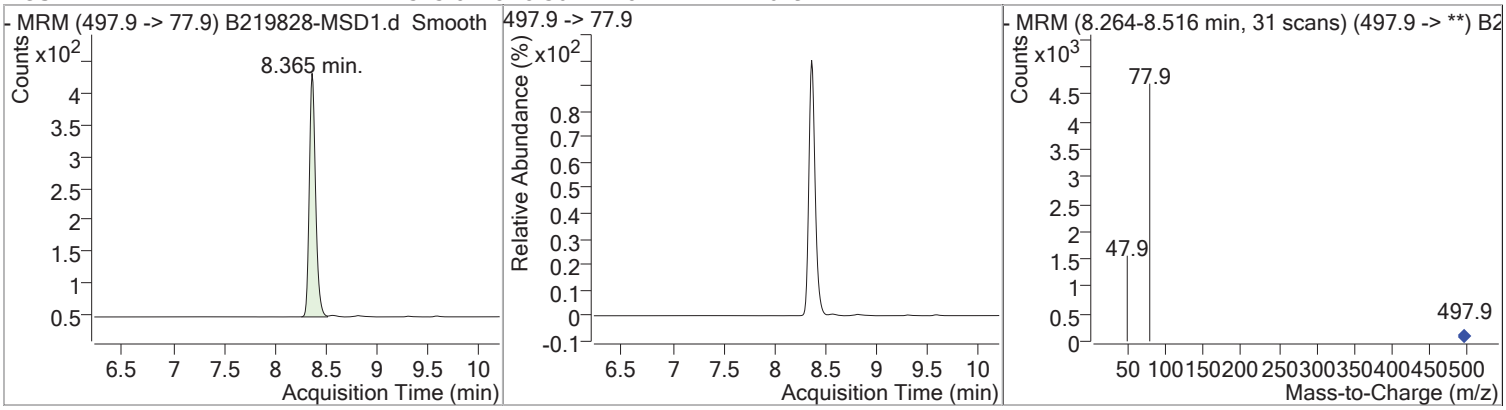
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
8.2 FTS	5595.0322	8.24	0.14	417				



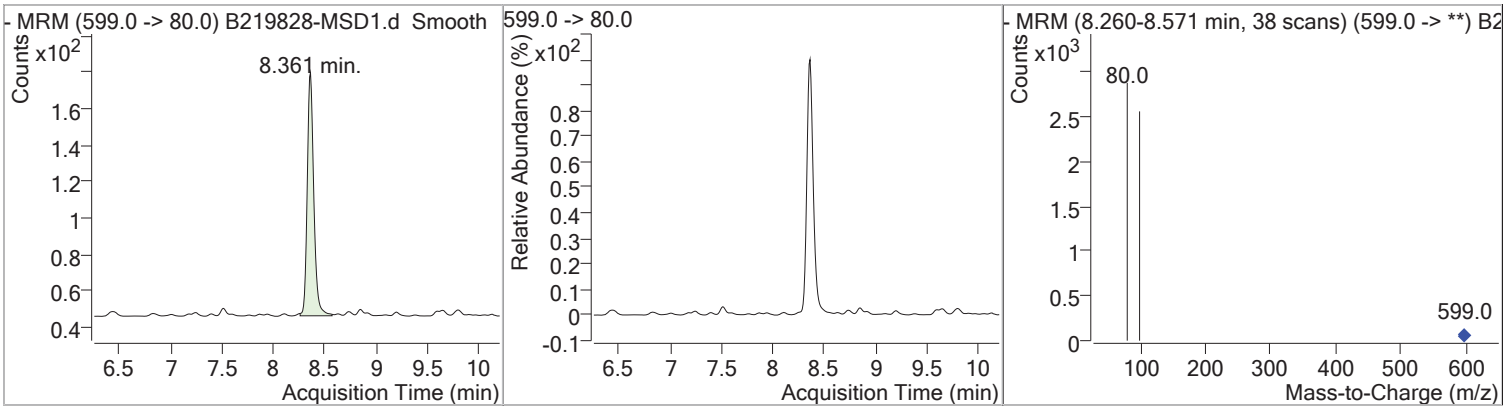
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-MeFOSAA	3199.5670	8.31	0.13	1122				



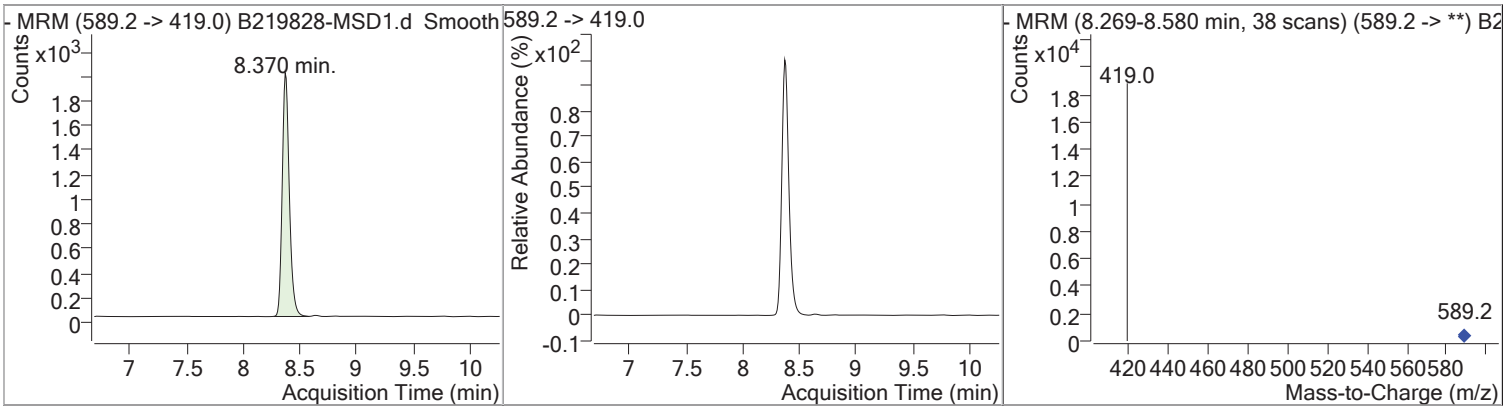
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
FOSA	1515.0428	8.36	0.14	1649				



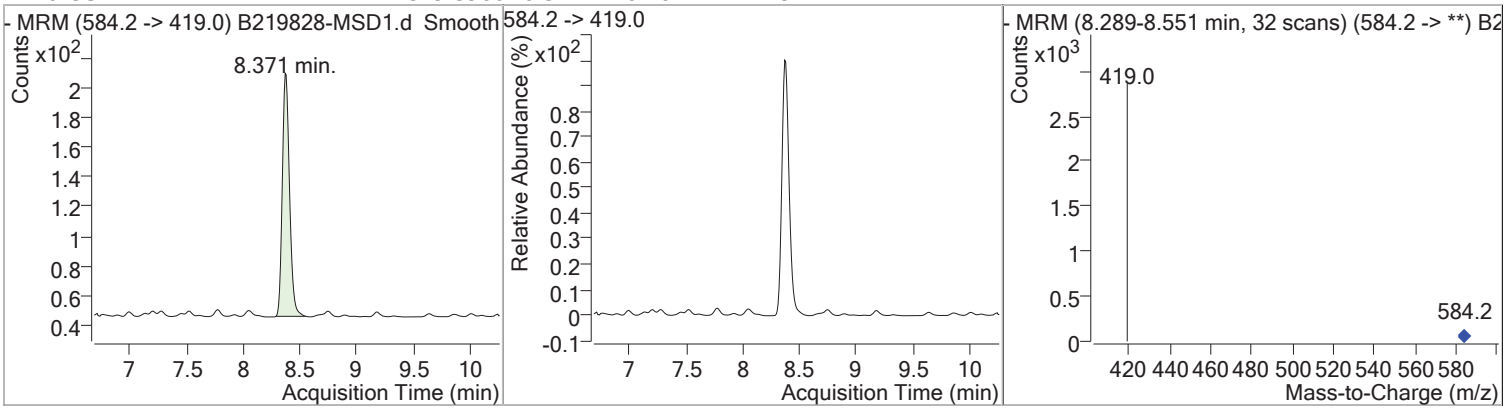
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDS	2393.2496	8.36	0.10	590				



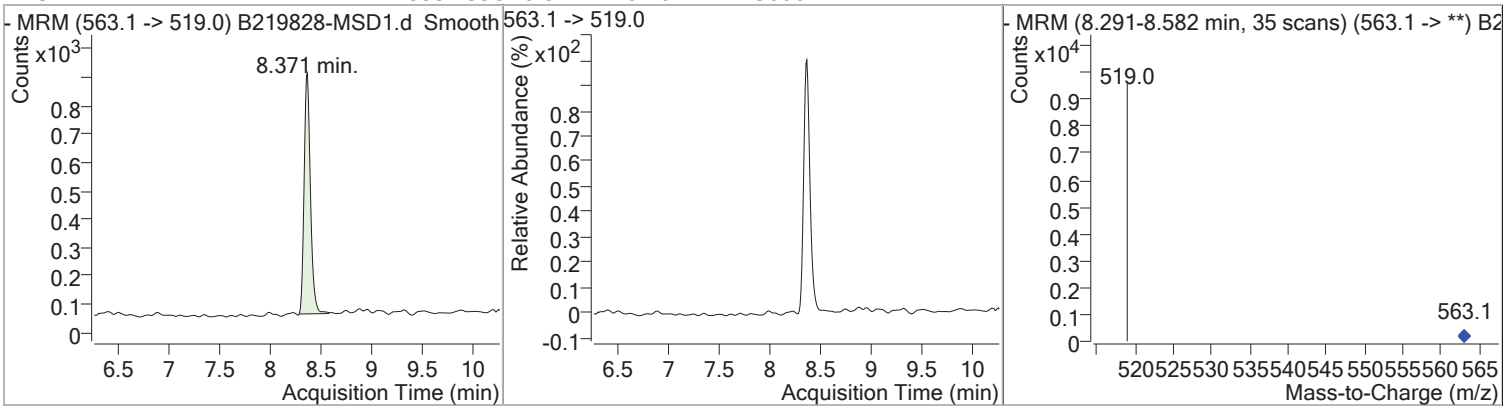
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
d5-N-MeFOSAA	32020.3934	8.37	0.10	8607				



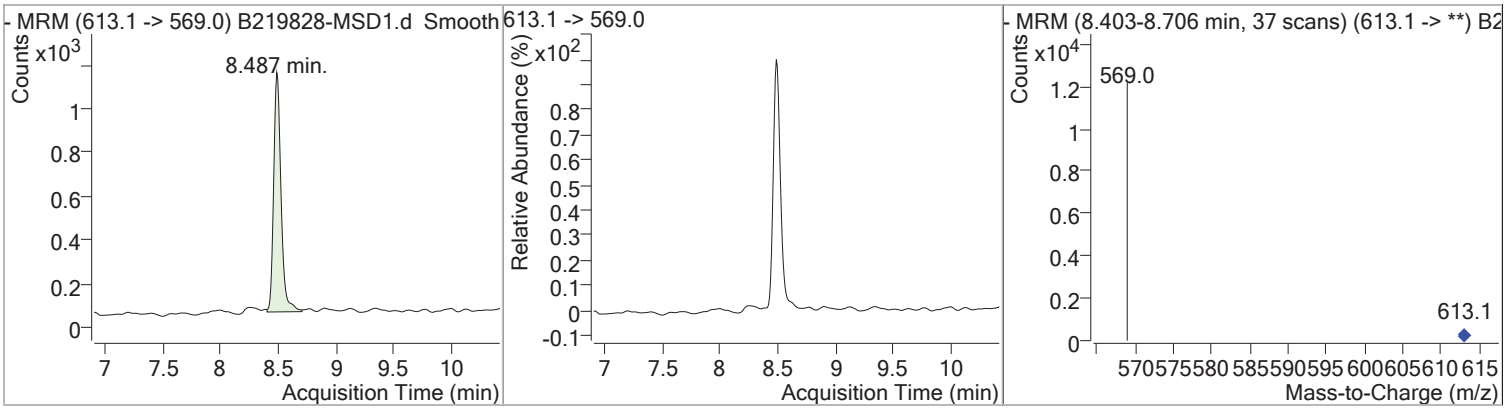
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
N-EtFOSAA	2519.3988	8.37	0.10	719				



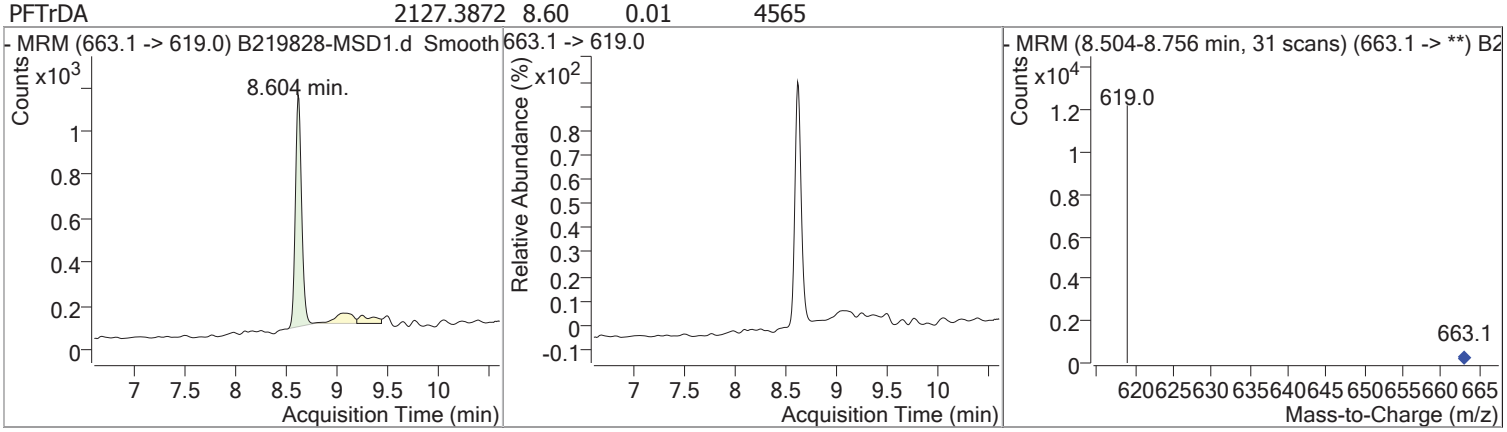
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFUnA	2555.4998	8.37	0.10	3666				



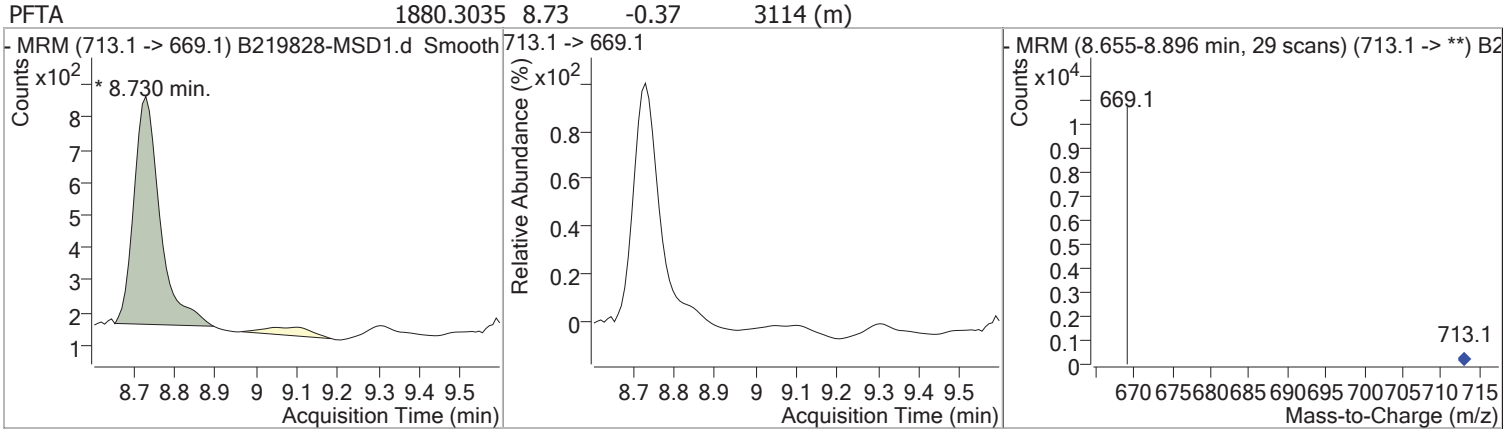
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFDoA	2508.3868	8.49	0.06	4869				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTrDA	2127.3872	8.60	0.01	4565				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Lower	Uppper
PFTA	1880.3035	8.73	-0.37	3114 (m)				



PREPARATION BENCH SHEET

Printed: 12/24/2018 8:02:40AM

Analysis
PFAS trace

B219828

Con-Test Analytical Laboratory

Prepared using: EPA 537

Surrogate Solution
1810341 Surr 537

Spiking Solution
1811167 Low 537 LCS

Matrix: Water NY

Lab Number	Sample ID and Source Sample	Due Date	Expires	Concentrated	pH	Cl Chk	Initial (mL)	Final (mL)	ul Spike	ul Surrogate	Extraction Comments
B219828-BLK1	Blank			26Dec18	7	T	250	1		10	
B219828-BS1	LCS								25	10	
B219828-MS1	Matrix Spike [18L0603-02]								25	10	
B219828-MS2	Matrix Spike [18L1134-01]								25	10	
B219828-MSD1	Matrix Spike Dup [18L0603-02]								25	10	
B219828-MSD2	Matrix Spike Dup [18L1134-01]								25	10	
18L0603-01	MW-15 121218	12 27 18	12 26 18							10	
18L0603-02	MW-5 121218	12 27 18	12 26 18							10	MS MSD
18L0603-03	MW-18 121218	12 27 18	12 26 18							10	
18L0603-04	MW-12 121218	12 27 18	12 26 18							10	
18L0603-05	MW-1 121218	12 27 18	12 26 18							10	
18L0603-06	field blank	12 27 18	12 26 18							10	
18L0603-07	equipment blank	12 27 18	12 26 18							10	
18L0603-08	DUP	12 27 18	12 26 18							10	
18L0870-01	MW-107S	12 28 18	12 31 18							10	
18L0870-03	MW-115S	12 28 18	01 01 19							10	
18L0870-06	Dup 121818	12 28 18	01 01 19							10	
18L0940-01	OSMW-2-20181218	01 04 19	01 01 19	27Dec18						10	CAT B report to MDL J Flags
18L0940-02	OSMW-1-20181218	01 04 19	01 01 19							10	CAT B report to MDL J Flags

CHECKED BY FRAN DEROSE JAN - 2019

WAF 24Dec18 — Spikedby/Witnessed By — Date

WAF 24Dec18 — Extracted By — Date

PREPARATION BENCH SHEET

Printed: 12/24/2018 8:02:40AM

Analysis
PFAS trace

B219828

Con-Test Analytical Laboratory

Prepared using: EPA 537

Surrogate Solution
1810341 Surr 537

Spiking Solution
1811167 Low 537 LCS

Matrix: Water

Lab Number	Sample ID and Source Sample	Due Date	Expires	Concentrated	pH Cl Chk	Initial (mL)	Final (mL)	ul Spike	ul Surrogate	Extraction Comments
18L0940-03	OSMW-3-20181218	01 04 19	01 01 19	27Dec18	7 T	250			10	CAT B report to MDL J Flags
18L0940-04	OSMW-3-20181218-1	01 04 19	01 01 19	↓	↓	↓			10	CAT B report to MDL J Flags
18L0940-05	EB-20181218	01 04 19	01 01 19	↓	↓	↓			10	CAT B report to MDL J Flags
18L0940-06	OSM3-4-20181218	01 04 19	01 01 19	↓	↓	↓			10	CAT B report to MDL J Flags
18L0940-07	OSMW-5-20181218	01 04 19	01 01 19	↓	↓	↓			10	CAT B report to MDL J Flags
18L1134-01	MW-104S	12 31 18	01 03 19	↓	↓	↓			10	MS MSD
18L1134-02	FB 122018	12 31 18	01 03 19	↓	↓	↓			10	

OASIS Cartridges E# 1809266
537 SPE Cartridges E# 1809295

Start Date/Time _____

StopDate/Time _____

Standard ID#	Description	Manufacture Lot#
1705357	Ammonium Acetate	NA
1810485	Methanol-LC/MS Grade	0000206973
1810536	TRIZMA	NA

CHECKED BY:
FRAN DEROSI JAN - - 2019

Spikedby/Witnessed By _____ Date _____

Extracted By _____ Date _____

ANALYSIS SEQUENCE

S030754

Instrument: HPLC1

Calibnration ID: 1800396

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client
S030754-CCV1	QC		1		1812315	1811149	
B219828-BS1	QC		2			1811149	
B219828-MS1	QC		3			1811149	
B219828-MSD1	QC		4			1811149	
B219828-BLK1	QC		5			1811149	
18L0603-01	PFAS trace	A	6			1811149	AECOM Environment - Latham, NY
18L0603-02	PFAS trace	A	7			1811149	AECOM Environment - Latham, NY
18L0603-03	PFAS trace	A	8			1811149	AECOM Environment - Latham, NY
18L0603-04	PFAS trace	A	9			1811149	AECOM Environment - Latham, NY
18L0603-05	PFAS trace	A	10			1811149	AECOM Environment - Latham, NY
18L0603-06	PFAS trace	A	11			1811149	AECOM Environment - Latham, NY
18L0603-07	PFAS trace	A	12			1811149	AECOM Environment - Latham, NY
18L0603-08	PFAS trace	A	13			1811149	AECOM Environment - Latham, NY
S030754-CCV2	QC		14		1812316	1811149	

Samples Loaded By Date

Data Processed By Date

ENVIRONMENTAL
Data Services, Inc.

DATA USABILITY SUMMARY REPORT
NORTHEAST ALLOYS & METALS, UTICA, NEW YORK

Client: AECOM Technical Services, Inc., Latham, New York
SDG: 18L0603
Laboratory: Con-Test Laboratories, East Longmeadow, Massachusetts
Site: Northeast Alloys & Metals, Utica, New York
Date: March 14, 2019

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	MW-15 121218	18L0603-01	Water
2	MW-5 121218	18L0603-02	Water
2MS	MW-5 121218MS	18L0603-02MS	Water
2MSD	MW-5 121218MSD	18L0603-02MSD	Water
3	MW-18 121218	18L0603-03	Water
4	MW-12 121218	18L0603-04	Water
5	MW-1 121218	18L0603-05	Water
6*	FIELD BLANK	18L0603-06	Water
7*	EQUIPMENT BLANK	18L0603-07	Water
8	DUP	18L0603-08	Water

* - PFCs only

A Data Usability Summary Review was performed on the analytical data for six water samples, one aqueous field blank sample, and one aqueous equipment blank sample collected on December 12, 2018 by AECOM at the Northeast Alloys and Metals site in Utica, New York. The samples were analyzed under Environmental Protection Agency (USEPA) "Test Methods for the Evaluation of Solid Waste, USEPA SW-846, Third Edition, September 1986, with revisions" and the USEPA Method "Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)".

Specific method references are as follows:

Analysis	*Method References*
SVOC (1,4-Dioxane)	USEPA SW-846 Method 8270D
PFCs	CON-TEST SOP 434-PFAAS

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, USEPA Region II Data Review Standard Operating Procedures (SOPs), and the USEPA National Functional Guidelines for Organic Data Review as follows:

- SOP Number HW-35A, Revision 1, September 2016: Semivolatile Data Validation;
- The USEPA "Contract Laboratories Program National Functional Guidelines for Organic Superfund Methods Data Review," January 2017;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Gas Chromatography/Mass Spectrometry (GC/MS) Tuning
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

Data Usability Assessment

There were no rejections of data.

Overall the data are acceptable for the intended purposes as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedances of QC criteria.

Data Completeness

- The data is a complete Category B data package as defined under the requirements for the NYS Department of Environmental Conservation Analytical Services Protocol.

Semivolatile Organic Compounds (1,4-Dioxane)

Holding Times

- All samples were extracted within 7 days for water samples and analyzed within 40 days.

GC/MS Tuning

- All criteria were met.

Initial Calibration

- The initial calibrations exhibited acceptable %RSD and/or correlation coefficients and mean RRF values.

Continuing Calibration

- The continuing calibrations exhibited acceptable %D and RRF values.

Method Blank

- The method blanks were free of contamination.

Field Blank

- Field QC samples were not analyzed for 1,4-dioxane.

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate recoveries (%R).

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values.

Laboratory Control Samples

- The LCS samples exhibited acceptable percent recoveries (%R).

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- Several samples were analyzed at various dilutions due to high concentrations of target compounds. The reporting limits were adjusted accordingly. No action was required.

Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

1,4-Dioxane				
Compound	MW-5 121218 ug/L	DUP 121218 ug/L	RPD	Qualifier
1, 4 Dioxane	4.0	4.0	0%	None

Perfluorinated Compounds (PFCs)

Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficient criteria were met.

Continuing Calibration

- The following table presents compounds that exceeded percent difference (%D) criteria in the continuing calibration (CCAL). A high %D may indicate a potential high or low bias. All results for these compounds in affected samples are considered estimated and qualified (J/UJ).

CCAL Date	Compound	%D	Qualifier	Affected Samples
12/27/18	PFPeA	46.8%	J/UJ	All Samples
	8:2FTS	41.1%	J/UJ	
	PFNA	43.5%	J/UJ	

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC samples were free of contamination.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
FIELD BLANK	None - ND	-	-	-
EQUIPMENT BLANK	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate percent recoveries (%R).

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The following table presents MS/MSD percent recoveries (%R) and/or RPD values outside the QC limits. A low %R may indicate a potential low bias while a high %R may indicate a potential high bias. For a low %R, positive results are considered estimated and qualified (J) while non-detects are estimated and qualified (UJ). For a high %R, positive results are considered estimated and qualified (J). Results are valid and usable, however possibly biased.

MS/MSD Sample ID	Compound	MS %R/MSD %R/RPD	Qualifier
2	PFBS	187%/167%/OK	J
	PFHxA	149%/148%/OK	None - Sample ND
	PFHpA	134%/136%/OK	
	PFHpS	163%/168%/OK	
	FOSA	OK/OK/31.8	None for RPD Alone
	6:2FTS	415%/328%/OK	J
	8:2FTS	226%/233%/OK	None - Sample ND
	PFHxS	184%/OK/40.3	J
	PFNA	OK/148%/OK	None - Sample ND
	NMeFOSAA	OK/OK/36.7	None for RPD Alone
	PFTrDA	60.1%/OK/34.4	UJ
	PFTA	40.0%/OK/61.0	

Laboratory Control Samples

- The following table presents LCS percent recoveries (%R) outside the QC limits. A low %R may indicate a potential low bias while a high %R may indicate a potential high bias. For a low %R, positive results are considered estimated and qualified (J) while non-detects are estimated and qualified (UJ). For a high %R, positive results are considered estimated and qualified (J). Results are valid and usable, however possibly biased.

LCS ID	Compound	%R	Qualifier	Affected Samples
B219828-BS1	FOSA	8.24%	UJ	All Samples
	8:2FTS	158%	None	All Samples ND

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- Several samples were analyzed at various dilutions due to high concentrations of target compounds. The reporting limits were adjusted accordingly. No action was required.

Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was unacceptable for several compounds in the field duplicate pair. These results were qualified estimated (J/UJ) in both samples.

Compound	MW-5 121218 ng/L	DUP 121218 ng/L	RPD	Qualifier
PFBS	3.1	13	123%	J/UJ
PFHxA	2.0U	45	NC	
PFHpA	2.0U	18	NC	
PFBA	2.0U	12	NC	
PFPeA	2.0U	47	NC	
6:2FTS	6.6	2.0U	NC	
PFHxS	2.7	10	115%	
PFOA	9.6	94	163%	
PFOS	10	21	71%	
PFNA	2.0U	4.1	NC	

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver Dated: 3/16/19

Nancy Weaver
Senior Chemist

Data Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The analyte is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
NJ	The analysis has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the samples.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the samples.

1 - FORM I
ANALYSIS DATA SHEET

MW-15 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-01	File ID:	F1224009.D
Sampled:	12/12/18 09:40	Prepared:	12/19/18 11:29	Analyzed:	12/24/18 13:17
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1020 mL / 1 mL				
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	0.56	0.032	0.20	

NW 3/4/19

1 - FORM I
ANALYSIS DATA SHEET

2

MW-5 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-02	File ID:	F1224010.D
Sampled:	12/12/18 11:00	Prepared:	12/19/18 11:29	Analyzed:	12/24/18 13:36
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1030 mL / 1 mL				
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	4.0	0.032	0.19	

MW 3/14/19

1 - FORM I
ANALYSIS DATA SHEET

3

MW-18 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-03	File ID:	F1224011.D
Sampled:	12/12/18 12:50	Prepared:	12/19/18 11:29	Analyzed:	12/24/18 13:56
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1020 mL / 1 mL				
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.032	0.20	

NW 3/14/19

4

1 - FORM I
ANALYSIS DATA SHEET

MW-12 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-04	File ID:	F1224012.D
Sampled:	12/12/18 14:10	Prepared:	12/19/18 11:29	Analyzed:	12/24/18 14:15
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1040 mL / 1 mL				
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.031	0.19	

MW 3/4/19

5

1 - FORM I
ANALYSIS DATA SHEET

MW-1 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-05	File ID:	F1224013.D
Sampled:	12/12/18 15:30	Prepared:	12/19/18 11:29	Analyzed:	12/24/18 14:35
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1040 mL / 1 mL				
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane		0.031	0.19	

DW 3/4/19

1 - FORM I
ANALYSIS DATA SHEET

8

DUP

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-08	File ID:	F1224014.D
Sampled:	12/12/18 00:00	Prepared:	12/19/18 11:29	Analyzed:	12/24/18 14:54
Solids:		Preparation:	SW-846 3510C	Dilution:	1
Initial/Final:	1040 mL / 1 mL				
Batch:	B219578	Sequence:	S030678	Calibration:	1800329
Instrument:	GCMSSV6				

CAS NO.	COMPOUND	CONC. (µg/L)	MDL	RL	Q
123-91-1	1,4-Dioxane	4.0	0.031	0.19	

MW 3/4/19

1 - FORM I
ANALYSIS DATA SHEET

MW-15 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-01	File ID:	lims export files full-006
Sampled:	12/12/18 09:40	Prepared:	12/24/18 08:00	Analyzed:	12/27/18 11:34
Solids:		Preparation:	EPA 537	Dilution:	1
Initial/Final:	250 mL / 1 mL				
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
Instrument:	HPLC1				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)		2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)	2.6	2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)		2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)		2.0	2.0	UJ
2706-90-3	Perfluoropentanoic acid (PFPeA)		2.0	2.0	UJ
	6:2 Fluorotelomersulfonate (6:2 FTS)	110	2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)		2.0	2.0	UJ
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)	2.6	2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)		2.0	2.0	UJ
335-76-2	Perfluorodecanoic acid (PFDA)		2.0	2.0	
	NMeFOSAA		2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		2.0	2.0	
	NEtFOSAA		2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		2.0	2.0	

NW 3/14/19

1 - FORM I
ANALYSIS DATA SHEET

2

MW-5 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-02	File ID:	lims export files full-007
Sampled:	12/12/18 11:00	Prepared:	12/24/18 08:00	Analyzed:	12/27/18 11:47
Solids:		Preparation:	EPA 537	Dilution:	1
Initial/Final:	250 mL / 1 mL				
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
Instrument:	HPLC1				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)	3.1 J	2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)	UJ	2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)	UJ	2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)	UJ	2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)	UJ	2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)	UJ	2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)	6.6 J	2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)	UJ	2.0	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	2.7 J	2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)	9.6 J	2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	10 J	2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)	UJ	2.0	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		2.0	2.0	
	NMeFOSAA		2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		2.0	2.0	
	NEtFOSAA		2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)	UJ	2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)	UJ	2.0	2.0	

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1 - FORM I
ANALYSIS DATA SHEET

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MW-18 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-03	File ID:	lims export files full-008
Sampled:	12/12/18 12:50	Prepared:	12/24/18 08:00	Analyzed:	12/27/18 11:59
Solids:		Preparation:	EPA 537	Dilution:	1
Initial/Final:	250 mL / 1 mL				
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
				Instrument:	HPLC1

CAS NO.	COMPOUND	CONC. (ng/L)		MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)	11		2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)	11		2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)	12		2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)	2.9		2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)			2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)			2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)		UJ	2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)	9.8	J	2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)			2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)		UJ	2.0	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	5.4		2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)	79		2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	20		2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)	4.4	J	2.0	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)			2.0	2.0	
	NMeFOSAA			2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)			2.0	2.0	
	NEtFOSAA			2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)			2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)			2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)			2.0	2.0	

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1 - FORM I
ANALYSIS DATA SHEET

MW-12 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-04	File ID:	lims export files full-009
Sampled:	12/12/18 14:10	Prepared:	12/24/18 08:00	Analyzed:	12/27/18 12:12
Solids:		Preparation:	EPA 537	Dilution:	1
Initial/Final:	250 mL / 1 mL				
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
				Instrument:	HPLC1

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)	3.6	2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)		2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)	3.3	2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)	UJ	2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)	UJ	2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)	5.6	2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)	UJ	2.0	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	4.8	2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)	3.1	2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)	UJ	2.0	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		2.0	2.0	
	NMeFOSAA		2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		2.0	2.0	
	NEtFOSAA		2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		2.0	2.0	

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1 - FORM I
ANALYSIS DATA SHEET

MW-1 121218

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-05	File ID:	lims export files full-010
Sampled:	12/12/18 15:30	Prepared:	12/24/18 08:00	Analyzed:	12/27/18 12:25
Solids:		Preparation:	EPA 537	Dilution:	1
Initial/Final:	250 mL / 1 mL				
Batch:	B219828	Sequence:	S030754	Calibration:	1800396	Instrument:	HPLC1

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)		2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)		2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)		2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)	UJ	2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)	2.5 J	2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)		2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)	UJ	2.0	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)		2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)	UJ	2.0	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		2.0	2.0	
	NMeFOSAA		2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		2.0	2.0	
	NEtFOSAA		2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		2.0	2.0	

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1 - FORM I
ANALYSIS DATA SHEET

b

field blank

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Field Blank	Laboratory ID:	18L0603-06	File ID:	lims export files full-011
Sampled:	12/12/18 11:10	Prepared:	12/24/18 08:00	Analyzed:	12/27/18 12:38
Solids:		Preparation:	EPA 537	Dilution:	1
Initial/Final:	250 mL / 1 mL				
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
Instrument:	HPLC1				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)		2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)		2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)		2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)	UJ	2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)	UJ	2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)		2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)	UJ	2.0	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)		2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)	UJ	2.0	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		2.0	2.0	
	NMeFOSAA		2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		2.0	2.0	
	NEtFOSAA		2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		2.0	2.0	

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1 - FORM I
ANALYSIS DATA SHEET

equipment blank

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Equipment Blank Water	Laboratory ID:	18L0603-07	File ID:	lims export files full-012
Sampled:	12/12/18 12:55	Prepared:	12/24/18 08:00	Analyzed:	12/27/18 12:50
Solids:		Preparation:	EPA 537	Dilution:	1
Initial/Final:	250 mL / 1 mL				
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
Instrument:	HPLC1				

CAS NO.	COMPOUND	CONC. (ng/L)	MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)		2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)		2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)		2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)		2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)		2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)		2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)	UJ	2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)	UJ	2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)		2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)	UJ	2.0	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)		2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)		2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)		2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)	UJ	2.0	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)		2.0	2.0	
	NMeFOSAA		2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)		2.0	2.0	
	NEtFOSAA		2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)		2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)		2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)		2.0	2.0	

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1 - FORM I
ANALYSIS DATA SHEET

8

DUP

Laboratory:	Con-Test Analytical Laboratory			Work Order:	18L0603
Client:	AECOM Environment - Latham, NY			Project:	60284002 - Utica, NY
Matrix:	Ground Water	Laboratory ID:	18L0603-08	File ID:	lims export files full-013
Sampled:	12/12/18 00:00	Prepared:	12/24/18 08:00	Analyzed:	12/27/18 13:03
Solids:		Preparation:	EPA 537	Dilution:	1
Initial/Final:	250 mL / 1 mL				
Batch:	B219828	Sequence:	S030754	Calibration:	1800396
Instrument:	HPLC1				

CAS NO.	COMPOUND	CONC. (ng/L)		MDL	RL	Q
375-73-5	Perfluorobutanesulfonic acid (PFBS)	13	J	2.0	2.0	
307-24-4	Perfluorohexanoic acid (PFHxA)	45	J	2.0	2.0	
375-85-9	Perfluoroheptanoic acid (PFHpA)	18	J	2.0	2.0	
375-22-4	Perfluorobutanoic acid (PFBA)	12	J	2.0	2.0	
335-77-3	Perfluorodecanesulfonic acid (PFDS)			2.0	2.0	
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)			2.0	2.0	
75491-6	Perfluorooctanesulfonamide (FOSA)		UJ	2.0	2.0	
2706-90-3	Perfluoropentanoic acid (PFPeA)	47	J	2.0	2.0	
	6:2 Fluorotelomersulfonate (6:2 FTS)		UJ	2.0	2.0	
	8:2 Fluorotelomersulfonate (8:2 FTS)		UJ	2.0	2.0	
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	10	J	2.0	2.0	
335-67-1	Perfluorooctanoic acid (PFOA)	94	J	2.0	2.0	
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	21	J	2.0	2.0	
375-95-1	Perfluorononanoic acid (PFNA)	4.1	J	2.0	2.0	
335-76-2	Perfluorodecanoic acid (PFDA)			2.0	2.0	
	NMeFOSAA			2.0	2.0	
2058-94-8	Perfluoroundecanoic acid (PFUnA)			2.0	2.0	
	NEtFOSAA			2.0	2.0	
307-55-1	Perfluorododecanoic acid (PFDoA)			2.0	2.0	
72629-94-8	Perfluorotridecanoic acid (PFTrDA)			2.0	2.0	
376-06-7	Perfluorotetradecanoic acid (PFTA)			2.0	2.0	

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