DRAFT FINAL
Site Inspection Report
Camp Smith Training
Site Cortlandt, New York

Perfluorooctanesulfonic Acid (PFOS) and
Perfluorooctanoic Acid (PFOA) Impacted Sites
ARNG Installations, Nationwide

January 2022

Prepared for:

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Table of Contents

Executive Summary 1
1. Introduction 1-1
1.1 Project Authorization 1-1
1.2 SI Purpose 1-1
2. Facility Background 2-1
2.1 Facility Location and Description 2-1
2.2 Facility Environmental Setting 2-1
2.2.1 Geology 2-1
2.2.2 Hydrogeology 2-2
2.2.3 Hydrology 2-3
2.2.4 Climate 2-3
2.2.5 Current and Future Land Use 2-3
2.2.6 Sensitive Habitat and Threatened/ Endangered Species 2-3
2.3 History of PFAS Use 2-4
2.4 Other PFAS Investigations 2-4
3. Summary of Areas of Interest 3-1
3.1 AOI 1 Former Fire Pit 3-1
3.2 AOI 2 3-1
3.3 AOI 3 3-1
3.3.1 Former Airfield 3-1
3.3.2 Former NYS AFSA 3-2
4. Project Data Quality Objectives 4-1
4.1 Problem Statement 4-1
4.2 Goals of the Study 4-1
4.3 Information Inputs 4-2
4.4 Study Boundaries 4-2
4.5 Analytical Approach 4-2
4.6 Data Usability Assessment 4-3
4.6.1 Precision 4-3
4.6.2 Accuracy 4-4
4.6.3 Representativeness 4-5
4.6.4 Comparability 4-6
4.6.5 Completeness 4-6
4.6.6 Sensitivity 4-7
5. Site Inspection Activities 5-1
5.1 Pre-Investigation Activities 5-2
5.1.1 Technical Project Planning 5-2
5.1.2 Utility Clearance 5-2
5.1.3 Source Water and PFAS Sampling Equipment Acceptability 5-2
5.2 Soil Borings and Soil Sampling 5-3
5.3 Monitoring Well Installation and Groundwater Sampling 5-4
5.4 Surface Water and Sediment Sampling 5-6
5.5 Synoptic Water Level Measurements 5-7
5.6 Surveying 5-7

5.7 Investigation-Derived Waste....5-7
5.8 Laboratory Analytical Methods....5-7
5.9 Deviations from SI QAPP Addenda....5-8
6. Site Inspection Results....6-1
6.1 Screening Levels....6-1
6.2 Soil Physicochemical Analyses....6-2
6.3 AOI 1....6-2
6.3.1 AOI 1 Soil Analytical Results....6-2
6.3.2 AOI 1 Groundwater Analytical Results....6-2
6.3.3 AOI 1 Conclusions....6-3
6.4 AOI 2....6-3
6.4.1 AOI 2 Soil Analytical Results....6-3
6.4.2 AOI 2 Groundwater Analytical Results....6-4
6.4.3 AOI 2 Conclusions....6-4
6.5 AOI 3....6-4
6.5.1 AOI 3 Soil Analytical Results....6-4
6.5.2 AOI 3 Groundwater Analytical Results....6-5
6.5.3 AOI 3 Conclusions....6-5
6.6 Facility-Wide Surface Water and Sediment....6-5
6.6.1 Sediment Analytical Results....6-5
6.6.2 Surface Water Analytical Results....6-6
6.6.3 Conclusions....6-6
7. Exposure Pathways....7-1
7.1 Soil Exposure Pathway....7-1
7.1.1 AOI 1....7-1
7.1.2 AOI 2....7-2
7.1.3 AOI 3....7-2
7.2 Groundwater Exposure Pathway....7-2
7.2.1 AOI 1....7-2
7.2.2 AOI 2....7-3
7.2.3 AOI 3....7-3
7.3 Surface Water and Sediment Exposure Pathway....7-3
7.3.1 Facility-Wide Surface Water and Sediment....7-4
8. Summary and Outcome....8-1
8.1 SI Activities....8-1
8.2 SI Goals Evaluation....8-1
8.3 Outcome....8-3
9. References....9-1

Appendices

Appendix A	Data Validation Reports
Appendix B	Field Documentation
	B1. Log of Daily Notice of Field Activities
	B2. Sampling Forms
	B3. Field Change Request Forms
	B4. Survey Data
	B5. IDW Polygons
Appendix C	Photographic Log
Appendix D	TPP Meeting Minutes
Appendix E	Boring Logs and Well Construction Forms
Appendix F	Analytical Results
Appendix G	Laboratory Reports

Figures

Figure 2-1	Facility Location
Figure 2-2	Facility Topography
Figure 2-3	Groundwater Features
Figure 2-4	Groundwater Elevations, December 2019
Figure 2-5	Groundwater Elevations, July 2021
Figure 2-6	Surface Water Features
Figure 3-1	Areas of Interest
Figure 5-1	Site Inspection Sample Locations (Mobilization 1)
Figure 5-2	Site Inspection Sample Locations (Mobilization 2)
Figure 6-1	PFOA Detections in Soil, Mobilization 1
Figure 6-2	PFOS Detections in Soil, Mobilization 1
Figure 6-3	PFBS Detections in Soil, Mobilization 1
Figure 6-4	PFOA Detections in Soil, Mobilization 2
Figure 6-5	PFOS Detections in Soil, Mobilization 2
Figure 6-6	PFBS Detections in Soil, Mobilization 2
Figure 6-7	PFOA, PFOS, and PFBS Detections in Groundwater, Mobilization 1
Figure 6-8	PFOA, PFOS, and PFBS Detections in Groundwater, Mobilization 2
Figure 6-9	PFOA, PFOS, and PFBS Detections in Sediment
Figure 6-10	PFOA, PFOS, and PFBS Detections in Surface Water
Figure 7-1	Conceptual Site Model, AOI 1
Figure 7-2	Conceptual Site Model, AOI 2
Figure 7-3	Conceptual Site Model, AOI 3

Tables

Table ES-1 Screening Levels (Soil and Groundwater)
Table ES-2 Summary of Site Inspection Findings
Table 5-1 Site Inspection Samples by Medium
Table 5-2 Soil Boring Depths, Well Screen Intervals, and Groundwater Elevations
Table 6-1 Screening Levels (Soil and Groundwater)
Table 6-2 PFAS Detections in Surface Soil
Table 6-3 PFAS Detections in Shallow Subsurface Soil
Table 6-4 PFAS Detections in Deep Subsurface Soil
Table 6-5 PFAS Detections in Groundwater
Table 6-6 PFAS Detections in Sediment
Table 6-7 PFAS Detections in Surface Water
Table 8-1 Summary of Site Inspection Findings
Table 8-2 Site Inspection Recommendations

Acronyms and Abbreviations

%	percent
°C	degrees Celsius
°F	degrees Fahrenheit
µg/kg	micrograms per kilogram
6:2 FTS	6:2 Fluorotelomer sulfonate
8:2 FTS	8:2 Fluorotelomer sulfonate
ACS	Admiral Conservation Services Underground Solutions
AECOM	AECOM Technical Services, Inc.
AFFF	aqueous film forming foam
AFSA	Academy of Fire Science Annex
AOI	Area of Interest
ARNG	Army National Guard
ASTM	American Society for Testing and Materials
bgs	below ground surface
Cascade	Cascade Technical Services, LLC
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFMO	Construction and Facilities Management Officer
CoC	chain of custody
CSM	conceptual site model
CSMS	Combined Support Maintenance Shop
DA	Department of the Army
DO	dissolved oxygen
DoD	Department of Defense
DPT	direct push technology
DQI	data quality indicator
DQO	data quality objective
DUA	data usability assessment
DVR	data validation report
EIS	extraction internal standards
ELAP	Environmental Laboratory Approval Program
EM	Engineers Manual
ERB	equipment rinsate blank
FedEx	Federal Express
FRB	field reagent blank
gpm	gallons per minute
GPR	ground-penetrating radar
HA	Health Advisory
HDPE	high-density polyethylene
IDW	investigation-derived waste
ITRC	Interstate Technology Regulatory Council
LC/MS/MS	liquid chromatography with tandem mass spectrometry
LCS	laboratory control sample

171	LCSD	laboratory control sample duplicate
172	LOD	limit of detection
173	LOQ	limit of quantitation
174	MDL	method detection limit
175	mph	miles per hour
176	MS	matrix spike
177	MSD	matrix spike duplicate
178	NELAP	National Environmental Laboratory Accreditation Program
179	NEtFOSAA	N-ethyl perfluorooctanesulfonamidoacetic acid
180	ng/L	nanograms per liter
181	NMeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid
182	NOAA	National Oceanic and Atmospheric Administration
183	NYARNG	New York Army National Guard
184	NYCRR	New York Codes, Rules, and Regulations
185	NYS	New York State
186	NYSDEC	New York State Department of Environmental Conservation
187	NYSDMNA	New York State Department of Military and Naval Affairs
188	ORP	oxidation-reduction potential
189	OSD	Office of the Secretary of Defense
190	PA	Preliminary Assessment
191	PFAS	per- and polyfluoroalkyl substances
192	PFBA	perfluorobutyrate
193	PFBS	perfluorobutanesulfonic acid
194	PFDA	perfluorodecanoic acid
195	PFDoA	perfluorododecanoic acid
196	PFHpA	perfluoroheptanoic acid
197	PFHxA	perfluorohexanoic acid
198	PFHxS	perfluorohexanesulfonic acid
199	PFNA	perfluorononanoic acid
200	PFOA	perfluorooctanoic acid
201	PFOS	perfluorooctanesulfonic acid
202	PFPeA	perfluoropentanoic acid
203	PFTeDA	perfluorotetradecanoic acid
204	PFTrDA	perfluorotridecanoic acid
205	PFUdA	perfluoroundecanoic acid
206	PID	photoionization detector
207	PQAPP	Programmatic UFP-QAPP
208	PVC	polyvinyl chloride
209	QA	quality assurance
210	QAPP	Quality Assurance Project Plan
211	QC	quality control
212	QSM	Quality Systems Manual
213	RI	Remedial Investigation
214	RPD	relative percent differences

215	SI	Site Inspection
216	SL	screening level
217	SOP	standard operating procedure
218	TCRA	Time Critical Removal Action
219	TOC	total organic carbon
220	TPP	Technical Project Planning
221	UFP	Uniform Federal Policy
222	UCMR 3	Unregulated Contaminant Monitoring Rule
223	US	United States
224	USACE	United States Army Corps of Engineers
225	USCS	Unified Soil Classification System
226	USEPA	United States Environmental Protection Agency
227	USFWS	United States Fish and Wildlife Service
228	USGS	United States Geological Survey
229	VSI	visual site inspection
230	WWTP	wastewater treatment plant

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Executive Summary

The Army National Guard (ARNG) G9 is performing Preliminary Assessments (PAs) and Site Inspections (SIs) at per- and polyfluoroalkyl substances (PFAS)-impacted sites at ARNG facilities nationwide. The objective of the SI at each facility is to identify whether there has been a release to the environment from the Areas of Interest (AOIs) identified in the PA and determine the presence or absence of perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), and perfluorobutanesulfonic acid (PFBS) at or above screening levels (SLs). An SI was completed at the Camp Smith Training Site (Camp Smith) in Cortlandt, New York. Camp Smith will also be referred to as the "facility" throughout this document.

Camp Smith is in Cortlandt, Westchester County, New York. Camp Smith borders Putnam County to the north and the City of Peekskill to the southeast; the Hudson River lies west and south of Camp Smith. Camp Smith can be accessed directly from New York State (NYS) Route 6. Bear Mountain Bridge Road runs along the facility on the western and southern borders, and the United States (US) Military Academy at West Point is located across the Hudson River, approximately 10 miles north (NYS Department of Military and Naval Affairs [NYSDMNA], 2018).

Camp Smith comprises roughly 1,600 acres of training property for the New York ARNG (NYARNG). Approximately 94 percent of Camp Smith is rugged mountainous terrain, while the remaining 95-acre cantonment area consists of outdoor ranges, training simulation facilities, administrative buildings and a maintenance shop sitting on a plateau overlooking the Hudson River. Camp Smith has no air support facilities. Camp Smith is approximately 30 miles north of New York City and approximately 0.75 miles east of the Hudson River (NYSDMNA, 2018). The SI field activities were conducted in two mobilizations. The first mobilization included soil, grab groundwater sampling from temporary monitoring wells, surface water and sediment sampling from 9 to 12 December 2019. The second mobilization included the collection of soil and groundwater samples from permanent monitoring wells from 19 to 28 July 2021.

To fulfill the project Data Quality Objectives set forth in the approved SI Quality Assurance Project Plan Addenda (AECOM, 2019b; AECOM, 2021), samples were collected and analyzed for a subset of 18 PFAS by liquid chromatography with tandem mass spectrometry (LC/MS/MS) compliant with Quality Systems Manual 5.3 Table B-15. The 18 PFAS analyzed as part of the ARNG SI program are specified in **Section 5.8** of this Report.

The Department of Defense (DoD) has adopted a policy to retain facilities in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process based on risk-based SLs for soil and groundwater, as described in a memorandum from the Office of the Secretary of Defense (OSD) dated 15 September 2021 (Assistant Secretary of Defense, 2021). The ARNG program under which this SI was performed follows this DoD policy. Should the maximum site concentration for sampled media exceed the SLs established in the OSD memorandum, the AOI will proceed to the next phase under CERCLA. The SLs established in the OSD memorandum apply to three compounds: PFOS, PFOA, and PFBS.

Additionally, the US Environmental Protection Agency (USEPA) issued drinking water lifetime Health Advisories (HAs) for PFOA and PFOS in May 2016 (USEPA 2016a; USEPA, 2016b). The USEPA HAs may also be used as SLs for groundwater samples collected at the facility boundary where off-facility drinking water wells are present downgradient. The SLs are presented on **Table ES-1** below. All other results presented in this report are considered informational in nature and serve as an indication as to whether soil, groundwater, sediment, and surface water contain or do not contain the 18 PFAS analyzed within the boundaries of the facility.

Sample chemical analytical concentrations were compared against the project SLs as described in **Table ES-1**. A summary of the results of the SI data relative to the SLs is as follows:

- At AOI 1, PFOA in groundwater exceeded the SL of 40 nanograms per liter (ng/L), with a maximum concentration of 58.4 ng/L at location AOI 1-GW3. Based on the results of the SI, further evaluation of AOI 1 is warranted in a Remedial Investigation (RI).
- At AOI 2 and 3, PFOS in groundwater exceeded the SL of 40 ng/L, with a maximum concentration of 147 ng/L at location CS-MW003S. Based on the results of the SI, further evaluation of AOI 2 and 3 is warranted in a RI.
- The detected concentrations of PFOA, PFOS, and PFBS in soil at all AOIs were below the SLs.
- PFOA, PFOS, and PFBS were not detected in surface water. PFOA and PFOS were detected in sediment samples. There are no established SLs for sediment; therefore, these results are presented for informational purposes only.

Table ES-2 summarizes the SI results for soil and groundwater. Based on the conceptual site models developed and revised in light of the SI findings, there is potential for exposure to drinking water receptors caused by DoD activities at or adjacent to the facility.

Table ES-3 summarizes the rationale used to determine if an AOI should be considered for further investigation under CERCLA and undergo an RI. Based on the findings of this SI, ARNG will program and plan for an RI at areas exceeding OSD screening values, pending the availability of resources and assessed risk to human health.

Table ES-1: Screening Levels (Soil and Groundwater)

Analyte	Residential (Soil) (µg/kg)[a,b] 0-2 feet bgs	Industrial/ Commercial Composite Worker (Soil) (µg/kg)[a,b] 2-15 feet bgs	Tap Water (Groundwater) (ng/L)[a,b]	USEPA HA (Groundwater representative of Drinking Water) (ng/L)[c,d]
PFOA	130	1,600	40	70
PFOS	130	1,600	40	70
PFBS	1,900	25,000	600	-

Notes:

a.) Assistant Secretary of Defense, 2021. Risk Based Screening Levels Calculated for PFOS, PFOA, PFBS in Groundwater and Soil using United States Environmental Protection Agency's (USEPA's) Regional Screening Level Calculator. Hazard Quotient (HQ) = 0.1. 15 September 2021.

b.) USEPA. 2016a. Drinking Water Health Advisory (HA) for Perfluorooctanoic Acid (PFOA). Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. USEPA Document Number: 822-R-16-005. May 2016. / USEPA. 2016b. Drinking Water HA for Perfluorooctane Sulfonic Acid (PFOS). Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. USEPA Document Number: 822-R-16-004. May 2016.

c.) USEPA HAs apply to the PFOA and PFOS concentrations individually or combined.

Table ES-2: Summary of Site Inspection Findings

AOI	Potential PFAS Release Area	Soil – Source Area	Groundwater – Source Area	Groundwater – Facility Boundary
1	Former Fire Pit	◐	●	NA
2	Former Fire Station	◐	●	NA
3	Former Airfield	◐	●	NA
3	Former NYS AFSA	◐	●	NA

Legend:
N/A = not applicable
AFSA = Academy of Fire Science Annex
● = detected; exceedance of the screening levels
◐ = detected; no exceedance of the screening levels
○ = not detected

Table ES-3: Site Inspection Recommendations

AOI	Description	Rationale	Future Action
1	Former Fire Pit	Exceedances of the OSD screening levels in groundwater at AOI 1. No exceedances of OSD screening levels in soil.	Proceed to RI
2	Former Fire Station	Exceedances of the OSD screening levels in groundwater at AOI 2. No exceedances of OSD screening levels in soil.	Proceed to RI
3	Former Airfield	Exceedances of the OSD screening levels in groundwater at AOI 3. No exceedances of OSD screening levels in soil.	Proceed to RI
3	Former NYS AFSA	Exceedances of the OSD screening levels in groundwater at AOI 3. No exceedances of OSD screening levels in soil.	Proceed to RI

Legend:
AFSA = Academy of Fire Science Annex
NYS = New York State

326

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1. Introduction

1.1 Project Authorization

The Army National Guard (ARNG) G9 is the lead agency in performing Preliminary Assessments (PAs) and Site Inspections (SIs) for Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) at Impacted Sites, ARNG Installations, Nationwide. This work is supported by the United States (US) Army Corps of Engineers (USACE) Baltimore District and their contractor, AECOM Technical Services, Inc. (AECOM), under Contract Number W912DR-12-D-0014, Task Order W912DR17F0192, issued 11 August 2017. The ARNG performed this SI at the Camp Smith Training Site in Cortlandt, New York. The Camp Smith Training Site (or Camp Smith) is also referred to as the "facility" throughout this document.

The SI project elements were performed in compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; US Environmental Protection Agency [USEPA], 1980), as amended, the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations Part 300; USEPA, 1994), and in compliance with US Department of the Army (DA) requirements and guidance for field investigations including specific requirements for sampling for PFOA, PFOS, and perfluorobutanesulfonic acid (PFBS), and the group of related compounds known in the industry as per- and polyfluoroalkyl substances (PFAS). The term PFAS is used throughout this report to encompass all PFAS chemicals being evaluated, including PFOA, PFOS, and PFBS, which are the key components of the suspected releases being evaluated, and the other 15 related compounds listed in the task order.

1.2 SI Purpose

A PA was performed at Camp Smith (AECOM, 2019a) that identified four potential PFAS release areas at the facility, which were grouped into three Areas of Interest (AOIs). The objective of the SI is to identify whether there has been a release to the environment from the AOIs and determine the presence or absence of PFOA, PFOS, and PFBS at or above screening levels (SLs).

As stated in the *Federal Facilities Remedial Site Inspection Summary Guide* (USEPA, 2005), an SI has five goals:

1. Develop information to potentially eliminate a release from further consideration because it is determined that it poses no significant threat to human health or the environment;
2. Determine the potential need for a removal action;
3. Collect or develop data to evaluate potential release;
4. Collect data to better characterize the release for more effective and rapid initiation of a Remedial Investigation (RI), if determined necessary; and
5. Collect data to determine whether the release is more than likely the result of activities associated with the DoD.

In addition to the USEPA-identified goals of an SI, the ARNG SI also identifies whether there are potential off-facility PFAS sources.

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2. Facility Background

2.1 Facility Location and Description

Camp Smith is in Cortlandt Manor, Westchester County, New York (**Figure 2-1**). Camp Smith borders Putnam County to the north, and the City of Peekskill to the southeast. The Hudson River lies west and south of Camp Smith. Camp Smith can be accessed directly from New York State (NYS) Route 6. Bear Mountain Bridge Road runs along the facility on the western and southern borders, and the US Military Academy at West Point is located across the Hudson River, approximately 10 miles north (NYS Department of Military and Naval Affairs [NYSDMNA], 2018).

Camp Smith comprises roughly 1,600 acres of training property for the New York ARNG (NYARNG). Approximately 94% of Camp Smith is rugged, mountainous terrain, while the remaining 95-acre cantonment area consists of outdoor ranges, training simulation facilities, administrative buildings, and maintenance shops sitting on a plateau overlooking the Hudson River. Camp Smith has no air support facilities. Camp Smith is approximately 30 miles north of New York City and approximately 0.75 miles east of the Hudson River (NYSDMNA, 2018).

2.2 Facility Environmental Setting

Westchester County is a predominately suburban area largely consisting of rolling hills in the Hudson Valley region of New York. The terrain of the facility is consistent with the majority of Westchester County. The county has a total of 430.5 square miles. The nearest residential properties to the facility are along the northern property line. The Camp Smith trail head is approximately 0.5 miles to the west of the facility. Iona Island and the Iona Island Component Hudson River National Estuarine Research Reserve lie two miles to the west of the facility, across the Hudson River. The site topography of Camp Smith is shown on **Figure 2-2**.

2.2.1 Geology

Camp Smith is east of the Hudson River, within the eastern geological region of the Hudson Highlands formation (NYARNG, 2015), a segment of the New England Uplands physiographic province. This region forms part of the Reading Prong, an extension of the Ridge and Valley province extending from Pennsylvania, through northern New Jersey and southern New York, and ending in Connecticut. The Hudson Highlands were formed as a result of periods of mountain building during Precambrian, Ordovician, and Devonian periods. These mountains were consequently scoured and leveled by glaciation events during the Pleistocene period.

Most of the 95-acre cantonment area lies in a shallow valley outwash plain. The majority of both the surface and underlying material of the northern section of Camp Smith are Pleistocene age unconsolidated glacial deposits, recent floodplain deposits, and lacustrine delta. These sediments consist of silts underlain by fine sands and gravels of variable thicknesses ranging between 40 to nearly 200 feet (Berkley et al., 1919; Isachsen et al., 2000). The Pleistocene age deposits overly Precambrian bedrock consisting of hornblende gneiss, which comprises two-thirds of all rock found at Camp Smith. The area geology is presented in **Figure 2-3**.

A previous NYARNG subsurface investigation indicated that the southern portion of Camp Smith contains intermixed layers of unconsolidated sand, silt, and clay, with variable amounts of gravel, peat, and organic clay (NYARNG, 2015). The majority of this southern portion is poorly drained Ipswich mucky peat (69.9 percent [%]), well-drained Riverhead loam (24.8%), and somewhat poorly drained Udorthents (1.4%). The topography in the southern portion of the facility (at the Main Gate) drops 80 to 100 feet in elevation compared to the rest of the cantonment area. As a

result, the overburden is thinner here and the lithology is reflective of low energy river and wetland deposits from the adjacent Hudson River and Annsville Creek.

On the southernmost boundary of Camp Smith, near the Hudson River, is exposed (or within 3 feet of surface) Precambrian bedrock, which travels north along the western boundary of the training site (Eric et al., 1954). Many of the drinking water wells in the Hudson Valley come from bedrock; however, they do not yield as much as unconsolidated sediments.

2.2.2 Hydrogeology

Based on the USEPA's map of Sole Source Aquifers, a sole source aquifer does not lie beneath Camp Smith. The NYS Department of Environmental Conservation (NYSDEC) *Map of Principal and Primary Aquifers in New York State* indicates that a primary aquifer does not lie beneath the Camp Smith cantonment area (US Geological Survey [USGS], 1998). Unconsolidated aquifers make up over 60 acres of the 95-acre cantonment area. Infiltration of precipitation and runoff is the sole source of recharge for aquifers at Camp Smith (USGS, 1995).

Unconsolidated glacial deposits of thick sand and gravel underlie flood plains and terraces along tributaries to the Hudson River and occupy many valleys (Chazen, 2003), yielding the largest supply to wells in Westchester County. However, more than 70% of the drinking water wells in Westchester County are gneiss or schist bedrock wells with yields averaging 30 gallons per minute (gpm). If limestone is tapped, yields can range from 2 to as much as 450 gpm.

Groundwater in the Camp Smith cantonment area generally flows from north to south, towards the Hudson River (**Figure 2-3**), or towards various creeks and surface water features that run south to the Hudson River. A water quality assessment for groundwater under the influence of surface water was performed at Camp Smith in 2008. The assessment concluded that groundwater at Camp Smith is not influenced by surface water (Ecology and Environment, 2008). Two potable wells in the southern cantonment area of Camp Smith, Wells A and B, supply drinking water to the facility. The wells are located on the edge of the wetland area in the southern portion of Camp Smith. Well A is 80 feet deep, with a screen installed between 65 and 80 feet below ground surface (bgs), and Well B is 100 feet deep, with a screen installed between 82 and 100 feet bgs (NYARNG, 2015). Well logs for these potable wells were not available; however, boring logs from several nearby test borings indicate the top of bedrock ranges from 60 to 90 feet bgs in the general area. It is likely Wells A and B are screened within bedrock.

Borings from the wetland area in a previous NYARNG study indicate a thick organic clay confining unit that separates surface water from the confined aquifer below (NYARNG, 2015); the extent of this clay layer is not known. Wells A and B draw water from the confined aquifer. It is possible that the clay layer thins out and is not present further upgradient in the northern cantonment area. This trend would potentially allow upgradient surface water and groundwater to infiltrate the deeper aquifer, from where groundwater is drawn. One other potentially potable well at Camp Smith is used for lavatory purposes. There are no drinking water fountains connected to this potentially potable well.

Depth to groundwater was observed to range from 0.5 to 22.2 feet bgs in December 2019 during SI Mobilization 1 field activities and 7.19 to 79.76 feet bgs during the July 2021 SI Mobilization 2 field activities. The observed depth to water at CS-MW002D (79.76 feet bgs) is significantly deeper than the other depths to water measured in monitoring wells across the facility. This could be due to semi-confined conditions at depth; however, results from the SI could not confirm. Additional deep borings and monitoring wells would be needed to evaluate the hydrogeology of the facility further. The Groundwater contour maps from Mobilization 1 and 2 are provided in **Figure 2-4** and **Figure 2-5.**

2.2.3 Hydrology

Camp Smith is in the Lower Hudson River watershed, which is a part of the 13,300 square mile Hudson River basin. The main channel of the Hudson River spans nearly 1,000 feet of Camp Smith's western and southern boundaries and forms a deep gorge through the Hudson Highlands in this area (NYARNG, 2015). Surface water resources at Camp Smith include natural streams, rivers, and open water features. Several unnamed intermittent tributaries and numerous vernal pools and wetlands are scattered throughout the facility. Surface runoff from the facility eventually drains into the Hudson River.

Dickiebusch Lake is on the northeastern end of Camp Smith (**Figure 2-6**). Dickiebusch Lake covers approximately 6 acres and is connected to several streams, one of which is Putnam Brook. The headwaters of Putnam Brook flow into the northern-most portion of Dickiebusch Lake, which then drains south bordering Camp Smith on the west before draining into the Annsville Creek impoundment. Annsville Creek borders Camp Smith on the eastern side of the facility before turning southwest to border the southern portion.

The confluence of the Annsville Creek and Putnam Brook at the Annsville Creek impoundment is tidally influenced, as this impoundment is connected to the Hudson River. This small bay/impoundment/tidal wetland was artificially created by a railroad berm.

2.2.4 Climate

The climate at Camp Smith and the surrounding Westchester County is predominantly continental, with an average annual temperature of 52.45 degrees Fahrenheit (°F). Seasonally, temperatures vary from an average summer high of 61.2°F, to average winter lows of 26°F (National Oceanic and Atmospheric Administration [NOAA], 2018). The annual average wind speed is 8.9 miles per hour (mph), although winter months can have gusts up to 35 mph. The total mean annual precipitation is 42.3 inches. July is the driest month, with an average of 2.91 inches of precipitation, while August is the wettest month, with 4.49 inches of precipitation. Short, intense thunderstorms are the major sources of summer precipitation. The average annual snowfall is 55 inches.

2.2.5 Current and Future Land Use

Camp Smith is a private facility with one access point through a guarded security gate, off Route 202, that runs parallel to the Hudson River. The majority of the property is used for military training. Approximately 94% of Camp Smith is rugged, mountainous terrain. The remaining 95-acre cantonment area consists of outdoor ranges, training simulation facilities, administrative buildings, and maintenance shops that sit on a plateau overlooking the Hudson River (NYSDMNA, 2018). There are no current expansion plans for Camp Smith, and in general, the future use of the facility is not expected to change.

2.2.6 Sensitive Habitat and Threatened/ Endangered Species

The following species are listed as federally endangered, threatened, proposed, and/or candidate species in Westchester County, New York (US Fish and Wildlife Service [USFWS], 2021):

- **Mammals**: Northern Long-Eared bat, *Myotis septentrionalis* (threatened)**;** Indiana bat, *Myotis sodalist* (endangered)
- **Reptiles**: Bog turtle, *Clemmys muhlenbergii* (threatened)
- **Insects**: Monarch Butterfly, *Danaus plexippus* (candidate)

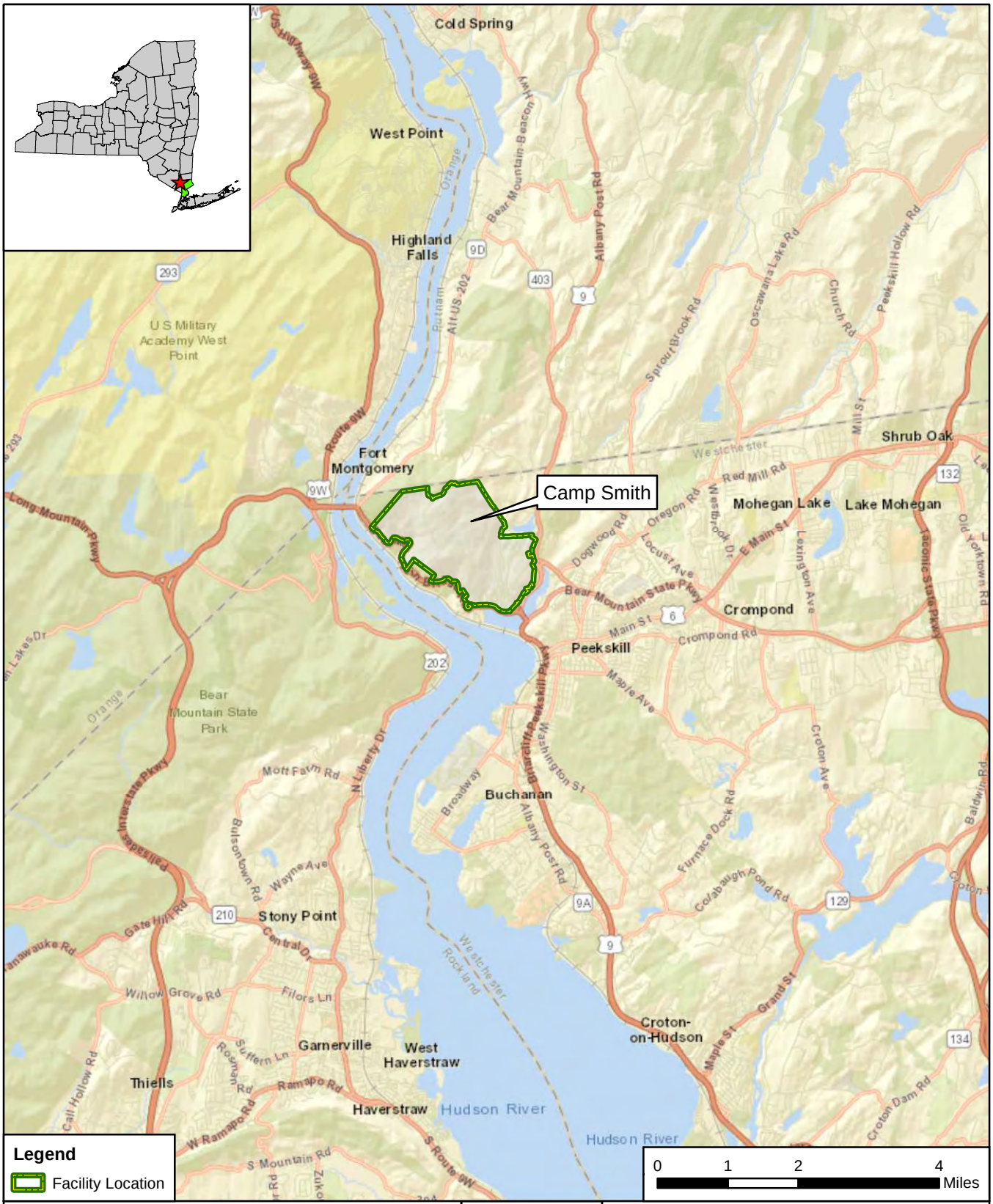
2.3 History of PFAS Use

Four potential PFAS release areas (grouped into three AOIs) where aqueous film forming foam (AFFF) may have been used or released historically were identified at Camp Smith during the PA (AECOM, 2019a). Overall, due to the lack of institutional knowledge, records, and documentation relating to AFFF, there is an uncertainty regarding the history of PFAS use at Camp Smith. Each potential release area identified in the PA Report identified a level of uncertainty either relating to usage of AFFF-containing PFAS, certainty of the dates of storage or use of AFFF onsite, or any recorded instances of usage of AFFF. At the Former Fire Pit, live fire training exercises occurred with some frequency. Presence or use of AFFF for these exercises could not be confirmed during the PA. At the Former Fire Station, firefighting equipment was mandated to be stored onsite and ready for use during refueling activities, but no firefighting equipment was observed during the PA. It is unknown if any of the training activities that occurred at the former airfield or former NYS Academy of Fire Science Annex (AFSA) included fire training with AFFF or other firefighting foams.

During Mobilization 2, additional information was obtained regarding the onsite wastewater treatment plant (WWTP) and former sludge drying beds. The WWTP and former sludge drying beds are located between the identified AOIs and Wells A and B. The sludge drying beds are no longer in use, but could be a potential secondary source given the presence of PFAS in the potable water source at the facility. There is no evidence to suggest the WWTP is a potential release area. At the time, the team agreed to proceed with finalizing the mobilization and SI phase and to investigate the former sludge drying bed as a potential new source during the RI.

2.4 Other PFAS Investigations

Based on the USEPA Unregulated Contaminant Monitoring Rule 3 (UCMR 3) data, it was indicated that PFAS were detected in the New Windsor Consolidated Water District public water system above the USEPA lifetime Health Advisories (HAs). The New Windsor Consolidated Water District is located approximately 11 miles north of the facility and the source of water the district is the Ashokan Reservoir in Ulster County, New York, as well, as several potable extraction wells located within New Windsor, New York. As of 5 December 2014, PFOS and PFOA were detected in one of the potable extraction wells at 128 and 21.5 nanograms per liter (ng/L), respectively (USEPA, 2017a). NYARNG began quarterly sampling of drinking water in April 2017 at Well A and Well B (approximate location shown on **Figure 2-3**). From April 2017 to April 2019, PFAS were consistently detected below the USEPA HA of 70 ng/L in both Well A and Well B. However, in the March 2020 sampling event, the combined concentrations of PFOA and PFOS were above the USEPA HA, at 72.2 ng/L. Due to this exceedance, the NYARNG has installed point of use filters on drinking water stations and plans to install a facility wide treatment system in the future.



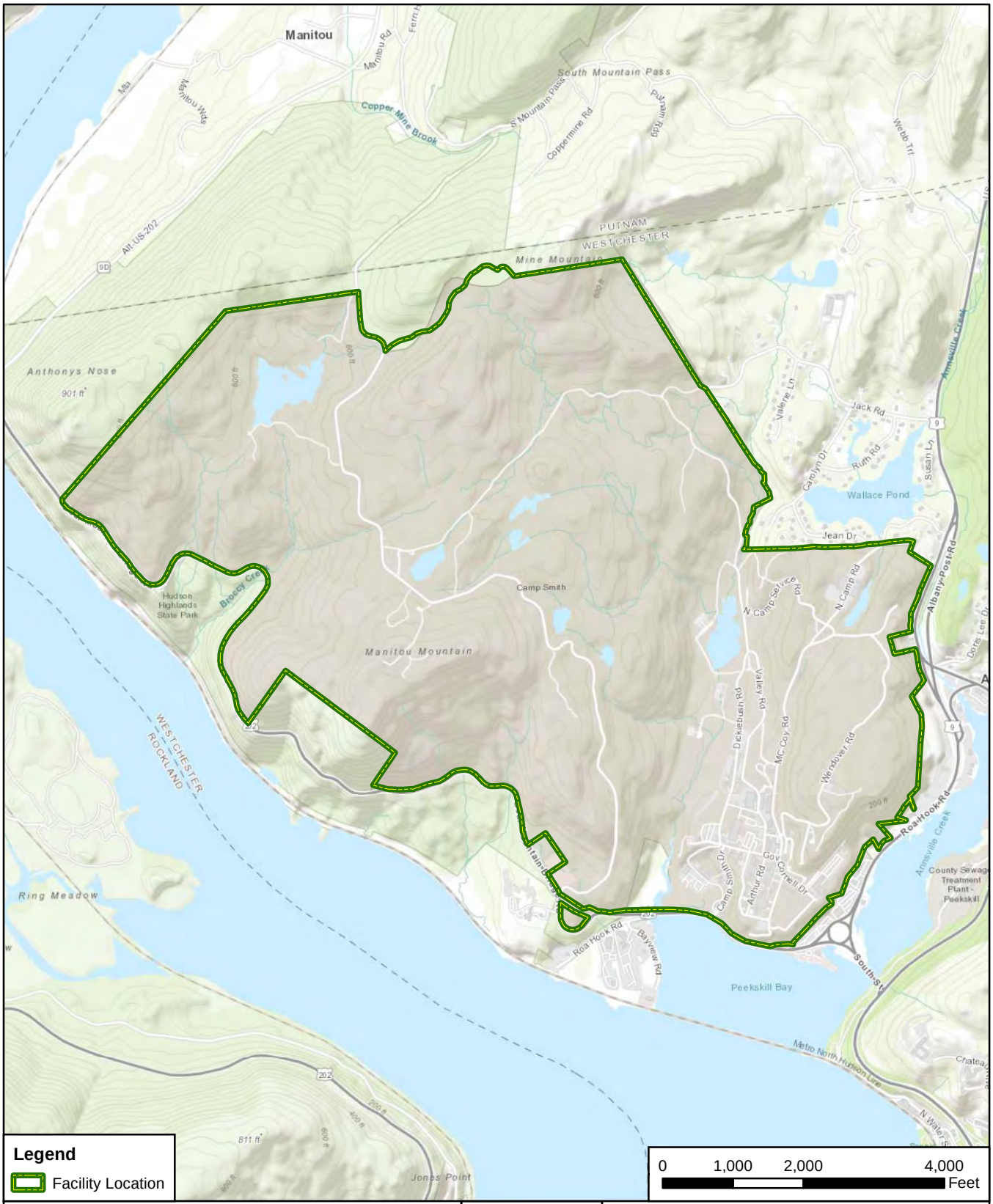
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NOTES	Site Inspection for PFAS at Camp Smith, NY			
REVISED	10/22/2021	GIS BY	MS	10/22/2021
SCALE	1:126,720	CHK BY	AB	10/22/2021
Base Map: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI,		PM	CM	10/22/2021

Facility Location

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 2-1

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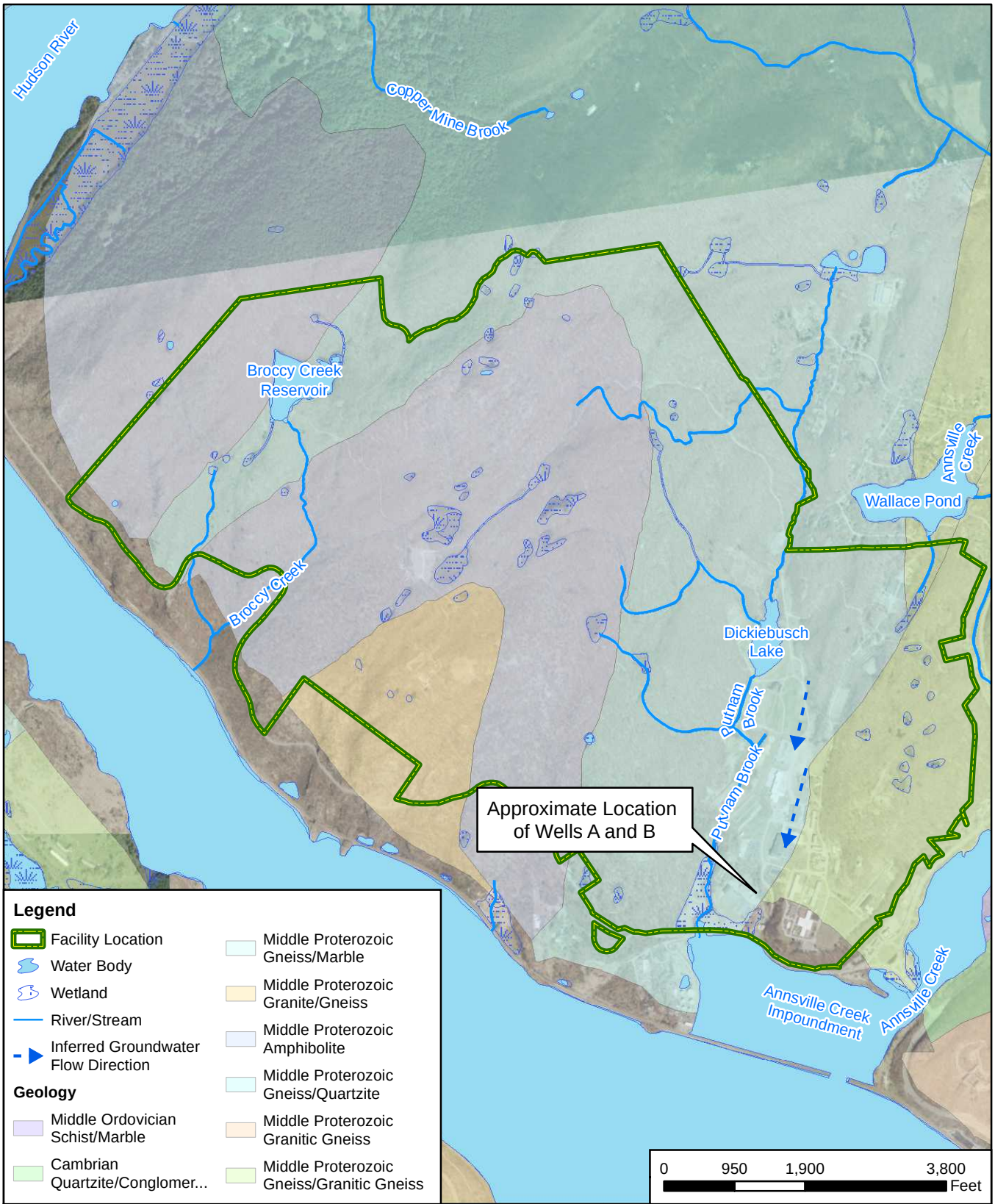
CLIENT	ARNG			
NOTES	Site Inspection for PFAS at Camp Smith, NY			
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SCALE	1:24,000	CHK BY	AB	10/22/2021
Base Map: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN,		PM	CM	10/22/2021

Facility Topography

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Figure 2-2

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CLIENT	ARNG			
NOTES	Site Inspection for PFAS at Camp Smith, NY			
REVISED	12/9/2021	GIS BY	MS	12/9/2021
SCALE	1:22,800	CHK BY	AB	12/9/2021
Base Map: NYS Digital Ortho-imagery Program (NYSDOP), 2016		PM	CM	12/9/2021

Groundwater Features

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Figure 2-3

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CLIENT	ARNG			
NOTES	Site Inspection for PFAS at Camp Smith, NY			
REVISED	10/22/2021	GIS BY	MS	10/22/2021
SCALE	1:7,200	CHK BY	AB	10/22/2021
Base Map: NYS Digital Ortho-imagery Program (NYSDOP), 2016		PM	CM	10/22/2021

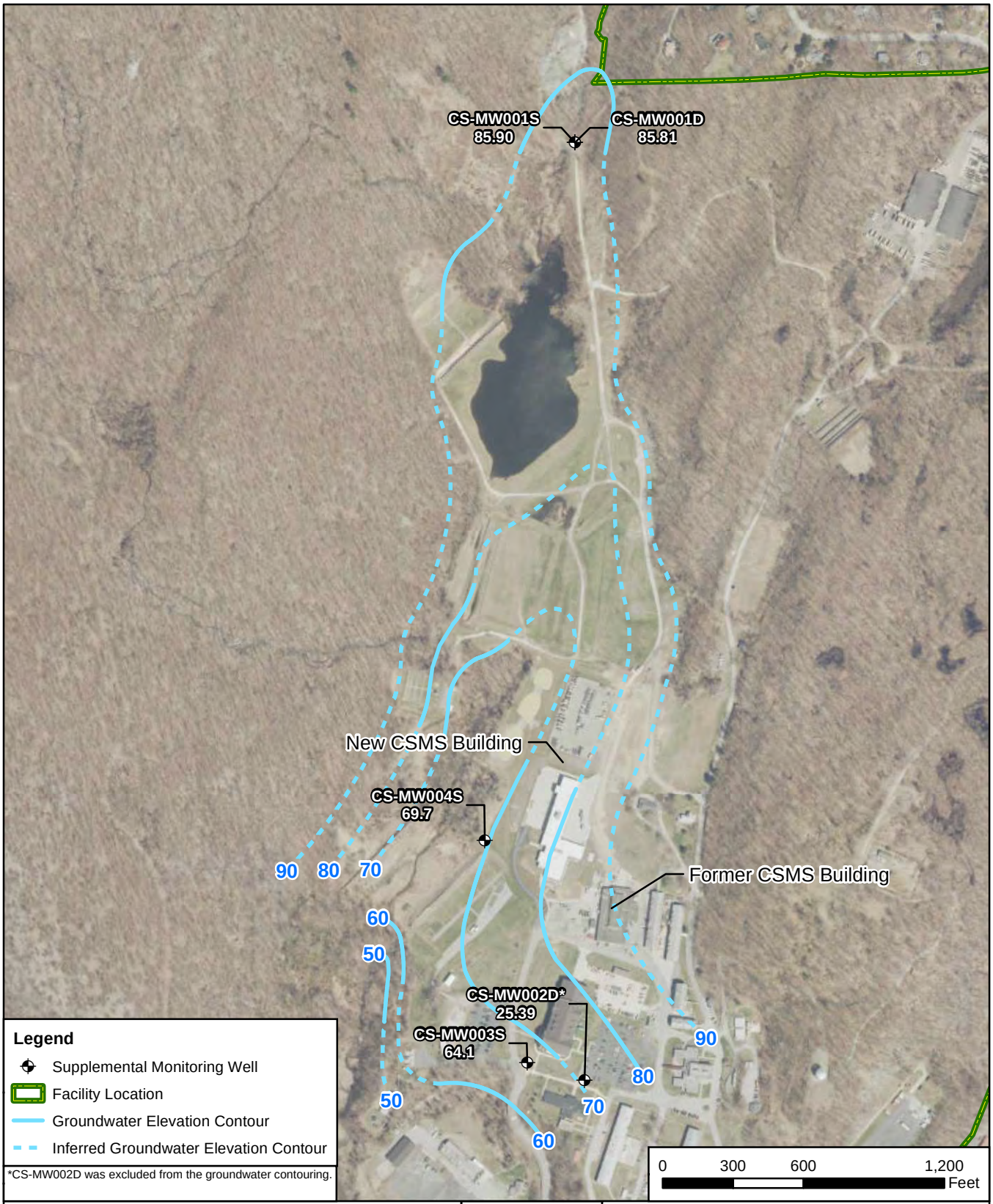
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Groundwater Elevations, December 2019

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Germantown, MD 20876

Figure 2-4

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CLIENT	ARNG			
NOTES	Site Inspection for PFAS at Camp Smith, NY			
REVISED	12/8/2021	GIS BY	MS	12/8/2021
SCALE	1:7,200	CHK BY	AB	12/8/2021
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,		PM	CM	12/8/2021

N

Groundwater Elevations, July 2021

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Germantown, MD 20876

Figure 2-5

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CLIENT	ARNG			
NOTES	Site Inspection for PFAS at Camp Smith, NY			
REVISED	12/8/2021	GIS BY	MS	12/8/2021
SCALE	1:22,800	CHK BY	AB	12/8/2021
Base Map: NYS Digital Ortho-imagery Program (NYSDOP), 2016		PM	CM	12/8/2021

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Surface Water Features

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Germantown, MD 20876

Figure 2-6

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3. Summary of Areas of Interest

This section presents a summary of each potential PFAS release area by AOI. Based on the PA findings, four potential PFAS release areas, the Former Fire Pit, Former Fire Station, and Former Airfield/NYS AFSA, were grouped into three AOIs. The potential PFAS release areas are shown on **Figure 3-1**.

3.1 AOI 1 Former Fire Pit

AOI 1 consists of one potential PFAS release area, the Former Fire Pit. The Former Fire Pit is on the northern end of the property, adjacent to Dickiebusch Lake, at geographic coordinates 41°18'36.96"N； 73°56'24.19"W. This area is approximately 184 feet long by 113 feet wide and is essentially a dirt expanse of sand and gravel on the eastern side of N. Camp Road.

During the visual site inspection (VSI) completed during the PA, a bare earthen patch was observed that appeared to have been smoothed and paved over multiple times in the past. Interviewees described patch as a former live fire training exercise area in which exercises occurred with some frequency, possibly once per month; however, the presence or use of AFFF for these exercises could not be confirmed during the VSI or interviews with NYARNG personnel.

The Former Fire Pit was the training ground for the Camp Smith fire fighters and emergency responders and was active between 1980 and 1996. If AFFF was used for fire training activities at this area, it may have contained PFAS; therefore, activities related to fire training at this AOI have the potential for PFAS releases.

3.2 AOI 2

AOI 2 consists of one potential PFAS release area, the Former Fire Station. Based on aerial photographs, the Former Fire Station was approximately 500 feet east of the southern end of the former airfield runway, at geographic coordinates 41°18'10.01"N；73°56'21.34"W, and was active between 1980 and 1996. When operational, the VSI interviewee stated that two trucks were parked inside the Former Fire Station: an old Chevy half-deuce water truck and an old Ford that was not operational.

In the Former Fire Station’s last few years of operation, there were only civilian hourly employees onsite during the weekends. The interviewee indicated he was not aware of any AFFF use or storage at Camp Smith. After 1996, the former fire station was torn down and replaced with a parking lot. The two trucks were given to the Continental Village Fire Department, the municipal fire department for Westchester County, which provides emergency services for all major incidents at Camp Smith. Due to gaps in interviewee knowledge regarding use of AFFF on the firetrucks, the Former Fire Station is considered a potential PFAS release area.

3.3 AOI 3

AOI 3 consists of two potential PFAS release areas, the Former Airfield and the Former NYS AFSA. These areas are described in the subsections below.

3.3.1 Former Airfield

The Former Airfield is an area, as described during interviews during the VSI, that is located at the southeastern end of Dickiebusch Lake, at geographic coordinates 41°18'31.19"N； 73°56'24.87"W, and approximately 2,500 feet in length running north to south. Aerial photographs confirm a runway was constructed sometime after 1955, but before 1960, and was later removed

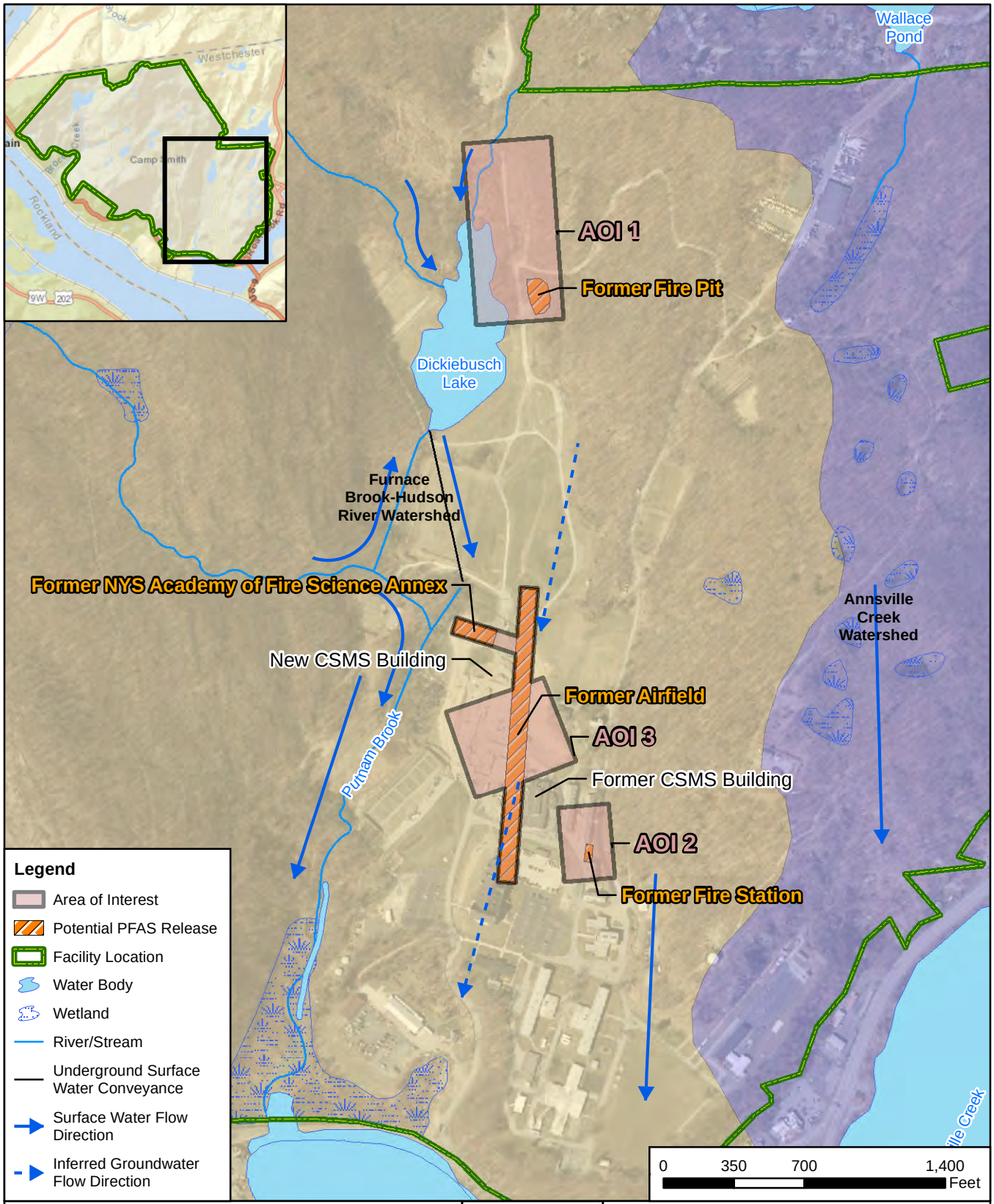
in the late-1970s. The Camp Smith Maintenance Equipment Mechanic, who has been working at Camp Smith since 1988, stated that the Former Airfield was possibly active during parts of the Korean and Vietnam Wars, but he was unaware of any incidents that occurred and required the use of AFFF. However, because fire training activities have historically been frequently conducted at the edges of runways, the Former Airfield is considered a potential PFAS release area.

3.3.2 Former NYS AFSA

During the VSI, an interview with the Construction and Facilities Management Officer (CFMO) was performed at the NYARNG headquarters in Latham, New York. The CFMO stated that a "former NYS fire inspection agency" was formerly located on-post, located slightly northwest of the new Combined Support Maintenance Shop (CSMS) building, and was associated with a cluster of former buildings. The duration of occupancy of the buildings by the "former fire inspection agency" is unclear; however, historical aerials indicate that the buildings were built sometime between 1974 and 1984 and demolished sometime between October 2014 and April 2016.

Additional research after submission of the Final PA Report confirmed that the facility complex was the NYS AFSA. Activities at the former NYS AFSA were described as including classroom training, fire services, forensics, and arson investigation. Because personnel with first-hand knowledge of training activities that occurred at the AFSA were not available for interviews during the PA, there were gaps in knowledge of AFFF use and storage at this location. It is unknown if any of the training activities that occurred at the facility included fire training with AFFF or other firefighting foams. As such, PFAS may have been released at the former NYS AFSA; therefore, the former NYS AFSA is a potential PFAS release area. The former NYS AFSA operated beginning in the late-1990's and ceased operation in September 2006.

Following demolition of the buildings in approximately 2014, nearly 8 feet of fill from the general area of the former NYS AFSA was removed and transported for use in the foundation of the new CSMS building. Because of this removal, soil potentially impacted with PFAS may have been spread from the source location to below the new CSMS building.



CLIENT	ARNG			
NOTES	Site Investigation for PFAS at Camp Smith, NY			
REVISED	5/21/2020	GIS BY	MS	5/21/2020
SCALE	1:8,400	CHK BY	BP	5/21/2020
Base Map: NYS Digital Ortho-imagery Program (NYSDOP), 2016		PM	RG	5/21/2020

N

Areas of Interest

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 3-1

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4. Project Data Quality Objectives

Project Data Quality Objectives (DQOs) are qualitative and quantitative statements that specify the quality of data and define the level of certainty required to support project decision-making process. The specific DQOs established for this facility are described below. These DQOs were developed in accordance with the USEPA's seven-step iterative process (USEPA, 2006).

4.1 Problem Statement

The following problem statement was developed during project planning:

The presence of PFAS, which may pose a risk to human health or the environment, in environmental media at the facility is currently unknown. PFAS are classified as emerging environmental contaminants that are garnering increasing regulatory interest due to their potential risks to human health and the environment. The regulatory framework for managing PFAS at both the federal and state level continues to evolve.

The DoD has adopted a policy to retain facilities in the CERCLA process based on risk-based SLs for soil and groundwater, as described in a memorandum from the Office of the Secretary of Defense (OSD) dated 15 September 2021 (Assistant Secretary of Defense, 2021). The ARNG program under which this SI was performed follows this DoD policy. Should the maximum site concentration for sampled media exceed the SLs established in the OSD memorandum, the AOI will proceed to the next phase under CERCLA. The SLs established in the OSD memorandum apply to three compounds: PFOS, PFOA, and PFBS.

Additionally, the USEPA issued drinking water lifetime HAs for PFOA and PFOS in May 2016 (USEPA 2016a; USEPA, 2016b). The USEPA HAs may also be used as SLs for groundwater samples collected at the facility boundary where off-facility drinking water wells are present downgradient. The SLs are presented in **Section 6.1** of this Report.

The following quotes from the DA policy documents form the basis for this project (DA, 2016; DA, 2018):

- "The Army will research and identify locations where PFOS- and/or PFOA-containing products, such as AFFF, are known or suspected to have been used. Installations shall coordinate with installation/facility fire response or training offices to identify AFFF use or storage locations. The Army will consider FTAs, AFFF storage locations, hangars/buildings with AFFF suppression systems, fire equipment maintenance areas, and areas where emergency response operations required AFFF use as possible source areas. In addition, metal plating operations, which used certain PFOS-containing mist suppressants, shall be considered possible source areas.".

- "Based on a review of site records…determine whether a CERCLA PA is appropriate for identifying PFOS/PFOA release sites. If the PA determines a PFOS/PFOA release may have occurred, a CERCLA SI shall be conducted to determine presence/absence of contamination.".

- "Identify sites where perfluorinated compounds are known or suspected to have been released, with the priority being those sites within 20 miles of the public systems that tested above USEPA HA levels." (USEPA, 2016a; USEPA, 2016b).

4.2 Goals of the Study

The following goals were established for this SI:

1. Determine the presence or absence of PFOA, PFOS, and PFBS at or above SLs.
2. Develop information to potentially eliminate a release from further consideration because it is determined that it poses no significant threat to human health or the environment.
3. Determine the potential need for a Time Critical Removal Action (TCRA) (applies to drinking water only). The primary actions that will be considered include provision of alternative water supplies or wellhead treatment.
4. Collect data to better characterize the release areas for more effective and rapid initiation of a RI (if determined necessary).
5. If PFOA, PFOS, and PFBS are determined to be present, aim to evaluate whether the concentrations can be attributed to on-facility or off-facility sources that were identified within 4 miles of the installation as part of the PA (e.g., fire stations, major manufacturers, other DoD facilities).
6. Determine whether a potentially complete pathway exists between the source and potential receptors and whether ARNG is the likely source of the contamination.

4.3 Information Inputs

Primary information inputs included:

- The PA for Camp Smith (AECOM, 2019b);
- Analytical data from groundwater, soil, surface water, and sediment samples collected as part of this SI in accordance with the site-specific Uniform Federal Policy (UFP)-Quality Assurance Project Plan (QAPP) Addenda (AECOM, 2021; AECOM, 2019b); and
- Field data collected during the SI, including groundwater elevation and water quality parameters measured at the time of sampling.

4.4 Study Boundaries

The scope of the SI was bounded by the property limits of the facility (**Figure 2-2**). Off-facility sampling was not included in the scope of this SI. If future off-facility sampling is required, the proper stakeholders will be notified, and necessary rights of entry will be obtained by ARNG with property owner(s).

4.5 Analytical Approach

Samples were analyzed for PFAS by LC/MS/MS compliant with Table B-15 of DoD QSM 5.3 (QSM 5.1 during Mobilization 1) by Pace Analytical Gulf Coast, accredited under the DoD Environmental Laboratory Accreditation Program (DoD ELAP; Accreditation Number 74960) and the National Environmental Laboratory Accreditation Program (NELAP; Certificate Number 01955). Data were compared to applicable SLs and decision rules as defined in the SI QAPP Addenda (AECOM, 2019b, 2021). These rules governed response actions based on the results of the SI sampling effort.

The decision rules described in the **Worksheet #11** of the SI QAPP Addenda identify actions based on the following:

Groundwater:

- Is there a human receptor within 4 miles of the facility?

- What is the concentration of PFOA, PFOS, and PFBS at the potential release areas?
- What is the concentration of PFOA, PFOS, and PFBS at the facility boundary upgradient and downgradient of the potential release areas?
- What does the conceptual site model (CSM) suggest in terms of source, pathway and receptor?

Soil:

- What is the concentration of PFOA, PFOS, and PFBS in shallow surface soil (0 to 2 feet bgs)?
- What is the concentration of PFOA, PFOS, and PFBS in deep soil (i.e., capillary fringe)?
- What does the CSM suggest in terms of source, pathway, and receptor?

Soil and groundwater samples were collected from each of the potential release areas. During Mobilization 1, groundwater was encountered at approximately 0.5 to 22.2 feet bgs. During Mobilization 2, groundwater was encountered at 7.19 to 79.76 feet bgs.

4.6 Data Usability Assessment

The Data Usability Assessment (DUA) is an evaluation at the conclusion of data collection activities that uses the results of both data verification and validation in the context of the overall project decisions or objectives. Using both quantitative and qualitative methods, the assessment determines whether project execution and the resulting data have met installation-specific DQOs. Both sampling and analytical activities are considered to assess whether the collected data are of the right type, quality, and quantity to support the decision-making (DoD, 2019a; DoD, 2019b; USEPA, 2017b).

Data Quality Indicators (DQIs) (Precision, Accuracy, Representativeness, Comparability, Completeness and Sensitivity) are important components in assessing data usability. These DQIs were evaluated in the subsequent sections and demonstrate that the data presented in this SI report are of high quality. Although the SI data are considered reliable, some degree of uncertainty can be associated with the data collected. Specific factors that may contribute to the uncertainty of the data evaluation are described below. The Data Validation Report (DVR) (**Appendix A**) presents explanations for all qualified data in greater detail.

4.6.1 Precision

Precision is the degree of agreement among repeated measurements of the same characteristic on the same sample or on separate samples collected as close as possible in time and place. Field sampling precision is measured with the field duplicate relative percent differences (RPD); laboratory precision is measured with calibration verification, internal standard recoveries, laboratory control sample (LCS) and matrix spike (MS) duplicate RPD.

Extraction internal standards (EIS) were added by the laboratory during sample extraction to measure relative responses of target analytes and used to correct for bias associated with matrix interferences and sample preparation efficiencies, injection volume variances, mass spectrometry ionization efficiencies, and other associated preparation and analytical anomalies. Several field samples displayed EIS area counts less than the lower quality control (QC) limit of 50%. The positive field sample results associated with EIS area counts less than the QC limit, but greater than 20%, were qualified “J+”, while non-detects were qualified “UJ”. The qualified results should be considered usable as estimated values with a positive bias. The field sample results associated with area counts less than 20% were qualified “X” for positive field sample results and “UX” for

non-detect field sample results. The qualified field sample results associated with EIS area counts less than 20%, but greater than 10%, are recommended for use as estimated values with a positive bias, and they are reported with interpreted qualifiers of “J+” for the positive associated field sample results and “UJ” for the associated non-detect field sample results. Additionally, the positive field sample results associated with EIS area counts less than 10% are recommended for use as estimated values with a positive bias and are reported with interpreted qualifiers of “J+”. The project team determined these qualified results were usable for project purposes. The non-detect field sample results associated with the remaining EIS area counts less than 10% were qualified “UX”. The data points flagged X/UX were non-detect results for perfluorotetradecanoic acid (PFTeDA) and perfluorotridecanoic acid (PFTrDA), while these compounds were detected in other samples, no site decisions were made based on the presence or absence of these two compounds.

Calibration verifications were performed routinely to ensure that instrument responses for all calibrated analytes were within established QC criteria. All calibration verifications were within the project established precision limits presented in the SI QAPP Addenda (AECOM, 2019b; AECOM, 2021).

LCS/LCS duplicate (LCSD) pairs were prepared by addition of known concentrations of each analyte in a matrix-free media known to be free of target analytes. LCS/LCSD pairs were analyzed for every analytical batch to demonstrate the ability of the laboratory to detect similar concentrations of a known quantity in matrix-free media. The LCS/LCSD samples were within the project established precision limits presented in the SI QAPP Addenda (AECOM, 2019b; AECOM, 2021).

MS/MS duplicate (MSD) samples were prepared, analyzed, and reported for all preparation batches. MS/MSD samples demonstrated that the analytical system was in control for the matrix being tested. MS/MSD samples were submitted to the laboratory for analysis at a rate of 5%. Several MS/MSD samples displayed RPD greater than the upper QC limit of 30%. The positive associate parent sample results were previously qualified due to MS/MSD percent recovery anomalies, as discussed in **Section 4.6.2**; therefore, no further data qualifying action was required.

Field duplicate samples were collected at a rate of 10% to assess the overall sampling and measurement precision for this sampling effort. The field duplicate samples were analyzed for PFAS and general chemistry parameters. The field duplicate samples were within the project established precision limits presented in the SI QAPP Addenda (AECOM, 2019b; AECOM, 2021).

4.6.2 Accuracy

Accuracy is a measure of confidence in a measurement. The smaller the difference between the measurement of a parameter and its "true" or expected value, the more accurate the measurement. The more precise or reproducible the result, the more reliable or accurate the result. Accuracy is measured through percent recoveries in the LCS/LCSD, MS/MSD, and surrogates.

LCS/LCSD samples were prepared by addition of known concentrations of each analyte in a matrix free media known to be free of target analytes. LCS/LCSD samples were analyzed for every analytical batch and demonstrated that the analytical system was in control during sample preparation and analysis, with one exception. The LCS/LCSD pairs prepared in batches 673520, 672387, 659305, and 660319 displayed percent recoveries greater than the upper QC limit of 130% for several analytes. The positive associated field sample results were qualified “J+” and should be considered usable as estimated values with a positive bias.

MS/MSD samples were prepared, analyzed, and reported at a rate of 5%. MS/MSD samples demonstrated that the analytical system was in control for the matrix being tested, with a limited number of exceptions. Several MS/MSD pairs displayed percent recoveries outside the QC limits. The positive parent sample results associated with the positive biases were qualified “J+” and should be considered usable as estimated values with a positive bias. The parent sample results associated with the 0% recoveries were non-detect and were qualified “UX”. These “UX”-flagged results were non-detect for PFTeDA and PFTrDA. While these compounds were detected in other samples, no site decisions were made based on the presence or absence of these two compounds. The parent sample results associated with the remaining negative biases were positive and were qualified “J-”, while non-detects were qualified “UJ”. The qualified field sample results should be considered usable as estimated values with a negative bias. The positive parent sample result associated with the combination of high and low percent recoveries for PFOA was qualified “J” and should be considered usable as an estimated value with an indeterminate bias.

4.6.3 Representativeness

Representativeness qualitatively expresses the degree to which data accurately reflect facility conditions. Factors that affect the representativeness of analytical data include appropriate sample population definitions, proper sample collection and preservation techniques, analytical holding times, use of standard analytical methods, and determination of matrix or analyte interferences.

Several field samples were re-extracted outside the holding time requirement of 14 days due to internal standard failures in the initial extraction with similar results. The positive associated field sample results were qualified “J”, while non-detects were qualified “UJ”. The qualified field sample results should be considered usable as estimated values. For all samples with re-extracted results, the data reviewer recommended one usable result from either the initial or re-extracted analysis based on professional judgement of data quality. Additionally, the holding time for pH analysis is ‘immediate’; all field samples analyzed for pH were qualified “J”.

Relating to the use of standard analytical methods, the laboratory followed the method as established in PFAS by liquid chromatography with tandem mass spectrometry (LC/MS/MS) compliant with Quality Systems Manual (QSM) 5.3 Table B-15 (QSM 5.1 during Mobilization 1). The use of this method included the specific preparation requirements (i.e. ENVI-Carb or equivalent used), mass calibration, spectra, all the ion transitions identified in Table B-15 were monitored, standards that contained both branched and linear isomers when available were used, and isotopically labeled standards were used for quantitation.

Field QC samples were collected to assess the representativeness of the data collected. Field duplicates were collected at a rate of 10% for all field samples, while MS/MSD samples were collected at a rate of 5%. All preservation techniques were followed by the field staff, and all technical and analytical holding times were met by the laboratory, with the exception of the re-extracted field samples previously discussed. The laboratory used approved standard methods in accordance with the SI QAPP Addenda (AECOM, 2019b; AECOM, 2021) for all analyses.

Instrument blanks and method blanks were prepared by the laboratory in each batch as a negative control. Several PFAS instrument blanks and method blanks displayed detections greater than the detection limit for multiple target analytes. In total, 98 field sample results were qualified “U” during data validation due to associated detections in instrument and/or method blanks. The reported field sample result values were adjusted to be equal to the limit of detection (LOD); the LOD was elevated to the concentration of the blank detection in instances where the blank concentration was greater than the LOD. The results are usable as qualified but should be considered false positives and treated as non-detect.

Two field reagent blanks (FRB) were collected during the event (Mobilization 1 and 2). Equipment rinsate blanks (ERBs) were also collected for groundwater, soil, and sediment samples. Several ERBs displayed detections greater than the detection limit. In total, 17 field sample results were qualified "U" during data validation due to associated FRB and/or ERB detections. The reported field sample result values were adjusted to be equal to the LOD, and the LOD was elevated to the concentration of the blank detections. The results are usable as qualified but should be considered as false positives and treated as non-detect.

A sample of the water used for decontamination of the drill rig was collected in advance of the field effort. The decontamination sample, EB-SPIGOT, displayed a detection for perfluorohexanesulfonic acid (PFHxS) greater than the detection limit. The associated field sample results that were within 5 times the blank concentration were previously qualified due to detections in ERBs FQC-EB-050219-BP, EB-042519-HA, and EB-042519-SS. Since the associated field sample results were already qualified due to FRB and ERB detections of PFHxS, no further data qualifying action was required. It should be noted that PFHxS is not a compound of interest in this investigation (i.e., PFOA, PFOS, or PFBS).

Overall, the data are usable for evaluating the presence or absence of PFAS at the facility. Sufficient usable data were obtained to meet the objectives of the SI.

4.6.4 Comparability

Comparability is the extent to which data from one study can be compared directly to either past data from the current project or data from another study. Using standardized sampling and analytical methods, units of reporting, and site selection procedures help ensure comparability. Standard field sampling and typical laboratory protocols were used during the SI and are considered comparable to ongoing investigations. It should be noted that the QSM Method changed from 5.1 to 5.3 between Mobilization 1 and 2; however, the data sets are still comparable.

4.6.5 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount of data expected under normal conditions. The laboratory provided data meeting system QC acceptance criteria for all samples tested. Project completeness was determined by evaluating the planned versus actual quantities of data. Percent completeness per parameter is as follows and reflects the exclusion of "X/UX" flagged data, although the project team has retained these results in the data set:

- PFAS in groundwater by LC/MS/MS compliant with QSM 5.1/5.3 Table B-15 at 98%;
- PFAS in soil by LC/MS/MS compliant with QSM 5.1/5.3 Table B-15 at 94%;
- PFAS in surface water by LC/MS/MS compliant with QSM 5.1/5.3 Table B-15 at 100%;
- PFAS in sediment by LC/MS/MS compliant with QSM 5.1/5.3 Table B-15 at 100%;
- pH in soil by USEPA Method 9045D at 100%; and
- Total organic carbon (TOC) by USEPA Method 9060 at 100%.

Certain soil samples were unable to be collected due to groundwater elevation being higher than anticipated at certain soil boring locations. This is described further in **Section 5.2**.

4.6.6 Sensitivity

Sensitivity is the capability of a test method or instrument to discriminate between measurement responses representing different levels (e.g., concentrations) of a variable of interest. Examples of QC measures for determining sensitivity include laboratory fortified blanks, a method detection limit (MDL) study, and calibration standards at the limit of quantitation (LOQ). In order to meet the needs of the data users, project data must meet the measurement performance criteria for sensitivity and project LOQs specified in the SI QAPP Addenda (AECOM, 2019b; AECOM, 2021). The laboratory provided the requested MDL studies and provided applicable calibration standards at the LOQ. In order to achieve the DQOs for sensitivity outlined in the SI QAPP Addenda (AECOM, 2019b; AECOM 2021), the laboratory reported all field sample results at the lowest possible dilution. Additionally, any analytes detected below the LOQ and above the DL were reported and qualified “J” as estimated values by the laboratory.

884

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5. Site Inspection Activities

This section describes the environmental investigation and sampling activities that occurred as part of the SI. The SI sampling approach was based on the findings of the PA and implemented in accordance with the following approved documents:

- *Final Preliminary Assessment Report, Camp Smith, Cortlandt, New York* dated June 2019 (AECOM, 2019a);
- *Final Site Inspection Programmatic Uniform Federal Policy-Quality Assurance Project Plan* dated March 2018 (AECOM, 2018a);
- *Final Site Inspection Uniform Federal Policy-Quality Assurance Project Plan Addendum, Camp Smith, Cortlandt, New York* dated October 2019 (AECOM, 2019b);
- *Final Supplemental Site Inspection Uniform Federal Policy-Quality Assurance Project Plan Addendum, Camp Smith, Corlandt, New York* dated May 2021 (AECOM, 2021).
- *Final Programmatic Accident Prevention Plan* dated July 2018 (AECOM, 2018b); and
- *Final Site Safety and Health Plan, Camp Smith, Cortlandt, New York* dated December 2019 (AECOM, 2019c).

The SI field activities were conducted in two mobilizations. The first mobilization was conducted from 9 to 12 December 2019 and consisted of utility clearance, direct push boring and soil sample collection, temporary monitoring well installation, grab groundwater sample collection, and surface water and sediment sample collection. The second mobilization was conducted from 19 to 28 July 2021 and consisted of utility clearance, soil boring and soil sample collection via sonic drilling technology, permanent monitoring well installation, monitoring well development, low-flow groundwater sample collection, and land surveying. Field activities were conducted in accordance with the SI QAPP Addenda (AECOM, 2019; AECOM, 2021), except as noted in **Section 5.9**.

The following samples were collected during the SI. These samples were analyzed for a subset of 18 PFAS by LC/MS/MS compliant with QSM 5.3 Table B-15 to fulfill the project DQOs (QSM 5.1 was used for Mobilization 1 samples):

Mobilization 1 –

- Fourteen (14) soil samples from six locations (soil borings or hand auger locations);
- Five grab groundwater samples from temporary well locations;
- Eight sediment samples;
- Five surface water samples, all of which were co-located with five of the sediment samples; and

Mobilization 2 –

- Fifteen (15) soil samples from eight locations (soil boring and hand auger locations); and
- Five low-flow groundwater samples from permanent monitoring well locations.

Figure 5-1 and **Figure 5-2** provide the sample locations for all media across the facility. **Table 5-1** presents the list of samples collected for each media. Field documentation is provided in **Appendix B**. A Log of Daily Notice of Field Activity was completed throughout the SI field activities and is provided in **Appendix B1**. Sampling forms are provided in **Appendix B2**, Field Change

Request Forms are provided in **Appendix B3**, and land survey data are provided in **Appendix B4**. Additionally, a photographic log of field activities is provided in **Appendix C**.

5.1 Pre-Investigation Activities

In preparation for the SI field activities, project team members participated in Technical Project Planning (TPP) meetings, performed utility clearance, and sampled decontamination source water. Details for each of these activities are presented below.

5.1.1 Technical Project Planning

The USACE TPP Process, Engineer Manual (EM) 200-1-2 (USACE, 2016) defines four phases to project planning: 1.) defining the project phase; 2.) determining data needs; 3.) developing data collection strategies; and 4.) finalizing the data collection plan. The process encourages stakeholder involvement in the SI, beginning with defining overall project objectives, including quantitative and qualitative DQOs, and formulating a sampling approach to address the AOIs identified in the PA.

A combined TPP Meeting 1 and 2 was held on 10 July 2019, prior to SI field activities. The combined TPP Meeting 1 and 2 was conducted in general accordance with EM 200-1-2. The stakeholders for this SI include the ARNG, NYARNG, USACE, NYSDEC, and NYS Department of Health familiar with the facility, the regulations, and the community. Stakeholders were provided the opportunity to make comments on the technical sampling approach and methods at the combined TPP Meeting 1 and 2. The outcome of the combined TPP Meeting 1 and 2 was memorialized in the SI QAPP Addendum (AECOM, 2019).

A combined TPP Meeting 3 and TPP 1 and 2 for Mobilization 1 and 2 was held on 1 January 2021 to discuss the results of Mobilization 1 and the approach for Mobilization 2. Meeting minutes for TPP 3 are included in **Appendix D** of this report. Future TPP meetings will provide an opportunity to discuss the results and findings, and future actions, where warranted.

5.1.2 Utility Clearance

AECOM's drilling subcontractor, Cascade Technical Services, LLC (Cascade), contacted the "Dig Safely New York, Inc." one-call utility clearance contractor to notify them of intrusive work at Camp Smith. However, because Camp Smith is a private facility, Dig Safely NY, Inc. contractors do not enter the facility. Therefore, AECOM contracted Admiral Conservation Services Underground Solutions (ACS), a private utility location service, to perform utility clearance at the facility. ACS performed utility clearance of the proposed boring locations on 9 December 2019 and 12 July 2021 with input from the AECOM field team and Camp Smith facility staff. General locating services and ground-penetrating radar (GPR) were used to complete the clearance. During the 12 July 2021 utility clearing, a concrete GPR was used to identify the location of rebar underlying proposed sampling locations at AOI 2. Additionally, the first 5 feet of each boring were pre-cleared using a hand auger to verify utility clearance in shallow subsurface where utilities would typically be encountered.

5.1.3 Source Water and PFAS Sampling Equipment Acceptability

The potable water source used for decontamination of drilling equipment was confirmed to be PFAS-free prior to the start of field activities. Because the potable water source at Camp Smith is known to contain PFAS, an offsite source of potable water was identified. During Mobilization 1, a sample from a potable water source at the office of AECOM's drilling subcontractor, Cascade Technical Services, LLC, was collected on 21 November 2019, and analyzed for PFAS by LC/MS/MS Compliant with QSM 5.1 Table B-15. The results of the potable well sample are

provided in **Appendix F**. A discussion of the results is presented in **Section 4.6.3**. During Mobilization 2, a sample from a potable water source at the office of Tam Enterprises was collected on 5 April 2021 and analyzed for PFAS by LC/MS/MS Compliant with QSM 5.3 Table B-15. The results of the potable well sample are provided in **Appendix F**, and a discussion of the results is presented in **Section 4.6.3**.

Materials that were used within the sampling zone were confirmed as acceptable for use in the PFAS sampling environment. The checklist of acceptable materials for use in the PFAS sampling environment was provided in the Standard Operating Procedures (SOPs) appendix to the QAPP Addendum (AECOM, 2019b). Prior to the start of field work each day, a PFAS Sampling Checklist was completed as an additional layer of control. The checklist served as a daily reminder to each field team member regarding the allowable materials within the sampling environment.

5.2 Soil Borings and Soil Sampling

Soil borings and sampling were performed during both Mobilization 1 and 2.

Mobilization 1

During Mobilization 1, soil samples were collected via direct push technology (DPT), in accordance with the SI QAPP Addendum (AECOM, 2019b). A GeoProbe® 7822DT dual-tube sampling system was used to collect continuous soil cores to the target depth. A hand auger was used to collect soil from the top 5 feet of the boring, in accordance with AECOM utility clearance procedures. The soil boring locations are shown on **Figure 5-1**, and depths are provided **Table 5-1**.

Three discrete soil samples were collected for chemical analysis from each soil boring, with the exception of locations AOI1-SB2, which had only one soil sample collected due to encountering shallow groundwater; and AOI1-SB3 and AOI3-SB1, which only had two soil samples collected due to encountering shallow groundwater. Refer to **Section 5.9** for additional details on deviations from the SI QAPP Addendum (AECOM, 2019b). At locations other than AOI1-SB2, AOI1-SB3, and AOI3-SB1, one surface soil sample (0 to 1 feet bgs) and two subsurface soil samples (one approximately 1 foot above the groundwater table and one at the mid-point between the surface and the groundwater table) were collected from each boring. At AOI1-SB2, groundwater was encountered at 0.5 feet bgs, and soil was sampled at one interval (0.5 to 1 feet bgs). At AOI1-SB3, groundwater was encountered at 2.0 feet bgs, and soil was sampled at two intervals (0.5 to 1 feet bgs; 1 to 2 feet bgs). At AOI3-SB1, groundwater was encountered at 2.5 feet bgs. Soil was sampled at two intervals (0.5 to 1 feet bgs; 1 to 2 feet bgs). Sediment samples were collected in nearby surface water locations downgradient of locations AOI1-SB2, AOI1-SB3, and AOI3-SB1 as replacement samples, since all proposed subsurface soil samples could not be obtained at these locations. Refer to **Section 5.4** for additional details regarding sediment sampling.

Each soil sample was collected into laboratory-supplied PFAS-free high-density polyethylene (HDPE) bottles and labeled using a PFAS-free marker or pen. Samples were packaged on ice and transported via Federal Express (FedEx) under standard chain of custody (CoC) procedures to the laboratory and analyzed for PFAS (LC/MS/MS compliant with QSM 5.1 Table B-15 (QSM 5.1 for Mobilization 1), TOC (USEPA Method 9060A), and pH (USEPA Method 9045D), in accordance with the SI QAPP Addenda (AECOM, 2019b; AECOM, 2021).

Field duplicate samples were collected at a rate of 10% and analyzed for the same parameters as the accompanying samples. MS/MSDs were collected at a rate of 5% and analyzed for the same parameters as the accompanying samples. In instances when non-dedicated sampling equipment was used, such as a hand auger for the shallow soil samples, ERBs were collected at a rate of 5% and analyzed for the same parameters as the soil samples. A temperature blank was

placed in each cooler to ensure that samples were preserved at or below 6 degrees Celsius (°C) during shipment

Mobilization 2

During Mobilization 2, soil samples were collected via sonic drilling technology, in accordance with the SI QAPP Addendum (AECOM, 2021). A sonic drill rig was used to collect continuous soil cores to the target depth. Surface soil samples were collected from CS-MW001S/D, CS-MW004S, and four hand auger locations at AOI 2 via hand auger and subsurface soil samples were collected at CS-MW001S/D, CS-MW002D, CS-MW003S, and CS-MW004S via sonic drilling technologies. Four additional subsurface soil samples were collected via hand auger at AOI 2. The soil boring locations are shown on **Figure 5-2**, and depths are provided **Table 5-1**

The soil cores were continuously logged for lithological descriptions by a field geologist using the Unified Soil Classification System (USCS). A photoionization detector (PID) was used to screen the breathing zone during boring activities as part of personal safety requirements. Observations and measurements were recorded on sampling forms (**Appendix B2**) and in a non-treated field logbook (i.e., composition notebook). Depth interval, recovery thickness, PID concentrations, moisture, relative density, color (using a Munsell soil color chart), and texture (using the USCS) were recorded. The boring logs are provided in **Appendix E**.

Soil borings completed during the two mobilizations found a heterogenous mix of gravel, sand, silt, and clay, which is consistent with glacial deposits found throughout New England. The predominant grain size fraction was sand, which ranged from fine to coarse and did not show any particular fining up/down trends consistent with a particular depositional environment. At CS-MW001S/D and CS-MW004S, borings were advanced to the top of bedrock. This bedrock interface was encountered at 20 feet bgs at CS-MW001S/D and 54 feet bgs at CS-MW004S, and it was consistent with gneiss found in the surrounding area.

Each soil sample was collected into laboratory-supplied PFAS-free high-density polyethylene (HDPE) bottles and labeled using a PFAS-free marker or pen. Samples were packaged on ice and transported via FedEx under standard chain of custody (CoC) procedures to the laboratory and analyzed for PFAS (LC/MS/MS compliant with QSM 5.3 Table B-15 (QSM 5.1 for Mobilization 1), TOC (USEPA Method 9060A), and pH (USEPA Method 9045D), in accordance with the SI QAPP Addenda (AECOM, 2019b; AECOM, 2021). Additionally, one grain size sample (American Society for Testing and Materials [ASTM] D422) was collected from boring CS-MW002S from a clay lens at least three feet in thickness, as outlined in the SI QAPP Addendum (AECOM, 2021). Field duplicates, MS/MSDs, and other QC samples were collected at the same frequency as during Mobilization 1.

DPT borings were converted to temporary wells during Mobilization 1, which were subsequently abandoned in accordance with the SI QAPP Addendum (AECOM, 2019b) using bentonite chips at completion of sampling activities. Sonic borings were converted into permanent wells during Mobilization 2. Borings were installed in grass areas to avoid disturbing concrete or asphalt surfaces.

5.3 Monitoring Well Installation and Groundwater Sampling

Monitoring wells were constructed and groundwater samples were collected during both Mobilization 1 and 2.

Mobilization 1

During Mobilization 1, temporary wells were installed using a GeoProbe® 7822DT dual-tube sampling system. Once the borehole was advanced to the desired depth, when conditions

allowed, a temporary well was constructed of a 10-foot section of 1-inch Schedule 40 poly-vinyl chloride (PVC) screen with sufficient casing to reach ground surface. New PVC pipe and screen were used to avoid cross contamination between locations. The screen intervals for the temporary wells are provided in **Table 5-2**. Due to lack of groundwater observation at refusal at AOI2-SB1, two step-off locations were attempted. Each step-off location was shallower than the original, and no groundwater was detected. The temporary well was placed in the deepest-advanced boring for AOI2-SB1.

The temporary wells were allowed to recharge after installation before collection of grab groundwater samples. After the recharge period, groundwater samples were collected using a peristaltic pump with PFAS-free HDPE tubing. Each sample was collected into laboratory-supplied PFAS-free HDPE bottles and labeled using a PFAS-free marker or pen. The temporary wells were purged at a rate determined in the field to reduce turbidity and draw down prior to sampling. Water quality parameters (e.g., temperature, specific conductance, pH, dissolved oxygen [DO], and oxidation-reduction potential [ORP]) were measured using a water quality meter and recorded on the field sampling form (**Appendix B2**) after each grab sample was collected. Additionally, a subsample of each groundwater sample was collected in a separate container, and a shaker test was completed to identify if there were any foaming. No foaming was noted in any of the groundwater samples.

Each sample was collected into laboratory-supplied PFAS-free HDPE bottles and labeled using a PFAS-free marker or pen. Samples were packaged on ice and transported via FedEx under standard CoC procedures to the laboratory and analyzed for PFAS by LC/MS/MS compliant with QSM 5.1 Table B-15 in accordance with the SI QAPP Addendum (AECOM, 2021).

Field duplicate samples were collected at a rate of 10% and analyzed for the same parameters as the accompanying samples. MS/MSDs were collected at a rate of 5% and analyzed for the same parameters as the accompanying samples. One FRB was collected in accordance with the PQAPP (AECOM, 2018a). A temperature blank was placed in each cooler to ensure that samples were preserved at or below 6°C during shipment.

Temporary wells were abandoned in accordance with the SI QAPP Addendum (AECOM, 2019b) by removing the PVC and backfilling the hole with bentonite chips. Temporary wells were installed in grass areas to avoid disturbing concrete or asphalt.

Mobilization 2

During Mobilization 2, permanent wells were installed using sonic drilling technologies. The monitoring wells were constructed with 2-inch Schedule 40 PVC flush threaded 10-foot sections of riser, 0.010-inch slotted well screen, 10-foot screens (except for CS-MW002D, which was installed with a 20-foot screen), and a threaded bottom cap. A filter pack of #0 silica sand was installed in the annulus around the well screen to a minimum of 2-foot above the well screen. A 2-foot thick bentonite seal was placed above the filter sand and hydrated with distilled water. Bentonite chips were placed in the well annulus from the top of the bentonite seal to ground surface. The bentonite was allowed to set for 24 hours prior to well completion in accordance with the SI QAPP Addendum (AECOM, 2021). All monitoring wells were completed with flush mount well vaults, with the exception of CS-MW001S/D and CS-MW004S, which have a stick-up completion. The screen interval of each of the groundwater monitoring wells is provided in **Table 5-2**.

Development and sampling of wells was completed in accordance with the SI QAPP Addendum (AECOM, 2021). The newly installed monitoring wells were developed no sooner than 24 hours following installation by pumping and surging using a variable speed submersible pump. Samples were collected no sooner than 24 hours following development via low-flow sampling methods using a QED Sample Pro® bladder pump with disposable PFAS-free, HDPE tubing. New tubing

was used at each well and the pumps were decontaminated between each well. The wells were purged at a rate determined in the field to reduce draw down prior to sampling. Water quality parameters (e.g., temperature, specific conductance, pH, DO, ORP, and turbidity) were measured using a water quality meter and recorded on the field sampling form (**Appendix B2**). Water levels were measured to the nearest 0.01 inch and recorded. Additionally, a subsample of each groundwater sample was collected in a separate container and a shaker test was completed to identify if there was any foaming. No foaming was noted in any of the groundwater samples.

Each sample was collected into laboratory-supplied PFAS-free HDPE bottles and labeled using a PFAS-free marker or pen. Samples were packaged on ice and transported via FedEx under standard CoC procedures to the laboratory and analyzed for PFAS by LC/MS/MS compliant with QSM 5.3 Table B-15 in accordance with the SI QAPP Addendum (AECOM, 2021). Field duplicates, MS/MSDs, and other QC samples were collected at the same frequency as during Mobilization 1.

5.4 Surface Water and Sediment Sampling

Co-located surface water and sediment samples were collected from tributaries flowing to and from Dickiebusch Lake and along Putnam Brook, at multiple locations downgradient of AOIs 1, 2, and 3. Additionally, three stand-alone sediment samples (CS-SD06, CS-SD07, and CS-SD08) were collected as replacement samples downgradient of soil boring locations where subsurface soil samples could not be obtained.

Surface water samples were collected from a single point in the waterbody by dipping the laboratory-supplied bottle into the water, approximately two-thirds up from the bottom of the water body. For the co-located surface water and sediment samples, the surface water sample was collected before the co-located sediment sample. Sampling was performed deliberately and methodically to minimize disturbance of bottom sediments and as quickly as possible to ensure a representative sample was collected. Additionally, a subsample of each surface water sample was collected in a separate container, and a shaker test was completed to identify if there were any foaming. No foaming was noted on any of the surface water samples.

After collection of the surface water sample, a sediment coring device (hand auger) was used to collect the sediment sample from the first 1 foot of sediment. The sediment was transferred to a Ziploc bag, where the sample was homogenized, and stones in excess of 1 centimeter were removed prior to collection in a laboratory-supplied, PFAS-free HDPE bottle. After collection of the surface water and sediment samples from each location, general water quality parameters (i.e., temperature, pH, conductivity, DO, ORP, and turbidity) were collected with a water quality meter and recorded on the field sampling form (**Appendix B2**). The surface water and sediment sample locations are shown on **Figure 5-1**, and sample depths are provided **Table 5-1**.

Each surface water and sediment sample was collected into laboratory-supplied PFAS-free HDPE bottles and labeled using a PFAS-free marker or pen. Samples were packaged on ice and transported via FedEx under standard CoC procedures to the laboratory for analysis of PFAS by LC/MS/MS compliant with QSM 5.1 Table B-15. Sediment samples were also analyzed for TOC (USEPA Method 9060A) and pH (USEPA Method 9045D), in accordance with the SI QAPP Addendum (AECOM, 2019b).

Field duplicate samples were collected at a rate of 10 % and analyzed for the same parameters as the accompanying samples. MS/MSDs were collected at a rate of 5% and analyzed for the same parameters as the accompanying samples. In instances when non-dedicated sampling equipment was used, ERB samples were collected at a rate of 5% and analyzed for the same parameters as the soil samples. A temperature blank was placed in each cooler to ensure that samples were preserved at or below 6°C during shipment.

5.5 Synoptic Water Level Measurements

No synoptic gauging was performed during Mobilization 1; however, depth to water measurements recorded during sampling were used to create the contours provided in **Figure 2-5**. A synoptic groundwater gauging event was performed during Mobilization 2 on 2 August 2021. Depth to water measurements were collected from the five new permanent monitoring wells. Water level measurements were taken from the northern side of the well casing. A groundwater flow contour map is provided in **Figure 2-6**. Groundwater elevation data for Mobilization 1 and 2 are provided in **Table 5-2**.

5.6 Surveying

The northern side of each well casing was surveyed by New York-licensed land surveyors that followed guidelines provided in the SOPs included in the SI QAPP Addenda (AECOM, 2019b; AECOM, 2021). Survey data from the temporary/permanent wells on the facility were collected on 12 December 2019 and 2 August 2021, respectively, in the applicable Universal Transverse Mercator zone projection, with World Geodetic System 84 datum (horizontal) and North American Vertical Datum 1988 (vertical). The surveyed well data are provided in **Appendix B4**.

5.7 Investigation-Derived Waste

As of the date of this report, the disposal of PFAS investigation-derived waste (IDW) is not regulated federally. PFAS IDW generated during the SI is considered non-hazardous waste and was managed in accordance with the SI QAPP Addendum (AECOM, 2019b) and with the DA Guidance for Addressing Releases of PFAS, Q18 (DA, 2018).

Soil IDW (i.e., soil cuttings) and liquid IDW (i.e., purge water, development water, and decontamination fluids) generated during Mobilization 1 activities were containerized in properly labeled 55-gallon drums. The soil and liquid IDW were not sampled and assume the PFAS characteristics of the associated samples collected from that source location. At the end of the field event, the 55-gallon drums were staged at a location on NYARNG property specified by the Camp Smith Environmental Manager. ARNG will coordinate waste profiling, transportation, and disposal of the IDW.

During Mobilization 2, soil IDW (i.e.: soil cuttings) were left in place at the point of the source. The soil cuttings were distributed on the ground surface on the downgradient side of the boring. The soil IDW was not sampled and assumes the PFAS characteristics of the associated soil samples collected from that source location. Solids generated during drilling suspended in the drilling fluid and liquid IDW (i.e., purge water, development water, and decontamination fluids) were containerized in a 55-gallon drum and staged at a location on NYARNG property specified by the Camp Smith Environmental Manager. One solid IDW sample was collected from the solid material containerized to assist in the waste profiling, transportation, and disposal of that IDW. The results of the IDW sample are provided in **Appendix F**. The location where soil IDW was returned to the ground surface is provided in **Appendix B5**.

Other solids such as spent personal protective equipment, plastic sheeting, tubing, rope, unused monitoring well construction materials, and other environmental media generated during the field activities were disposed of at a licensed solid waste landfill.

5.8 Laboratory Analytical Methods

Samples were analyzed for a subset of 18 PFAS by LC/MS/MS compliant with QSM 5.3 (QSM 5.1 for Mobilization 1 data set) Table B-15 at Pace Analytical Gulf Coast in Baton Rouge,

Louisiana, a DoD ELAP- and NELAP-certified laboratory. The 18 PFAS analyzed as part of the ARNG SI program include the following:

- 6:2 fluorotelomer sulfonic acid (6:2 FTS)
- 8:2 fluorotelomer sulfonic acid (8:2 FTS)
- N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)
- N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)
- Perfluorobutyrate (PFBA)
- Perfluorobutanesulfonic acid (PFBS)
- Perfluorodecanoic acid (PFDA)
- Perfluorododecanoic acid (PFDoA)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorohexanoic acid (PFHxA)
- Perfluorohexanesulfonic acid (PFHxS)
- Perfluorononanoic acid (PFNA)
- Perfluorooctanoic acid (PFOA)
- Perfluorooctanesulfonic acid (PFOS)
- Perfluoropentanoic acid (PFPeA)
- Perfluorotetradecanoic acid (PFTeDA)
- Perfluorotridecanoic acid (PFTrDA)
- Perfluoroundecanoic acid (PFUdA)

Soil samples were also analyzed for TOC using USEPA Method 9060A and pH by USEPA Method 9045D.

5.9 Deviations from SI QAPP Addenda

Deviations from the SI QAPP Addendums during Mobilization 1 and 2 were identified after review of the field documentation. The deviations are noted below and are documented in the Field Change Request Forms (**Appendix B3**):

- During Mobilization 1, depth to water in soil boring AOI 1-SB2 was encountered at 0.5 feet bgs. As a result, soil was sampled in one interval (0.5 to 1 feet bgs) instead of three intervals, as proposed in the SI QAPP Addendum (AECOM, 2019b); therefore, an additional sediment sample was taken at a nearby surface water location, downgradient of AOI 1.

- During Mobilization 1, depth to water in soil boring AOI 1-SB3 was encountered at 2.0 feet bgs. As a result, soil was sampled in two intervals (0.5 to 1 and 1 to 2 feet bgs) instead of three intervals, as proposed in the SI QAPP Addendum (AECOM, 2019b); therefore, an additional sediment sample was taken at a nearby surface water location, downgradient of AOI 1.

- During Mobilization 1, depth to water in soil boring AOI 3-SB1 was encountered at 2.5 feet bgs. As a result, soil was sampled in two intervals (0.5 to 1 and 1 to 2 feet bgs) instead of three intervals, as proposed in the SI QAPP Addendum (AECOM, 2019b); therefore, an additional sediment sample was taken at a nearby surface water location, downgradient of AOI 3.

- During Mobilization 1, the temporary monitoring well installed at AOI 2-SB1 was dry at refusal depth (26.5 feet bgs). Two additional step-outs were attempted in order to reach groundwater. Each attempt resulted in shallower refusal depth than the originally attempted boring location. A temporary monitoring well was placed at the deepest refusal depth and was allowed to recharge for 48 hours after installation. However, after the recharge period, the temporary well was dry; therefore, a groundwater sample could not be collected. Based on the CSM, there is shallow underlying bedrock at this location, thus shallow groundwater likely does not occur here. No additional monitoring well was

installed associated with this AOI, due to underlying shallow geology and hydrology at this location.

- During Mobilization 2, new information regarding the CSM and thickness of the overburden was obtained during installation of CS-MW002D and CS-MW003D. To capture the approximate pathway between potential releases at AOI 2 and the screen intervals at Potable Wells A and B, the screen interval for CS-MW002D was set from 90-110 feet bgs (within overburden). A 20-foot screen interval was used, rather than a 10-foot screen interval, to increase the likelihood of capturing the potential migration pathway. This approach differed from the proposed plan of installing a bedrock well as documented in the SI QAPP Addendum (AECOM, 2021). Additionally, given the apparent thickness of the overburden aquifer in the vicinity, CS-MW003D was changed to CS-MW003S to target the top of the shallow groundwater table.

Table 5-1
Samples by Medium
Site Inspection Report, Camp Smith

Sample Identification	Sample Collection Date/Time	Sample Depth (feet bgs)	PFAS by LC/MS/MS compliant with QSM 5.3 Table B-15	TOC (USEPA Method 9060A)	pH (USEPA Method 9045D)	Grain Size (ASTM D-422)	Comments
Soil Samples							
AOI 1-SB1-0.5-1	12/11/2019 0950	0.5 - 1	x	x	x		
AOI 1-SB1-12-14	12/11/2019 1100	12 - 14	x	x	x		
AOI 1-SB1-6-8	12/11/2019 1055	6 - 8	x	x	x		
AOI 1-SB2-0.5-1	12/11/2019 1115	0.5 - 1	x	x	x		
AOI 1-SB3-0.5-1	12/11/2019 0845	0.5 - 1	x	x	x		
AOI 1-SB3-1-2	12/11/2019 0915	1 - 2	x	x	x		
AOI 2-SB1-0.5-1	12/10/2019 1040	0.5 - 1	x				
AOI 2-SB1-11-13	12/10/2019 1215	11 - 13	x				
AOI 2-SB1-21-23	12/10/2019 1210	21 - 23	x				
AOI 2-SB1-21-23MS	12/10/2019 1210	21 - 23	x				MS
AOI 2-SB1-21-23MSD	12/10/2019 1210	21 - 23	x				MSD
AOI 3-SB1-0.5-1	12/10/2019 1410	0.5 - 1	x				
AOI 3-SB1-1-2	12/10/2019 1430	1 - 2	x				
AOI 3-SB1-1-2-FD	12/10/2019 1430	1 - 2	x				Field Duplicate
AOI 3-SB2-0.5-1	12/10/2019 0850	0.5 - 1	x				
AOI 3-SB2-15-17	12/10/2019 1015	15 - 17	x				
AOI 3-SB2-7-9	12/10/2019 1010	7 - 9	x				
AOI2-SB2-00-02	7/24/2021 1000	0 - 2	x				
AOI2-SB2-02-04	7/24/2021 1010	2 - 4	x				
AOI2-SB3-00-02	7/24/2021 1040	0 - 2	x				
AOI2-SB3-02-04	7/24/2021 1050	2 - 4	x				
AOI2-SB4-00-02	7/24/2021 1100	0 - 2	x	x	x		
AOI2-SB4-00-02-MS	7/24/2021 1100	0 - 2	x	x	x		MS
AOI2-SB4-00-02-MSD	7/24/2021 1100	0 - 2	x	x	x		MSD
AOI2-SB4-02-04	7/24/2021 1110	2 - 4	x				
AOI2-SB5-00-02	7/24/2021 1125	0 - 2	x				
AOI2-SB5-02-04	7/24/2021 1130	2 - 4	x				
AOI2-SB5-02-04-MS	7/24/2021 1130	2 - 4	x				MS
AOI2-SB5-02-04-MSD	7/24/2021 1130	2 - 4	x				MSD
CS-MW001D-SB-08-10	7/20/2021 1415	8 - 10	x				
CS-MW001S-SB-00-02	7/20/2021 1315	0 - 2	x	x	x		
CS-MW001S-SB-00-02-D	7/20/2021 1315	0 - 2	x	x	x		Field Duplicate
CS-MW002D-SB-39-41	7/23/2021 1050	39 - 41	x				
CS-MW002D-SB-62-63	7/23/2021 1130	62 - 63				x	
CS-MW003S-40-42	7/25/2021 0955	40 - 42	x	x	x		
CS-MW003S-40-42-D	7/25/2021 0955	40 - 42	x	x	x		Field Duplicate
CS-MW004S-SB-00-02	7/19/2021 1100	0 - 2	x				
CS-MW004S-SB-07-09	7/19/2021 1115	7 - 9	x				
CS-ST-04S-072621	7/26/2021 1200	---	x				Solid IDW sample
Groundwater Samples							
AOI 1-GW1	12/11/2019 1130	15 - 20	x				
AOI 1-GW2	12/11/2019 1225	0 - 5	x				
AOI 1-GW2MS	12/11/2019 1225	0 - 5	x				MS
AOI 1-GW2MSD	12/11/2019 1225	0 - 5	x				MSD
AOI 1-GW3	12/11/2019 0920	0 - 5	x				

Table 5-1
Samples by Medium
Site Inspection Report, Camp Smith

Sample Identification	Sample Collection Date/Time	Sample Depth (feet bgs)	PFAS by LC/MS/MS compliant with QSM 5.3 Table B-15	TOC (USEPA Method 9060A)	pH (USEPA Method 9045D)	Grain Size (ASTM D-422)	Comments
AOI 3-GW1	12/10/2019 1455	0 - 5	x				
AOI 3-GW1-FD	12/10/2019 1455	0 - 5	x				Field Duplicate
AOI 3-GW2	12/10/2019 1045	0 - 5	x				
CS-MW001D-GW	7/24/2021 1320	20 - 30	x				
CS-MW001S-GW	7/24/2021 1045	7 - 17	x				
CS-MW001S-GW-D	7/24/2021 1045	7 - 17	x				Field Duplicate
CS-MW002D-GW	7/28/2021 0930	90 - 110	x				
CS-MW003S-GW	7/27/2021 1145	40 - 50	x				
CS-MW004S-GW	7/22/2021 1350	7 - 17	x				
CS-MW004S-GW-MS	7/22/2021 1350	7 - 17	x				MS
CS-MW004S-GW-MSD	7/22/2021 1350	7 - 17	x				MSD
Surface Water Samples							
CS-SW01	12/12/2019 0830	---	x				
CS-SW02	12/12/2019 0940	---	x				
CS-SW03	12/12/2019 1040	---	x				
CS-SW04	12/12/2019 1120	---	x				
CS-SW05	12/11/2019 1525	---	x				
Sediment Samples							
CS-SD01-0-1	12/12/2019 0835	0 - 1	x				
CS-SD02-0-1	12/12/2019 0945	0 - 1	x				
CS-SD03-0-1	12/12/2019 1050	0 - 1	x				
CS-SD04-0-1	12/12/2019 1130	0 - 1	x				
CS-SD05-0-1	12/11/2019 1540	0 - 1	x				
CS-SD06-0-1	12/12/2019 1215	0 - 1	x				
CS-SD07-0-1	12/12/2019 1235	0 - 1	x				
CS-SD08-0-1	12/12/2019 1320	0 - 1	x				
Quality Control Samples							
ERB-121119HA	12/11/2019 1235	---	x				ERB
ERB-121119WL	12/11/2019 1240	---	x				ERB
ERB-121219SS	12/12/2019 1400	---	x				ERB
FRB-121119	12/11/2019 1245	---	x				FRB
ERB-121019CS	12/10/2019 0845	---	x				ERB
CASCADE-DECONWATER 11/21	11/21/2019 1145	---	x				Decon Water
CS-Decon Water	7/10/2019 1449	---	x				Decon Water
CS-ERB-01	7/22/2021 1520	---	x				ERB
CS-ERB-02	7/24/2021 1145	---	x				ERB
CS-ERB-03	7/24/2021 0815	---	x				ERB
CS-FRB-01	7/25/2021 0845	---	x				FRB
CS-DECON-072521	7/25/2021 0915	---	x				Decon Water - drillers hose/tank

Notes:
FD/D = Field Duplicate
ERB = equipmrnet rinsate blank
FRB = field reagent blank
MS/MSD = matrix spike/ matrix spike duplicate
PFAS = per- and polyfluoroalkyl substances
TOC = total organic carbon
USEPA = United States Environmental Protection Agency

Table 5-2
Soil Borings Depths, Monitoring Well Screen Intervals, and Groundwater Elevations
Site Inspection Report, Camp Smith

Area of Interest	Boring Location	Soil Boring Depth (feet bgs)	Well Screen Interval (feet bgs)	Top of Casing Elevation (feet amsl)	Ground Surface Elevation (feet NAVD88)	Depth to Water (feet btoc)	Depth of Water (feet bgs)	Groundwater Elevation (feet amsl)
AOI 1	AOI1-SB1	20	15 - 20*	93.746	---	8.48	---	85.266
	AOI1-SB2	5	0 - 5*	83.038	---	0.50	---	82.538
	AOI1-SB3	5	0 - 5*	91.166	---	4.57	---	86.596
	CS-MW001S	18	7 - 17	96.36	93.37	10.46	7.47	85.90
	CS-MW001D	30	20 - 30	96.36	93.37	10.55	7.56	85.81
AOI 2	AOI2-SB1	26.5	NA	NA	---	NA	NA	NA
	AOI2-SB2	4	NA	NA	101.55	NA	NA	NA
	AOI2-SB3	4	NA	NA	101.63	NA	NA	NA
	AOI2-SB4	4	NA	NA	101.63	NA	NA	NA
	AOI2-SB5	4	NA	NA	101.91	NA	NA	NA
AOI 3	AOI3-SB1	5	0 - 5*	77.485	---	1.74	---	75.745
	AOI3-SB2	25	18 - 23*	98.103	---	22.2	---	75.903
	CS-MW004S	55	07 - 17	76.93	73.97	7.19	4.23	69.74
AOI 2 and 3	CS-MW002D	140	90 - 110	105.15	105.15	79.76	79.76	25.39
	CS-MW003S	50	40 - 50	102.31	102.31	38.21	38.21	64.10

Notes:

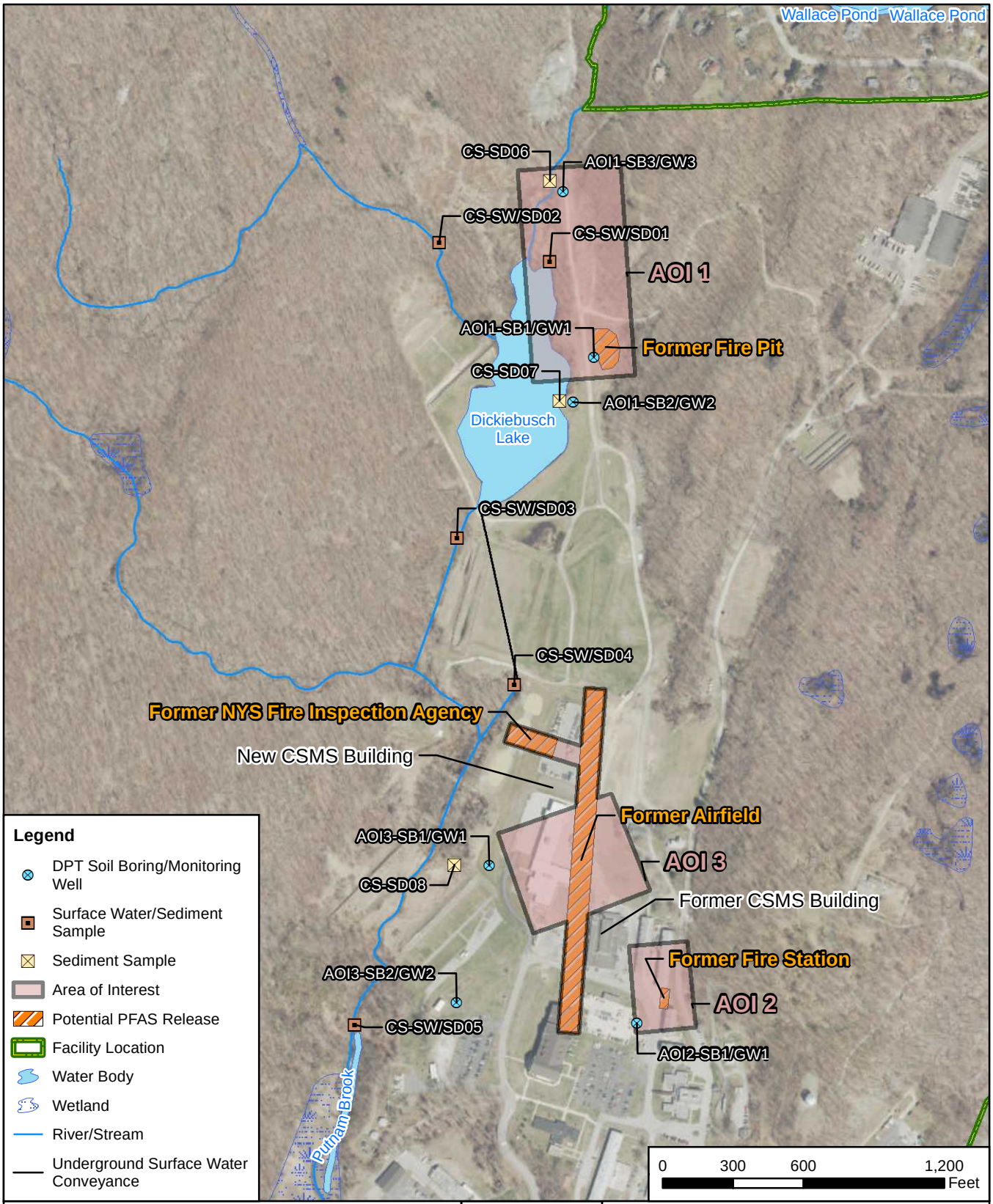
amsl = above mean sea level

bgs = below ground surface

btoc = below top of casing

NA = not applicable

* = Mobilization 1 temporary well



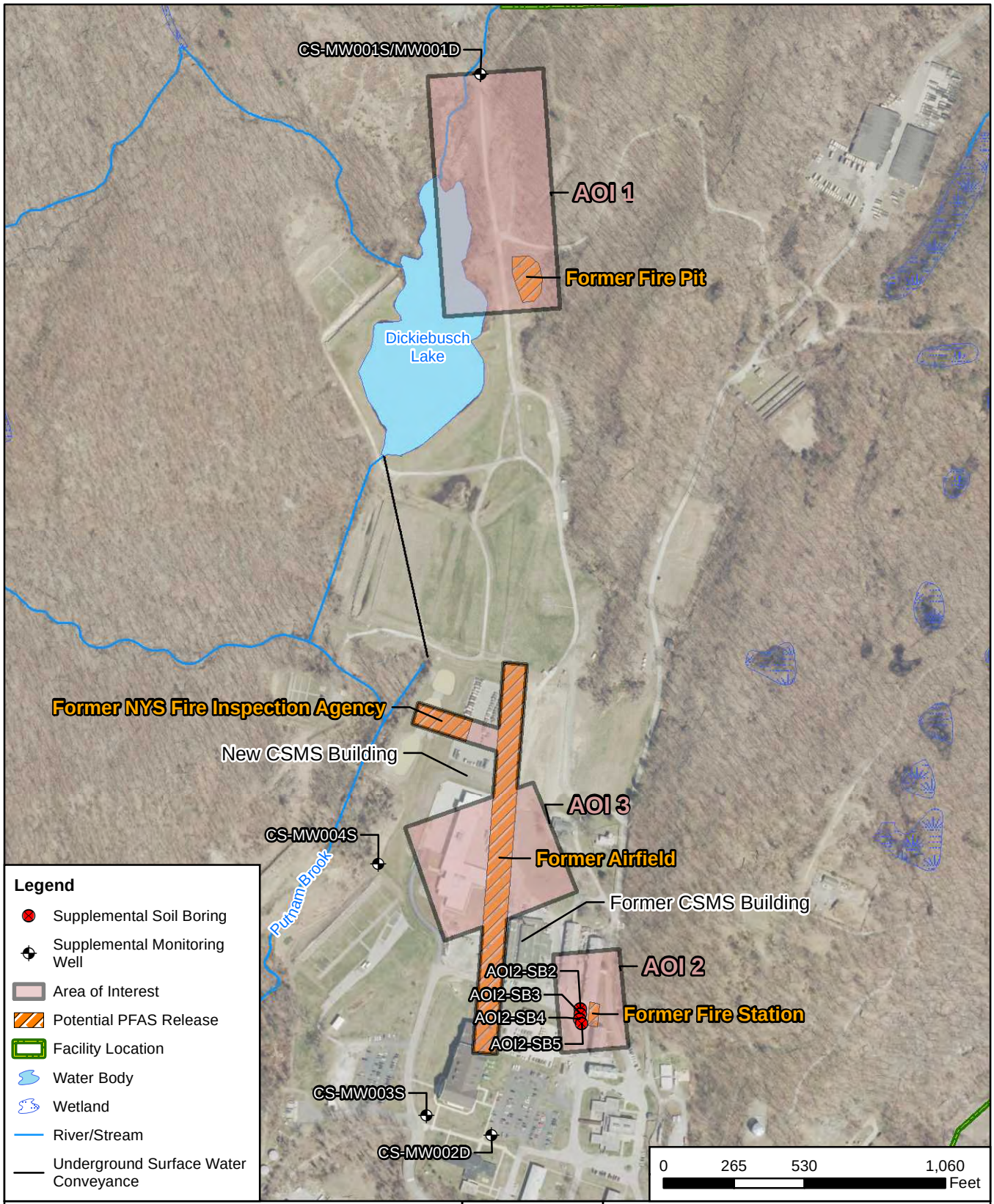
CLIENT	ARNG			
NOTES	Site Inspection for PFAS at Camp Smith, NY			
REVISED	12/8/2021	GIS BY	MS	12/8/2021
SCALE	1:7,200	CHK BY	AB	12/8/2021
Base Map: NYS Digital Ortho-imagery Program (NYSDOP), 2016		PM	CM	12/8/2021

Site Inspection Sample Locations, Mobilization 1

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 5-1

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CLIENT	ARNG			
NOTES	Site Inspection for PFAS at Camp Smith, NY			
REVISED	12/8/2021	GIS BY	MS	12/8/2021
SCALE	1:6,360	CHK BY	AB	12/8/2021
Base Map: NYS Digital Ortho-imagery Program (NYSDOP), 2016		PM	CM	12/8/2021

Site Inspection Sample Locations, Mobilization 2

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 5-2

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6. Site Inspection Results

This section presents the analytical results of the SI. The SLs used in this evaluation are presented in **Section 6.1**. A discussion of the results for each AOI is provided in **Section 6.3** through **Section 6.6**. **Table 6-2** through **Table 6-7** present PFAS results for samples with detections in soil, sediment, surface water, or groundwater; only constituents detected in one or more samples are included. Tables that contain all results are provided in **Appendix F**, and the laboratory reports are provided in **Appendix G**.

6.1 Screening Levels

The DoD has adopted a policy to retain facilities in the CERCLA process based on risk-based SLs for soil and groundwater, as described in a memorandum from the OSD dated 15 September 2021 (Assistant Secretary of Defense, 2021). The ARNG program under which this SI was performed follows this DoD policy. Should the maximum site concentration for sampled media exceed the SLs established in the OSD memorandum, the AOI will proceed to the next phase under CERCLA. The SLs established in the OSD memorandum apply to three compounds: PFOS, PFOA, and PFBS.

Additionally, the USEPA issued drinking water lifetime HAs for PFOA and PFOS in May 2016 (USEPA 2016a; USEPA, 2016b). The USEPA HAs may also be used as SLs for groundwater samples collected at the facility boundary where off-facility drinking water wells are present downgradient. The SLs are presented on **Table 6-1** below. All other results presented in this report are considered informational in nature and serve as an indication as to whether soil and groundwater contain or do not contain PFAS within the boundaries of the facility.

Table 6-1: Screening Levels (Soil and Groundwater)

Analyte	Residential (Soil) (µg/kg)[a,b] 0-2 feet bgs	Industrial/ Commercial Composite Worker (Soil) (µg/kg)[a,b] 2-15 feet bgs	Tap Water (Groundwater) (ng/L)[a,b]	USEPA HA (Groundwater representative of Drinking Water) (ng/L)[c,d]
PFOA	130	1,600	40	70
PFOS	130	1,600	40	70
PFBS	1,900	25,000	600	-

Notes:

a.) Assistant Secretary of Defense, 2021. Risk Based Screening Levels Calculated for PFOS, PFOA, PFBS in Groundwater and Soil using United States Environmental Protection Agency's (USEPA's) Regional Screening Level Calculator. Hazard Quotient (HQ) = 0.1. 15 September 2021.

b.) USEPA. 2016a. Drinking Water HA for PFOA. Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. USEPA Document Number: 822-R-16-005. May 2016. / USEPA. 2016b. Drinking Water HA for PFOS. Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. USEPA Document Number: 822-R-16-004. May 2016.

c.) USEPA HAs apply to the PFOA and PFOS concentrations individually or combined.

The data in the subsequent sections are compared against the SLs presented in **Table 6-1**. The SLs for groundwater are based on direct ingestion. The SLs for soil are based on incidental ingestion and are applied to the depth intervals reasonably anticipated to be encountered by the receptors identified at the site: the residential scenario is applied to surface soil results (0 to 2 feet bgs) and the industrial/commercial worker scenario is applied to shallow subsurface soil results (2 to 15 feet bgs). The SLs are not applied to deep subsurface soil results (>15 feet bgs) because 15 feet is the anticipated limit of construction activities.

6.2 Soil Physicochemical Analyses

To provide basic soil parameter information, soil samples were analyzed for TOC and pH, which are important for evaluating transport through the soil medium. Additionally, one grain size sample (ASTM D422) was collected from boring CS-MW002S from a clay lens at least three feet in thickness as outlined in the SI QAPP Addendum (AECOM, 2021). **Appendix F** contains the results of the TOC, pH sampling, and grain size.

The data collected in this investigation will be used in subsequent investigations, where appropriate, to assess fate and transport of PFAS contaminants. According to the Interstate Technology Regulatory Council (ITRC), several important PFAS partitioning mechanisms include hydrophobic and lipophobic effects, electrostatic interactions, and interfacial behaviors. At relevant environmental pH values, certain PFAS are present as organic anions and are therefore relatively mobile in groundwater (Xiao et al., 2015) but tend to associate with the organic carbon fraction that may be present in soil or sediment (Higgins and Luthy 2006; Guelfo and Higgins, 2013). When sufficient organic carbon is present, organic carbon normalized distribution coefficients (K_{oc} values) can help in evaluating transport potential, though other geochemical factors (for example, pH and presence of polyvalent cations) may also affect PFAS sorption to solid phases (ITRC, 2018).

6.3 AOI 1

This section presents the analytical results for soil and groundwater in comparison to SLs for AOI 1, which includes one potential PFAS release area: the Former Fire Pit. The detected compounds in soil and groundwater are summarized on **Table 6-2** through **Table 6-5**. The detections of PFOA, PFOS, and PFBS in soil and groundwater are presented on **Figure 6-1** through **Figure 6-8**.

6.3.1 AOI 1 Soil Analytical Results

PFOA, PFOS, and PFBS did not exceed the SLs in soil at the one potential PFAS release areas: Former Fire Pit. **Figure 6-1** though **Figure 6-6** present the ranges of detections of PFOA, PFOS, and PFBS in soil. **Table 6-2** through **Table 6-4** summarize the detected compounds in soil.

At the Former Fire Pit, soil was sampled from surface soil (0.5 to 2 feet bgs) and shallow subsurface soil (6 to 14 feet bgs) from boring locations AOI 1-SB1, AOI 1-SB2, AOI 1-SB3, and CS-MW001S/D during Mobilizations 1 and 2. PFOA, PFOS, and PFBS were detected in soil at concentrations several orders of magnitude lower than the SLs. In the surface soil, PFOA was detected two of the four locations, with concentrations ranging from 0.627 J micrograms per kilogram (µg/kg) (CS-MW001S-SB-00-02-D) to 0.919 J µg/kg (AOI 1-SB3-1-2). PFOS was detected in all four locations, with concentrations ranging from 0.260 J µg/kg (AOI 1-SB1-0.5-1) to 0.396 J µg/kg (CS-MW001S-SB-00-02). PFBS was detected in one of the four locations, with a detected concentration of 0.034 J µg/kg (CS-MW001S-SB-00-02).

In the shallow subsurface, PFOA was detected in one of the three locations, with a detected concentration of 0.129 J µg/kg (CS-MW001S-SB-08-10). PFOS was detected in one of the three locations, with a detected concentration of 0.117 J µg/kg (CS-MW001S-SB-08-10). PFBS was detected in one of the three locations, with a detected concentration of 0.025 J µg/kg (CS-MW001S-SB-08-10).

6.3.2 AOI 1 Groundwater Analytical Results

PFOA in groundwater exceeded its SL at one location within the AOI: Former Fire Pit. Additionally, the combined PFOA and PFOS in groundwater exceeded the USEPA HAs. However, individually, PFOS and PFBS did not exceed the SL at AOI 1. **Figure 6-7** and **Figure 6-8** present the ranges

of detections of PFOA, PFOS, and PFBS in groundwater. **Table 6-5** summarizes the detected compounds in groundwater.

Within the Former Fire Pit potential PFAS release area, groundwater was sampled from three temporary monitoring well locations, AOI 1-GW1 through AOI 1-GW3, and two permanent wells, CS-MW001S and CS-MW001D. The SL of 40 ng/L for PFOA and 70 ng/L for the combined PFOA and PFOS were exceeded at AOI 1-GW3, with a maximum concentration of 58.4 ng/L PFOA and 70.9 ng/L for the combined PFOA and PFOS. PFOA was additionally detected in all four of the other monitoring wells, with concentrations ranging from 14.3 ng/L (CS-MW001S) to 29 ng/L (AOI 1-GW1). PFOS was detected in four of the five monitoring wells sampled, with concentrations ranging from 10.8 ng/L (CS-MW001D) to 37.8 ng/L (AOI 1-GW1). PFBS was detected in two of the five monitoring wells sampled, with concentrations ranging from 2.87 J ng/L (AOI 1-GW1) to 3.39 J ng/L (AOI 1-GW3).

6.3.3 AOI 1 Conclusions

Based on the results of the SI, PFOA, PFOS, and PFBS were detected in soil at AOI 1; however, the detected concentrations were several orders of magnitude lower than the soil SLs. At location AOI 1-GW3, PFOA was detected in groundwater at concentrations that exceeded the SL of 40 ng/L and the combined SL of 70 ng/L for PFOA and PFOS. PFOS and PFBS were detected in groundwater at concentrations below the SL. Based on the exceedance of the SL for PFOA and combined PFOA and PFOS in groundwater, further evaluation at AOI 1 is warranted.

6.4 AOI 2

This section presents the analytical results for soil and groundwater in comparison to SLs for AOI 2, which includes one potential PFAS release area: the Former Fire Station. The detected compounds in soil and groundwater are summarized on **Table 6-2** through **Table 6-5**. The detections of PFOA, PFOS, and PFBS in soil and groundwater are presented on **Figure 6-1** through **Figure 6-8**. Please note, results for CS-MW002D and CS-MW003S are discussed in this section as they are associated with AOI 2 and AOI 3. However, both sampling locations are located downgradient of the AOI 2 and AOI 3 boundaries.

6.4.1 AOI 2 Soil Analytical Results

PFOA, PFOS, PFBS were detected but did not exceed the SLs in soil attributed to the one potential PFAS release area: Former Fire Station. **Figure 6-1** though **Figure 6-6** present the ranges of detections of PFOA, PFOS, and PFBS in soil. **Table 6-2** through **Table 6-4** summarize the detected compounds in soil.

At the Former Fire Station, soil was sampled from surface soil (0.5 to 2 feet bgs), shallow subsurface soil (2 to 13 feet bgs), and deep subsurface (21-42 feet bgs) from eight boring locations during Mobilizations 1 and 2. PFOA, PFOS, and PFBS were detected in soil at a range of concentrations. In the surface soil, PFOA was detected at one of five locations, at a concentration of 0.126 J µg/kg (AOI2-SB3-00-02). PFOS was detected in all five locations, with concentrations ranging from 0.099 J µg/kg (AOI2-SB5-00-02) to 34.2 µg/kg (AOI2-SB3-00-02). PFBS was not detected in any of the five locations.

In the shallow subsurface, PFOA was detected one of five locations, with a detected concentration of 0.588 J µg/kg (AOI2-SB3-02-04). PFOS was detected in four of the five locations, with concentrations ranging from 1.42 J- µg/kg (AOI2-SB5-02-04) to 191 µg/kg (AOI2-SB3-02-04). PFBS was not detected in any of the five locations.

In the deep subsurface, PFOA and PFBS were not detected in any of the three locations. PFOS was detected in two of the three locations, with concentrations ranging from 0.101 J µg/kg (CS-MW003S-SB-40-42-D) to 0.151 J µg/kg (CS-MW002D-SB-39-41).

6.4.2 AOI 2 Groundwater Analytical Results

PFOS in groundwater exceeded its SL at one location associated with the AOI: Former Fire Station. Additionally, the combined PFOA and PFOS in groundwater exceeded the USEPA HAs. However, individually, PFOA did not exceed the SL, and PFBS was not detected at AOI 2. **Figure 6-7** and **Figure 6-8** present the ranges of detections of PFOA, PFOS, and PFBS in groundwater. **Table 6-5** summarizes the detected compounds in groundwater.

Within the Former Fire Station potential PFAS release area, groundwater was sampled from two permanent wells CS-MW002D and CS-MW003S. The SL of 40 ng/L for PFOS and 70 ng/L for the combined PFOA and PFOS were exceeded at CS-MW003S, with a maximum concentration of 147 ng/L PFOS and 168 ng/L for the combined PFOA and PFOS. PFOA was detected in one of the two locations, at a concentration of 21.2 ng/L (CS-MW003S). PFOS was detected in both locations, with concentrations ranging from 37.7 ng/L (CS-MW002D) to 147 ng/L (CS-MW003S). PFBS was not detected in either of the two locations.

6.4.3 AOI 2 Conclusions

Based on the results of the SI, PFOA, PFOS, and PFBS were detected in soil at AOI 2. At location CS-MW003S, PFOS was detected in groundwater, at concentrations exceeding the SL of 40 ng/L and the combined SL of 70 ng/L for PFOA and PFOS. PFOA was detected in groundwater at concentrations below the SL, and PFBS was not detected in either of the two locations. Based on the exceedance of the SL for PFOS in groundwater, further evaluation at AOI 2 is warranted.

6.5 AOI 3

This section presents the analytical results for soil and groundwater in comparison to SLs for AOI 3, which includes two potential PFAS release areas: the Former Airfield and the Former NYS AFSA. The detected compounds in soil and groundwater are summarized on **Table 6-2** through **Table 6-5**. The detections of PFOA, PFOS, and PFBS in soil and groundwater are presented on **Figure 6-1** through **Figure 6-8**. Please note, results for CS-MW002D and CS-MW003S are discussed in this section as they are associated with AOI 2 and AOI 3. However, both sampling locations are located downgradient of the AOI 2 and AOI 3 boundaries.

6.5.1 AOI 3 Soil Analytical Results

PFOA, PFOS, and PFBS did not exceed the SLs in soil at the two potential PFAS release areas: the Former Airfield and the Former NYS AFSA. **Figure 6-1** though **Figure 6-6** present the range of detections of PFOA, PFOS, and PFBS in soil. **Table 6-2** through **Table 6-4** summarize the detected compounds in soil.

At AOI 3, soil was sampled from surface soil (0 to 2 feet bgs), shallow subsurface soil (7 to 9 feet bgs), and deep subsurface (15-17 feet bgs) from five borings during Mobilization 1 and 2. PFOA, PFOS, and PFBS were detected in soil, at concentrations several orders of magnitude lower than the SLs. In the surface soil, PFOA was detected in all three locations, at concentrations ranging from of 0.110 J µg/kg (CS-MW004S-SB-00-02) to 0.173 J µg/kg (AOI 3-SB-0.5-1). PFOS was detected in all three locations, at concentrations ranging from of 0.194 J µg/kg (AOI 3-SB1-0.5-1) to 1.02 J µg/kg (AOI 3-SB2-0.5-1). PFBS was not detected in any of the five locations. In the shallow subsurface, PFOA, PFOS, and PFBS were not detected in any of the three borings.

In the deep subsurface, PFOA and PFBS were not detected in any of the three locations. PFOS was detected in two of the three locations, with concentrations ranging from 0.101 J µg/kg (CS-MW003S-SB-40-42-D) to 0.151 J µg/kg (CS-MW002D-SB-39-41).

6.5.2 AOI 3 Groundwater Analytical Results

PFOS in groundwater exceeded its SL at one location with the AOI: the Former Airfield and the Former NYS AFSA. Additionally, the combined PFOA and PFOS in groundwater exceeded the USEPA HAs. However, individually, PFOA did not exceed the SL at AOI 3, and PFBS was not detected in any location. **Figure 6-6** and **Figure 6-8** present the ranges of detections of PFOA, PFOS, and PFBS in groundwater. **Table 6-5** summarizes the detected compounds in groundwater.

Within the Former Airfield and the Former NYS AFSA potential PFAS release area, groundwater was sampled from two temporary wells, AOI 3-GW1 and AOI 3-GW2, and three permanent wells: CS-MW002D, CS-MW003S, and CS-MW004S. The SL of 40 ng/L for PFOS and 70 ng/L for the combined PFOA and PFOS exceeded at CS-MW003S, with a maximum concentration of 147 ng/L PFOS and 168 ng/L for the combined PFOA and PFOS. PFOA was detected in the three of five locations and ranged in concentrations from 10.3 ng/L (AOI 3 GW-2) to 39.9 ng/L (AOI 3 GW-1). PFOS was detected in three of the five locations, with concentrations ranging from 14.8 ng/L (AOI 3 GW-1) to 147 ng/L (CS-MW003S). PFBS was detected in two of the five locations, with concentrations ranging from 2.66 ng/L (AOI 3 GW-2) to 3.77 ng/L (AOI 3 GW-1).

6.5.3 AOI 3 Conclusions

Based on the results of the SI, PFOA, PFOS, and PFBS were detected in soil at AOI 3; however, the detected concentrations were several orders of magnitude lower than the soil SLs. At location CS-MW003S, PFOS was detected in groundwater, at concentrations exceeding the SL of 40 ng/L and the combined SL of 70 ng/L for PFOA and PFOS. PFOA and PFBS were detected in groundwater, at concentrations below the SL. Based on the exceedance of the SL for PFOS in groundwater, further evaluation at AOI 3 is warranted.

6.6 Facility-Wide Surface Water and Sediment

This section presents the analytical results for surface water and sediment sampling at Camp Smith. Surface water and sediment samples were collected from tributaries flowing to and from Dickiebusch Lake and along Putnam Brook. Sampling locations within these water bodies are downgradient of all three AOIs, except in cases noted. The detected compounds are summarized in **Table 6-6** and **Table 6-7** and on **Figure 6-9** and **Figure 6-10**.

6.6.1 Sediment Analytical Results

Sediment samples were collected from eight locations (CS-SD01 through CS-SD08) in the tributaries flowing to and from Dickiebusch Lake and along Putnam Brook. **Table 6-6** summarizes the detected compounds in sediment. **Figure 6-9** presents the ranges of detections for PFOA, PFOS, and PFBS in sediment.

PFOA was detected in two of eight locations, with concentrations ranging from 0.283 J µg/kg (CS-SD05) to 1.07 J µg/kg (CS-SD02). PFOS was detected in five of eight locations, with concentrations ranging from 1.14 J µg/kg (CS-SD05) to 3.77 µg/kg (CS-SD06). The maximum detection was the PFOS concentration at location CS-SD06, which was the most upgradient location in the tributary leading into Dickiebusch Lake. PFBS was not detected in any of the eight locations. The most frequently detected compound was PFOS, which was detected in all five

sediment samples where PFAS were detected. The occurrence and concentration of individual PFAS varied between sampling location.

6.6.2 Surface Water Analytical Results

Surface water samples were collected from five locations (CS-SW01 through CS-SW05) in the tributaries flowing to and from Dickiebusch Lake and along Putnam Brook. **Table 6-7** summarizes the detected compounds in surface water. **Figure 6-10** presents the ranges of detections PFOA, PFOS, and PFBS in surface water. No PFOA, PFOS, and PFBS were detected in surface water at locations CS-SW01 (surface water at the northern-most point of Dickiebusch Lake), CS-SW02 (surface water flowing into the northwest portion of Dickiebusch Lake), CS-SW03 (surface water flowing into the southwestern portion of Dickiebusch Lake),CS-SW04 (surface water from the underground surface water conveyance that flows out of the southeastern portion of Dickiebusch Lake), and CS-SW05 (surface water in Putnam Brook).

6.6.3 Conclusions

Based on the results of the SI, PFOA and PFOS were detected in sediment at several locations across the facility. There are no established SLs for sediment; therefore, these results are presented for informational purposes only. PFBS was not detected in sediment, and PFOA, PFOS, and PFBS were not detected in surface water.

Table 6-2
PFAS Detections in Surface Soil
Site Inspection Report, Camp Smith

Area of Interest		AOI1												AOI2					
Sample ID		AOI 1-SB1-0.5-1		AOI 1-SB2-0.5-1		AOI 1-SB3-0.5-1		AOI 1-SB3-1-2		CS-MW001S-SB-00-02		CS-MW001S-SB-00-02-D		AOI 2-SB1-0.5-1		AOI2-SB2-00-02		AOI2-SB3-00-02	
Sample Date		12/11/2019		12/11/2019		12/11/2019		12/11/2019		07/20/2021		07/20/2021		12/10/2019		07/24/2021		07/24/2021	
Depth		0.5 - 1 ft		0.5 - 1 ft		0.5 - 1 ft		1 - 2 ft		0 - 2 ft		0 - 2 ft		0.5 - 1 ft		0 - 2 ft		0 - 2 ft	
Analyte	OSD Screening Level [a]	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Soil, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (µg/kg)†																			
6:2 FTS	-	ND		ND		ND		ND		ND		ND		ND		ND		0.460	J
8:2 FTS	-	ND		ND		ND		ND		ND		ND		ND		0.077	J	7.65	
PFBA	-	ND		ND		0.146	J	0.325	J	0.224	J	0.207	J	0.143	J	ND		ND	
PFBS	1900	ND		ND		ND		ND		0.034	J	0.034	J	ND		ND		ND	
PFDA	-	ND		ND		ND		ND		0.093	J	0.085	J	ND		ND		0.111	J
PFDoA	-	ND		ND		ND		ND		0.032	J	0.030	J	ND		0.025	J	ND	
PFHpA	-	ND		ND		ND		ND		0.134	J	0.126	J	ND		ND		0.061	J
PFHxA	-	ND		ND		ND		ND		0.123	J	0.113	J	ND		ND		0.033	J
PFHxS	-	ND		ND		ND		ND		ND		ND		ND		0.053	J	0.150	J
PFNA	-	ND		ND		ND		ND		0.217	J	0.197	J	ND		ND		0.071	J
PFOA	130	ND		ND		ND		0.919	J	0.669	J	0.627	J	ND		ND		0.126	J
PFOS	130	0.260	J	0.345	J	ND		0.339	J	0.396	J	0.334	J	0.432	J	4.56		34.2	
PFPeA	-	ND		ND		ND		ND		0.129	J	0.110	J	ND		ND		0.021	J
PFUnDA	-	ND		ND		ND		ND		0.073	J	0.072	J	ND		0.027	J	0.021	J

Grey Fill — Detected concentration exceeded OSD Screening Levels

†Samples collected during Mobilization 1 were analyzed by QSM 5.1 (which was the most current version at the time of the event)

References

a. Assistant Secretary of Defense, 2021. Risk Based Screening Levels Calculated for PFOS and PFOA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1. 15 September 2021. Soil screening levels based on residential scenario for direct ingestion of contaminated soil.

Interpreted Qualifiers

J = Estimated concentration

Chemical Abbreviations

6:2 FTS	6:2 fluorotelomer sulfonate
8:2 FTS	8:2 fluorotelomer sulfonate
PFBA	perfluorobutanoic acid
PFBS	perfluorobutanesulfonic acid
PFDA	perfluorodecanoic acid
PFDoA	perfluorododecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid
PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

AOI	Area of Interest
D/FD	duplicate
ft	feet
HQ	hazard quotient
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
ND	analyte not detected above the LOD
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
SB	soil boring
USEPA	United States Environmental Protection Agency
µg/kg	micrograms per kilogram
-	not applicable

Table 6-2
PFAS Detections in Surface Soil
Site Inspection Report, Camp Smith

Area of Interest		AOI 2				AOI3									
Sample ID		AOI2-SB4-00-02		AOI2-SB5-00-02		AOI 3-SB1-0.5-1		AOI 3-SB1-1-2		AOI 3-SB1-1-2-FD		AOI 3-SB2-0.5-1		CS-MW004S-SB-00-02	
Sample Date		07/24/2021		07/24/2021		12/10/2019		12/10/2019		12/10/2019		12/10/2019		07/19/2021	
Depth		0 - 2 ft		0 - 2 ft		0.5 - 1 ft		1 - 2 ft		1 - 2 ft		0.5 - 1 ft		0 - 2 ft	
Analyte	OSD Screening Level [a]	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Soil, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (µg/kg)†															
6:2 FTS	-	ND		ND		ND		ND		ND		ND		ND	
8:2 FTS	-	0.065	J	ND		ND		ND		ND		ND		ND	
PFBA	-	ND		ND		0.270	J	0.304	J	0.207	J	0.301	J	0.059	J
PFBS	1900	ND		ND		ND		ND		ND		ND		ND	
PFDA	-	ND		ND		ND		ND		ND		ND		ND	
PFDoA	-	ND		ND		ND		ND		ND		ND		ND	
PFHpA	-	ND		0.030	J	ND		ND		ND		ND		0.033	J
PFHxA	-	ND		0.095	J	ND		ND		ND		ND		0.042	J
PFHxS	-	0.067	J	ND		ND		ND		ND		ND		0.048	J
PFNA	-	ND		0.032	J	ND		ND		ND		0.130	J	ND	
PFOA	130	ND		ND		0.172	J	ND		ND		0.173	J	0.110	J
PFOS	130	1.25		0.099	J	0.194	J	ND		ND		1.02	J	0.283	J
PFPeA	-	ND		0.095	J	ND		ND		ND		ND		0.040	J
PFUnDA	-	ND		ND		ND		ND		ND		ND		ND	

Grey Fill — Detected concentration exceeded OSD Screening Levels

†Samples collected during Mobilization 1 were analyzed by QSM 5.1 (which was the most current version at the time of the event)

References

a. Assistant Secretary of Defense, 2021. Risk Based Screening Levels Calculated for PFOS and PFOA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1. 15 September 2021. Soil screening levels based on residential scenario for direct ingestion of contaminated soil.

Interpreted Qualifiers

J = Estimated concentration

Chemical Abbreviations

6:2 FTS	6:2 fluorotelomer sulfonate
8:2 FTS	8:2 fluorotelomer sulfonate
PFBA	perfluorobutanoic acid
PFBS	perfluorobutanesulfonic acid
PFDA	perfluorodecanoic acid
PFDoA	perfluorododecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid
PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

AOI	Area of Interest
D/FD	duplicate
ft	feet
HQ	hazard quotient
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
ND	analyte not detected above the LOD
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
SB	soil boring
USEPA	United States Environmental Protection Agency
µg/kg	micrograms per kilogram
-	not applicable

Table 6-3
PFAS Detections in Shallow Subsurface Soil
Site Inspection Report, Camp Smith

Area of Interest		AOI1						AOI2										AOI3			
Sample ID		AOI 1-SB1-6-8		AOI 1-SB1-12-14		CS-MW001D-SB-08-10		AOI 2-SB1-11-13		AOI2-SB2-02-04		AOI2-SB3-02-04		AOI2-SB4-02-04		AOI2-SB5-02-04		AOI 3-SB2-7-9		CS-MW004S-SB-07-09	
Sample Date		12/11/2019		12/11/2019		07/20/2021		12/10/2019		07/24/2021		07/24/2021		07/24/2021		07/24/2021		12/10/2019		07/19/2021	
Depth		6 - 8 ft		12 - 14 ft		8 - 10 ft		11 - 13 ft		2 - 4 ft		2 - 4 ft		2 - 4 ft		2 - 4 ft		7 - 9 ft		7 - 9 ft	
Analyte	**OSD Screening Level [a]**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**
Soil, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (µg/kg)†																					
6:2 FTS	-	ND		ND		ND		ND		ND		3.10		ND		ND		ND		ND	
8:2 FTS	-	ND		ND		ND		ND		0.670	J	30.2		2.08		0.426	J	ND		ND	
PFBA	-	0.313	J	0.257	J	ND		0.299	J	ND		0.050	J	ND		ND		0.274	J	ND	
PFBS	25000	ND		ND		0.025	J	ND		ND		ND		ND		ND		ND		ND	
PFDA	-	ND		ND		ND		ND		0.066	J	0.199	J	ND		ND		ND		ND	
PFDoA	-	ND		ND		ND		ND		ND		0.025	J	ND		ND		ND		ND	
PFHpA	-	ND		ND		ND		ND		0.031	J	0.195	J	0.022	J	ND		ND		ND	
PFHxA	-	ND		ND		0.034	J	ND		0.033	J	0.198	J	ND		0.033	J	ND		ND	
PFHxS	-	ND		ND		ND		ND		0.168	J	0.860	J	0.079	J	0.213	J	ND		ND	
PFNA	-	ND		ND		ND		ND		0.046	J	0.285	J	ND		ND		ND		ND	
PFOA	1600	ND		ND		0.129	J	ND		ND		0.588	J	ND		ND		ND		ND	
PFOS	1600	ND		ND		0.117	J	ND		24.4		191		17.6		1.42	J-	ND		ND	
PFPeA	-	ND		ND		ND		ND		ND		0.121	J	0.025	J	ND		ND		ND	
PFUnDA	-	ND		ND		ND		ND		0.037	J	0.028	J	0.022	J	ND		ND		ND	

Grey Fill — Detected concentration exceeded OSD Screening Levels

†Samples collected during Mobilization 1 were analyzed by QSM 5.1 (which was the most current version at the time of the event)

References

a. Assistant Secretary of Defense, 2021. Risk Based Screening Levels Calculated for PFOS and PFOA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1. 15 September 2021. Soil screening levels based on industrial/commercial composite worker scenario for incidental ingestion of contaminated soil.

Interpreted Qualifiers

J = Estimated concentration

J- = Estimated concentration, biased low

Chemical Abbreviations

6:2 FTS	6:2 fluorotelomer sulfonate
8:2 FTS	8:2 fluorotelomer sulfonate
PFBA	perfluorobutanoic acid
PFBS	perfluorobutanesulfonic acid
PFDA	perfluorodecanoic acid
PFDoA	perfluorododecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid
PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

AOI	Area of Interest
D	duplicate
ft	feet
HQ	hazard quotient
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
ND	analyte not detected above the LOD
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
SB	soil boring
USEPA	United States Environmental Protection Agency
µg/kg	micrograms per kilogram
-	not applicable

Table 6-4
PFAS Detections in Deep Subsurface Soil
Site Inspection Report, Camp Smith

Area of Interest	AOI2		AOI 2/3						AOI3	
Sample ID	AOI 2-SB1-21-23		CS-MW002D-SB-39-41		CS-MW003S-SB-40-42		CS-MW003S-SB-40-42-D		AOI 3-SB2-15-17	
Sample Date	12/10/2019		07/23/2021		07/25/2021		07/25/2021		12/10/2019	
Depth	21 - 23 ft		39 - 41 ft		40 - 42 ft		40 - 42 ft		15 - 17 ft	
Analyte	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**
Soil, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (µg/kg)†										
PFBA	0.347	J	ND		ND		ND		0.234	J
PFHxA	ND		ND		0.026	J	ND	UJ	ND	
PFOS	ND		0.151	J	0.131	J	0.101	J	ND	

†Samples collected during Mobilization 1 were analyzed by QSM 5.1 (which was the most current version at the time of the event)

Interpreted Qualifiers

J = Estimated concentration

UJ = The analyte was not detected at a level greater than or equal to the adjusted detection limit (DL). However, the reported adjusted DL is approximate and may be inaccurate or imprecise.

Chemical Abbreviations

PFBA	perfluorobutanoic acid
PFHxA	perfluorohexanoic acid
PFOS	perfluorooctanesulfonic acid

Acronyms and Abbreviations

AOI	Area of Interest
D	duplicate
ft	feet
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
ND	analyte not detected above the LOD
QSM	Quality Systems Manual
Qual	interpreted qualifier
SB	soil boring
µg/kg	micrograms per Kilogram

Table 6-5
PFAS Detections in Groundwater
Site Inspection Report, Camp Smith

	Area of Interest	AOI1												AOI 2/3				AOI 3	
	Sample ID	AOI 1-GW1		AOI 1-GW2		AOI 1-GW3		CS-MW001D-GW		CS-MW001S-GW		CS-MW001S-GW-D		CS-MW002D-GW		CS-MW003S-GW		CS-MW004S-GW	
	Sample Date	12/11/2019		12/11/2019		12/11/2019		07/24/2021		07/24/2021		07/24/2021		07/28/2021		07/27/2021		07/22/2021	
Analyte	**OSD Screening Level [a]**	**USEPA HA [b]**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**
Water, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (ng/l)†																				
6:2 FTS	-	-	2.10	J	ND		ND		ND		9.15		8.61		10.1		12.6		224	J-
PFBA	-	-	7.28	J	4.73	J	35.4		ND		ND		ND		ND		14.3		ND	
PFBS	600	-	2.87	J	ND		3.39	J	ND		ND		ND		ND		ND		ND	
PFDA	-	-	1.68	J	ND		ND		ND		ND		ND		ND		ND		ND	
PFHpA	-	-	4.77	J	3.50	J	9.51	J	3.00	J	1.74	J	1.85	J	2.75	J	27.0		ND	
PFHxA	-	-	9.81	J	3.42	J	11.4		ND		ND		ND		ND		43.2		ND	
PFHxS	-	-	14.6		3.45	J	10.2		7.05		3.81	J	3.80	J	17.9		64.1		ND	
PFNA	-	-	4.18	J	4.23	J	5.17	J	ND		ND		ND		ND		1.70	J	ND	
PFOA	40	70	29.0		24.0	J-	58.4		16.1		14.3		14.5		ND		21.2		ND	
PFOS	40	70	37.8		13.2	J+	12.5		10.8		ND		ND		37.7		**147**		ND	
PFPeA	-	-	ND		ND		ND		ND		ND		ND		ND		48.5		ND	
Total PFOA+PFOS	-	70	66.8		37.2		**70.9**		26.9		14.3		14.5		37.7		**168**		ND	

Grey Fill	Detected concentration exceeded OSD Screening Levels
Bold Font	Detected concentration exceeded USEPA HA Screening Levels

†Samples collected during Mobilization 1 were analyzed by QSM 5.1 (which was the most current version at the time of the event)

References

a. Assistant Secretary of Defense, 2021. Risk Based Screening Levels Calculated for PFOS and PFOA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1. 15 September 2021. Groundwater screening levels based on residential scenario for direct ingestion of groundwater.

b. USEPA, 2016. Drinking Water Health Advisory for PFOA. Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. EPA Document Number: 822-R-16-005. May 2016. / EPA. 2016. Drinking Water Health Advisory for PFOS. Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. EPA Document Number: 822-R-16-004. May 2016.

Interpreted Qualifiers

J = Estimated concentration
J- = Estimated concentration, biased low
J+ = Estimated concentration, biased high

Chemical Abbreviations

6:2 FTS	6:2 fluorotelomer sulfonate
PFBA	perfluorobutanoic acid
PFBS	perfluorobutanesulfonic acid
PFDA	perfluorodecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid

Acronyms and Abbreviations

AOI	Area of Interest
D/FD	duplicate
GW	groundwater
HA	Health Advisory
HQ	hazard quotient
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
ND	analyte not detected above the LOD
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
USEPA	United States Environmental Protection Agency
ng/l	nanogram per liter
-	not applicable

Table 6-5
PFAS Detections in Groundwater
Site Inspection Report, Camp Smith

	Area of Interest	AOI3					
	Sample ID	AOI 3-GW1		AOI 3-GW1-FD		AOI 3-GW2	
	Sample Date	12/10/2019		12/10/2019		12/10/2019	
Analyte	OSD Screening Level [a]	USEPA HA [b]	Result	Qual	Result	Qual	Result	Qual
Water, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (ng/l)†								
6:2 FTS	-	-	ND		ND		2.60	J
PFBA	-	-	12.9		12.5		4.50	J
PFBS	600	-	3.77	J	3.69	J	2.66	J
PFDA	-	-	ND		ND		ND	
PFHpA	-	-	8.83	J	8.09	J	ND	
PFHxA	-	-	22.0		21.3		4.49	J
PFHxS	-	-	6.19	J	5.93	J	ND	
PFNA	-	-	3.57	J	4.25	J	ND	
PFOA	40	70	35.5		39.9		10.3	
PFOS	40	70	15.3		14.8		19.7	
PFPeA	-	-	21.9		22.2		ND	
Total PFOA+PFOS	-	70	50.8		54.7		30.0	

Grey Fill	Detected concentration exceeded OSD Screening Levels
Bold Font	Detected concentration exceeded USEPA HA Screening Levels

†Samples collected during Mobilization 1 were analyzed by QSM 5.1 (which was the most current version at the time of the event)

References

a. Assistant Secretary of Defense, 2021. Risk Based Screening Levels Calculated for PFOS and PFOA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1. 15 September 2021. Groundwater screening levels based on residential scenario for direct ingestion of groundwater.

b. USEPA, 2016. Drinking Water Health Advisory for PFOA. Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. EPA Document Number: 822-R-16-005. May 2016. / EPA. 2016. Drinking Water Health Advisory for PFOS. Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. EPA Document Number: 822-R-16-004. May 2016.

Interpreted Qualifiers

J = Estimated concentration
J- = Estimated concentration, biased low
J+ = Estimated concentration, biased high

Chemical Abbreviations

6:2 FTS	6:2 fluorotelomer sulfonate
PFBA	perfluorobutanoic acid
PFBS	perfluorobutanesulfonic acid
PFDA	perfluorodecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid

Acronyms and Abbreviations

AOI	Area of Interest
D/FD	duplicate
GW	groundwater
HA	Health Advisory
HQ	hazard quotient
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
ND	analyte not detected above the LOD
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
USEPA	United States Environmental Protection Agency
ng/l	nanogram per liter
-	not applicable

Table 6-6
PFAS Detections in Sediment
Site Inspection Report, Camp Smith

Area of Interest	Camp Smith															
Sample ID	CS-SD01-0-1		CS-SD02-0-1		CS-SD03-0-1		CS-SD04-0-1		CS-SD05-0-1		CS-SD06-0-1		CS-SD07-0-1		CS-SD08-0-1	
Sample Date	12/12/2019		12/12/2019		12/12/2019		12/12/2019		12/11/2019		12/12/2019		12/12/2019		12/12/2019	
Depth	0 - 1 ft		0 - 1 ft		0 - 1 ft		0 - 1 ft		0 - 1 ft		0 - 1 ft		0 - 1 ft		0 - 1 ft	
Analyte	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**
Sediment, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (µg/kg)†																
PFBA	ND		0.402	J	ND		ND		ND		ND		ND		ND	
PFHxA	ND		0.353	J	ND		ND		ND		ND		ND		ND	
PFHxS	ND		ND		ND		ND		ND		0.199	J	ND		ND	
PFNA	ND	UJ	0.192	J	ND		ND		ND		ND		ND		ND	
PFOA	ND		1.07	J	ND		ND		0.283	J	ND		ND		ND	
PFOS	2.14	J+	3.24		ND		ND		1.14	J	3.77		ND		2.13	J
PFUnDA	ND	UJ	0.299	J	ND	UJ	ND		ND		ND		ND		ND	UJ

†Samples collected during Mobilization 1 were analyzed by QSM 5.1 (which was the most current version at the time of the event)

Interpreted Qualifiers

J = Estimated concentration

J+ = Estimated concentration, biased high

UJ = The analyte was not detected at a level greater than or equal to the adjusted detection limit (DL). However, the reported adjusted DL is approximate and may be inaccurate or imprecise.

Chemical Abbreviations

PFBA	perfluorobutanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

ft	feet
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
ND	analyte not detected above the LOD
QSM	Quality Systems Manual
Qual	interpreted qualifier
SD	sediment
µg/kg	micrograms per kilogram

Table 6-7
PFAS Detections in Surface Water
Site Inspection Report, Camp Smith

Area of Interest	Camp Smith									
Sample ID	CS-SW01		CS-SW02		CS-SW03		CS-SW04		CS-SW05	
Sample Date	12/12/2019		12/12/2019		12/12/2019		12/12/2019		12/11/2019	
Analyte	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Water, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (ng/l)†										
PFDoA	ND	UJ	ND	UJ	ND	UJ	ND	UJ	2.64	J-

†Samples collected during Mobilization 1 were analyzed by QSM 5.1 (which was the most current version at the time of the event)

Interpreted Qualifiers

J- = Estimated concentration, biased low

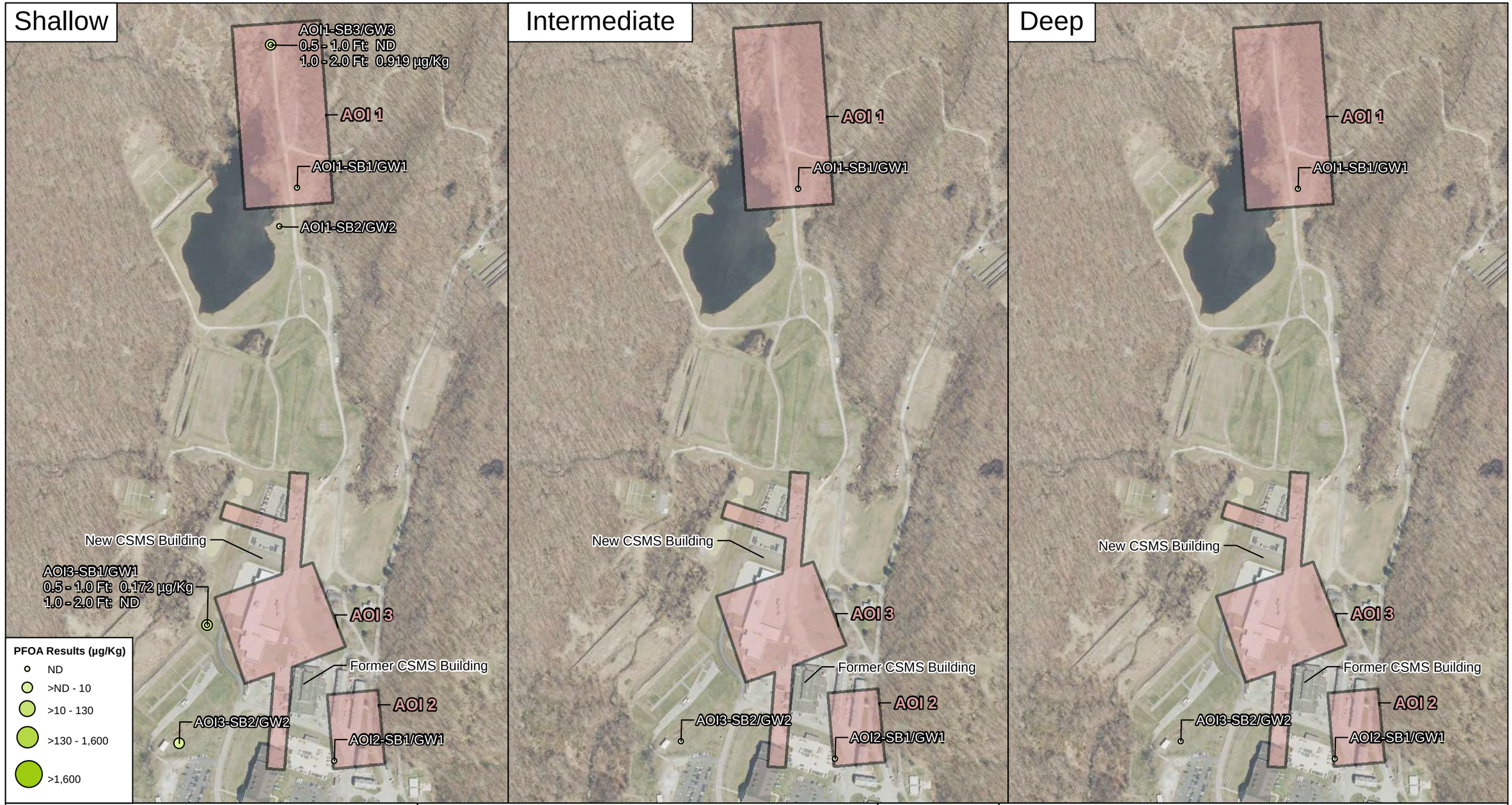
UJ = The analyte was not detected at a level greater than or equal to the adjusted detection limit (DL). However, the reported adjusted DL is approximate and may be inaccurate or imprecise.

Chemical Abbreviations

PFDoA	perfluorododecanoic acid

Acronyms and Abbreviations

LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
ND	analyte not detected above the LOD
QSM	Quality Systems Manual
Qual	interpreted qualifier
ng/l	nanogram per liter
SW	surface water



CLIENT	ARNG			
PROJECT	Site Inspection for PFAS at Camp Smith, NY			
REVISED	12/8/2021	GIS BY	MS	12/8/2021
SCALE	1:5,795	CHK BY	AB	12/8/2021
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	CM	12/8/2021

Legend

- Area of Interest
- Facility Location

0 240 480 960 Feet

N

PFOA Detections in Soil, Mobilization 1

AECOM
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Germantown, MD 20876

Figure 6-1

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Shallow

AOI1-SB3/GW3
0.5 - 1.0 Ft: ND
1.0 - 2 0 Ft: 0.339 µg/Kg

AOI 1

AOI1-SB1/GW1

AOI1-SB2/GW2

New CSMS Building

AOI3-SB1/GW1
0.5 - 1.0 Ft: 0.194 µg/Kg
1.0 - 2.0 Ft: ND

AOI 3

Former CSMS Building

AOI 2

AOI3-SB2/GW2

AOI2-SB1/GW1

PFOS Results (µg/Kg)

- ND
- >ND - 10
- >10 - 130
- >130 - 1,600
- >1,600

Intermediate

AOI 1

AOI1-SB1/GW1

New CSMS Building

AOI 3

Former CSMS Building

AOI 2

AOI3-SB2/GW2

AOI2-SB1/GW1

Deep

AOI 1

AOI1-SB1/GW1

New CSMS Building

AOI 3

Former CSMS Building

AOI 2

AOI3-SB2/GW2

AOI2-SB1/GW1

CLIENT	ARNG			
PROJECT	Site Inspection for PFAS at Camp Smith, NY			
REVISED	12/8/2021	GIS BY	MS	12/8/2021
SCALE	1:5,795	CHK BY	AB	12/8/2021
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	CM	12/8/2021

Legend

- Area of Interest
- Facility Location

0 240 480 960 Feet

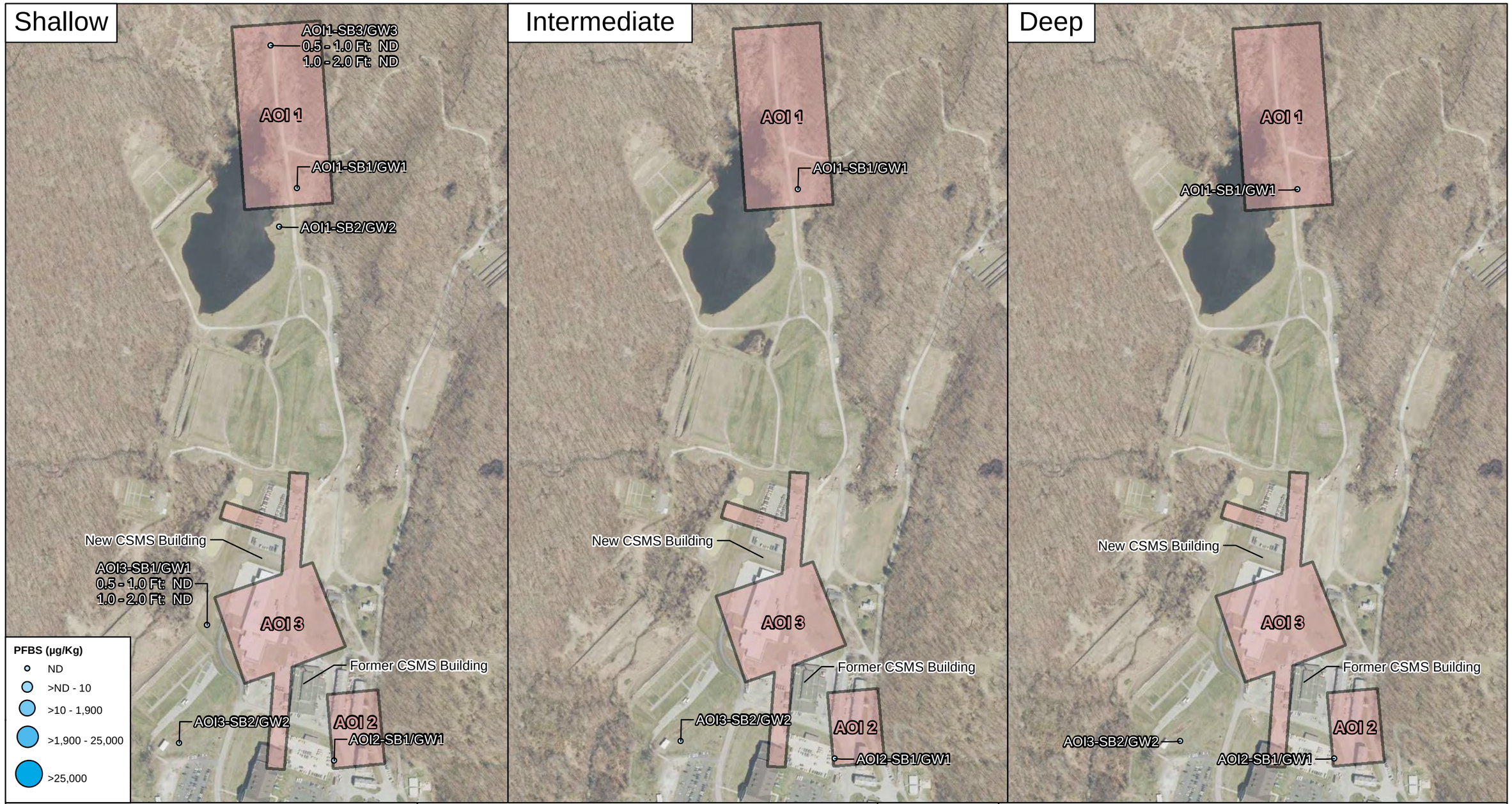
N

PFOS Detections in Soil, Mobilization 1

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-2

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CLIENT	ARNG			
PROJECT	Site Inspection for PFAS at Camp Smith, NY			
REVISED	12/9/2021	GIS BY	MS	12/9/2021
SCALE	1:5,795	CHK BY	AB	12/9/2021
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	MS	12/9/2021

Legend

- Facility Location
- Area of Interest

0 240 480 960 Feet

N

PFBS Detections in Soil, Mobilization 1

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Germantown, MD 20876

Figure 6-3

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Shallow

Intermediate

Deep

CS-MW001S

CS-MW001D

CS-MW003S

CS-MW002D

CS-MW004S

Dickiebusch Lake

Putnam Brook

AOI2-SB2

AOI2-SB3

AOI2-SB4

AOI2-SB5

0 100 200 400 Feet

0 150 300 600 Feet

PFOA Results (µg/Kg)

- ND
- >ND - 10
- >10 - 130
- >130 - 1,600
- >1,600

CLIENT	ARNG			
PROJECT	Site Inspection for PFAS at Camp Smith, NY			
REVISED	12/9/2021	GIS BY	MS	12/9/2021
SCALE	1:2,400	CHK BY	AB	12/9/2021
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	CM	12/9/2021

Legend

- Facility Location
- Water Body
- Wetland
- River/Stream

N

PFOA Detections in Soil, Mobilization 2

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Germantown, MD 20876

Figure 6-4

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Shallow

CS-MW001S

Dickiebusch Lake

0 100 200 400 Feet

CS-MW004S

Putnam Brook

AOI2-SB2

AOI2-SB3

AOI2-SB4

AOI2-SB5

0 150 300 600 Feet

PFOS Results (µg/Kg)

- ND
- >ND - 10
- >10 - 130
- >130 - 1,600
- >1,600

Intermediate

CS-MW001D

Dickiebusch Lake

0 100 200 400 Feet

CS-MW004S

Putnam Brook

AOI2-SB2

AOI2-SB3

AOI2-SB4

AOI2-SB5

0 150 300 600 Feet

Deep

CS-MW003S

CS-MW002D

0 100 200 400 Feet

CLIENT	ARNG			
PROJECT	Site Inspection for PFAS at Camp Smith, NY			
REVISED	12/9/2021	GIS BY	MS	12/9/2021
SCALE	1:2,402	CHK BY	AB	12/9/2021
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	CM	12/9/2021

Legend

- Facility Location
- Water Body
- Wetland
- River/Stream

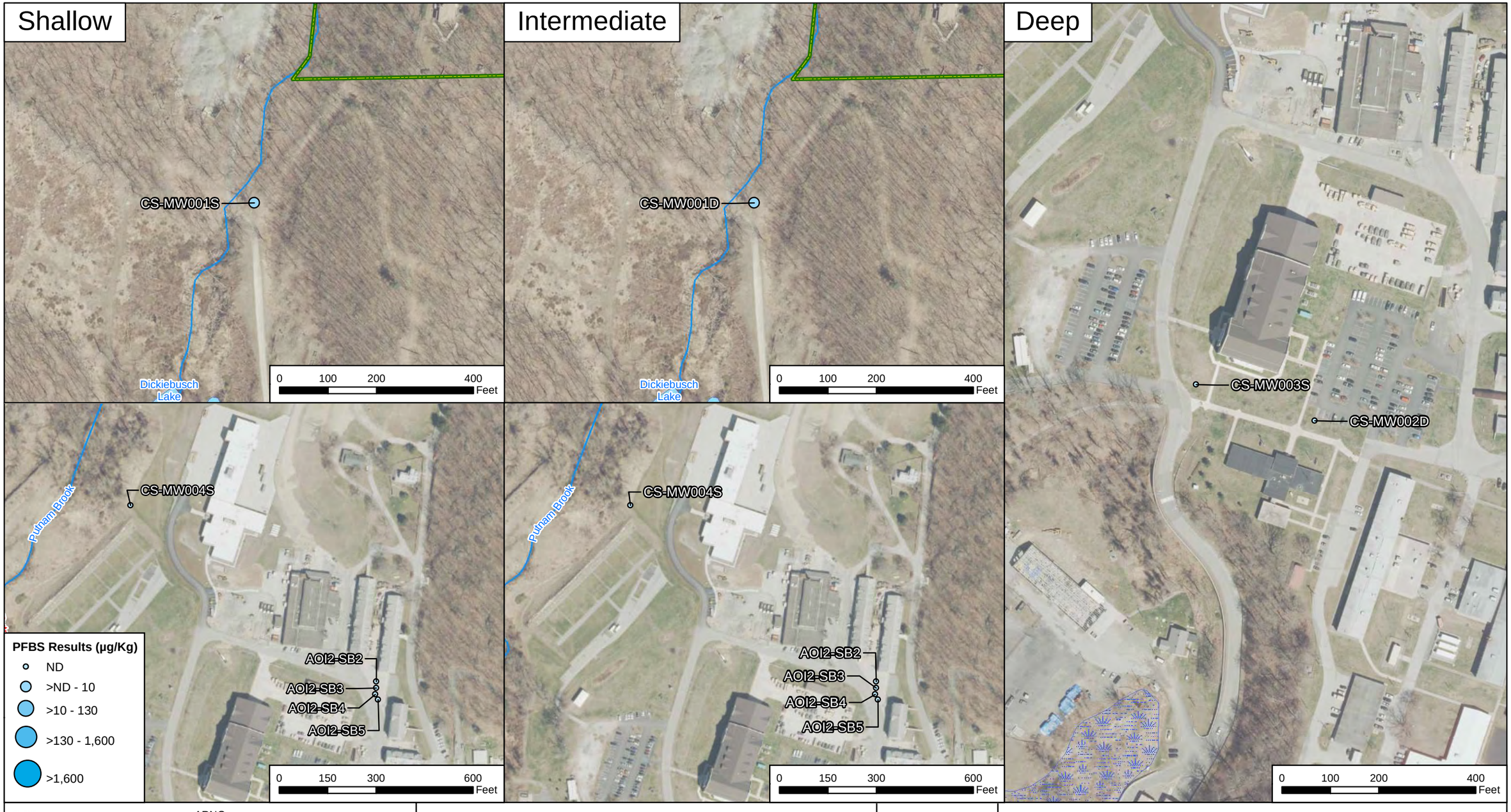
N

PFOS Detections in Soil, Mobilization 2

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Germantown, MD 20876

Figure 6-5

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CLIENT	ARNG			
PROJECT	Site Inspection for PFAS at Camp Smith, NY			
REVISED	12/9/2021	GIS BY	MS	12/9/2021
SCALE	1:2,400	CHK BY	AB	12/9/2021
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	CM	12/9/2021

Legend

- Facility Location
- Water Body
- Wetland
- River/Stream

N

PFBS Detections in Soil, Mobilization 2

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Figure 6-6

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PFOA

PFOS

PFBS

AOI1-SB3/GW3

AOI 1

AOI1-SB1/GW1

AOI1-SB2/GW2

New CSMS Building

AOI3-SB1/GW1

AOI 3

Former CSMS Building

AOI3-SB2/GW2

AOI 2

PFOA Results (ng/L)

- ND
- >ND - 10
- >10 - 40
- >40 - 70
- >70 - 400
- >400

PFOS Results (ng/L)

- ND
- >ND - 10
- >10 - 40
- >40 - 70
- >70 - 400
- >400

PFBS Results (ng/L)

- ND
- >ND - 100
- >100 - 600
- >600 - 1,000
- >1,000 - 6000
- >6000

CLIENT	ARNG			
PROJECT	Site Inspection for PFAS at Camp Smith, NY			
REVISED	10/22/2021	GIS BY	MS	10/22/2021
SCALE	1:5,795	CHK BY	AB	10/22/2021
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	CM	10/22/2021

Legend

- Area of Interest
- Facility Location

0 240 480 960 Feet

N

PFOA, PFOS, and PFBS Detections in Groundwater, Mobilization 1

AECOM
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Germantown, MD 20876

Figure 6-7

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PFOA

PFOS

PFBS

CS-MW001S

CS-MW001D

Dickiebusch Lake

New CSMS Building

CS-MW004S

Putnam Brook

Former CSMS Building

CS-MW003S

CS-MW002D

PFOA Results (ng/L)

- ND
- >ND - 10
- >10 - 40
- >40 - 70
- >70 - 400
- >400

PFOS Results (ng/L)

- ND
- >ND - 10
- >10 - 40
- >40 - 70
- >70 - 400
- >400

PFBS Results (ng/L)

- ND
- >ND - 100
- >100 - 600
- >600 - 1,000
- >1,000 - 6,000
- >6,000

CLIENT	ARNG			
PROJECT	Site Inspection for PFAS at Camp Smith, NY			
REVISED	10/22/2021	GIS BY	MS	10/22/2021
SCALE	1:6,278	CHK BY	AB	10/22/2021
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	CM	10/22/2021

Legend

- Facility Location
- Water Body
- Wetland
- River/Stream
- Underground Surface Water Conveyance

0 260 520 1,040 Feet

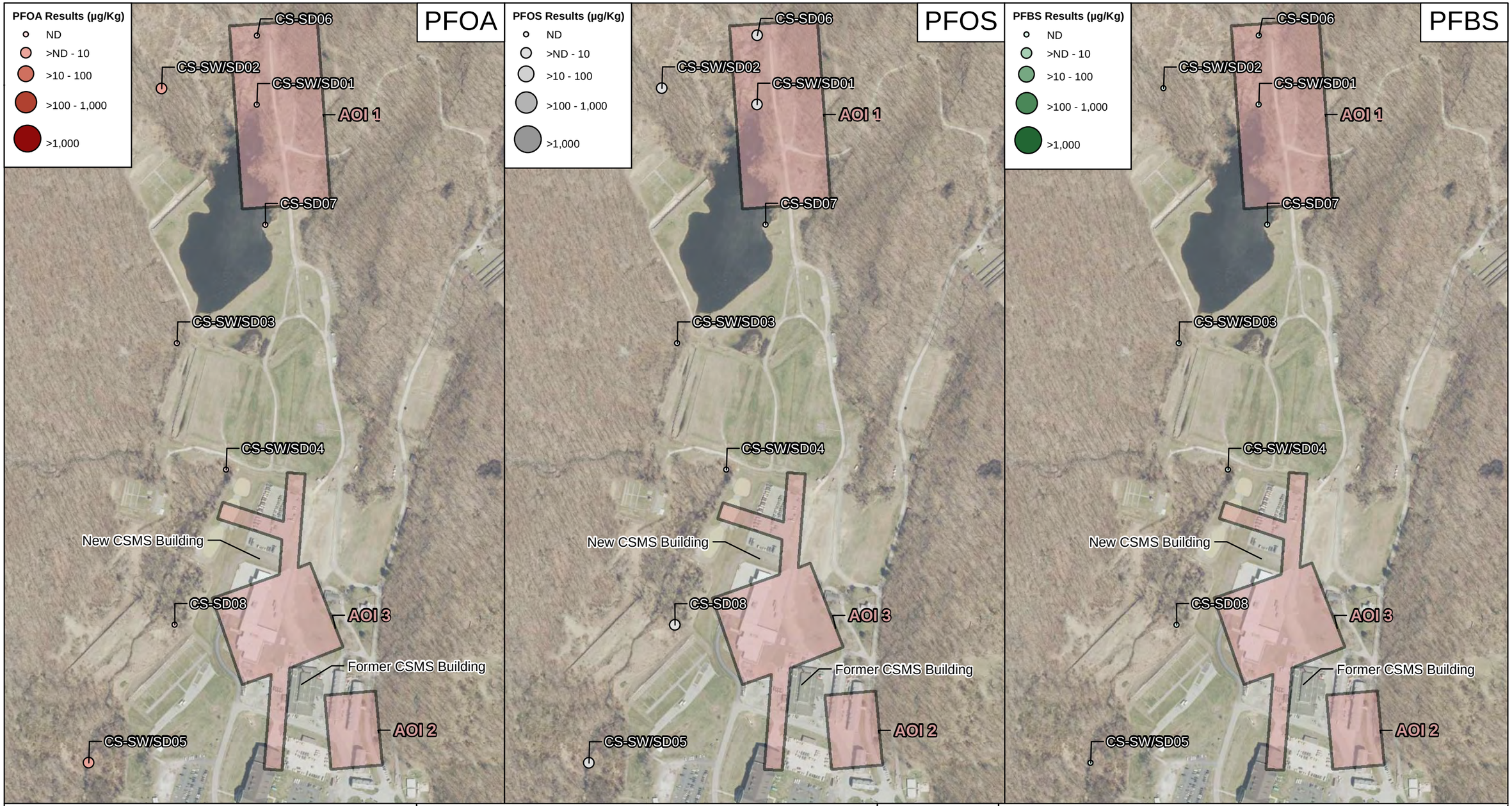
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PFOA, PFOS, and PFBS Detections in Groundwater, Mobilization 2

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Germantown, MD 20876

Figure 6-8

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CLIENT	ARNG			
PROJECT	Site Inspection for PFAS at Camp Smith, NY			
REVISED	10/22/2021	GIS BY	MS	10/22/2021
SCALE	1:5,758	CHK BY	AB	10/22/2021
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	CM	10/22/2021

Legend

- Area of Interest
- Facility Location

0 240 480 960 Feet

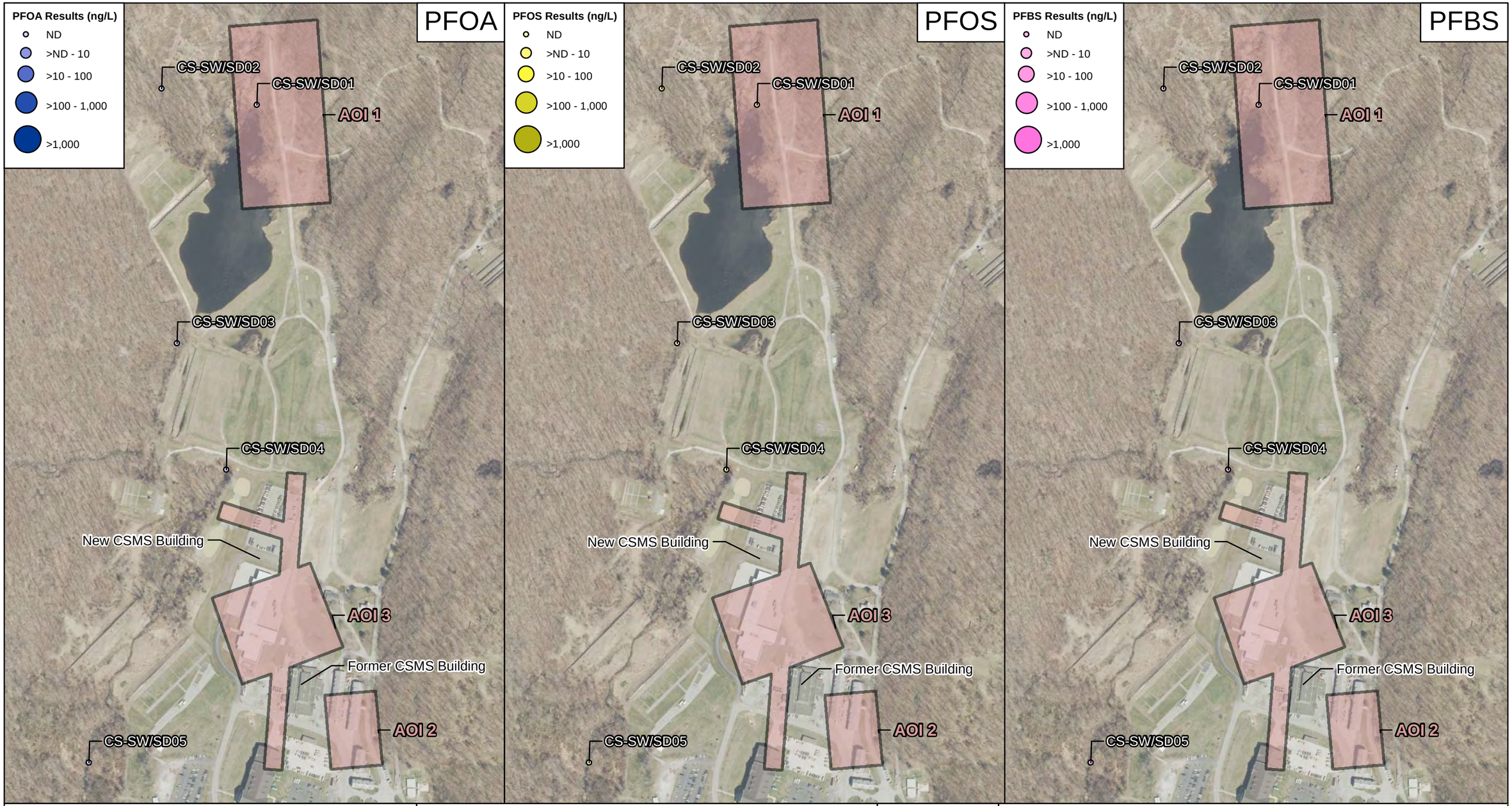
N

PFOA, PFOS, and PFBS Detections in Sediment

AECOM
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Germantown, MD 20876

Figure 6-9

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CLIENT	ARNG			
PROJECT	Site Inspection for PFAS at Camp Smith, NY			
REVISED	10/22/2021	GIS BY	MS	10/22/2021
SCALE	1:5,760	CHK BY	AB	10/22/2021
Base Map: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		PM	CM	10/22/2021

Legend

Area of Interest

Facility Location

0 240 480 960 Feet

N

PFOA, PFOS, and PFBS Detections in Surface Water

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure 6-10

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7. Exposure Pathways

The CSMs for each AOI, revised based on the SI findings, are presented on **Figure 7-1** through **Figure 7-3**. A CSM presents the current understanding of the site conditions with respect to known and suspected sources, potential transport mechanisms and migration pathways, and potentially exposed human receptors. A human exposure pathway is considered potentially complete when the following conditions are present:

1. Contaminant source;
2. Environmental fate and transport;
3. Exposure point;
4. Exposure route; and
5. Potentially exposed populations.

If any of these elements are missing, the pathway is incomplete. The CSM figures use an empty circle symbol to represent an incomplete exposure pathway. Areas with an incomplete pathway generally warrant no further action; however, the pathway is considered potentially complete if PFOA, PFOS, or PFBS are detected, in which case the CSM figure uses a half-filled circle symbol to represent a potentially complete exposure pathway. Additionally, a completely filled circle symbol is used to indicate when a potentially complete exposure pathway has detections of PFOA, PFOS, or PFBS above the SLs. Areas with an identified potentially complete pathway may warrant further investigation.

In general, the potential routes of exposure to PFAS are ingestion and inhalation. Human exposure via the dermal contact pathway may occur, and current risk practice suggests it is an insignificant pathway compared to ingestion; however, exposure data for dermal pathways are sparse and continue to be the subject of PFAS toxicological study. The receptors evaluated are consistent with those listed in USEPA guidance for risk screening (USEPA, 2001). Receptors at the facility include site workers (e.g., facility staff and visiting soldiers), construction workers, trespassers (though unlikely due to restricted access), residents outside the facility boundary, and recreational users outside of the facility boundary.

7.1 Soil Exposure Pathway

The SI results for PFOA, PFOS, and PFBS in soil were used to determine whether a potentially complete pathway exists between the source and potential receptors at the AOIs based on the aforementioned criteria.

7.1.1 AOI 1

From approximately 1980 to 1996, PFAS may have been released to soil at the potential release area of the Former Fire Pit. The Former Fire Pit was used as a live fire training ground for the fire fighters and emergency responders, where fire training occurred with some frequency, possibly once a month. The use of this area as a fire training ground during this time period could have resulted in potential releases of PFAS to soil.

Based on the results of the SI in AOI 1, ground-disturbing activities could potentially result in site worker, construction worker, or trespasser exposure to PFOA, PFOS, and PFBS via inhalation of dust. Ground-disturbing activities could also potentially result in site worker, construction worker, or trespasser exposure via ingestion of surface soil. Lastly, ground-disturbing activities could also

potentially result in construction worker exposure to PFOA, PFOS, and PFBS in subsurface soil via ingestion. The CSM for AOI 1 is presented on **Figure 7-1**.

7.1.2 AOI 2

The Former Fire Station was active between 1980 and 1996. While operational, two firetrucks were housed at the Former Fire Station, though no known AFFF was used in either truck or stored within the building. Due to the uncertainty of use or storage of AFFF at this location, there is potential for a release of PFAS to soil.

Based on the results of the SI in AOI 2, site worker, construction worker, or trespasser exposure to PFOA, PFOS, and PFBS via inhalation of dust. Ground-disturbing activities could also potentially result in site worker, construction worker, or trespasser exposure via ingestion of surface soil. Lastly, ground-disturbing activities could also potentially result in construction worker exposure to PFOA, PFOS, and PFBS in subsurface soil via ingestion. The CSM for AOI 2 is presented on **Figure 7-2**.

7.1.3 AOI 3

The Former Airfield was constructed sometime between 1955 and 1960 and was removed in the late 1970s. There is uncertainty whether there were AFFF usage at the Former Airfield while it was active. The former NYS AFSA operated beginning in the late 1990's and ceased operation in September 2006. Activities at the former NYS AFSA were described as including classroom training, fire services, forensics, and arson investigation. It is unknown if any of the training activities that occurred at the facility included fire training with AFFF or other firefighting foams. Due to the uncertainty of use or storage of AFFF at these locations at AOI 3, there is potential for a release of PFAS to soil.

Based on the results of the SI in AOI 3, ground-disturbing activities could potentially result in site worker, construction worker, or trespasser exposure to PFOA, PFOS, and PFBS via inhalation of dust. Ground-disturbing activities could also potentially result in site worker, construction worker, or trespasser exposure via ingestion of surface soil. Additionally, ground-disturbing activities could potentially result in construction worker exposure via ingestion of subsurface soil. The CSM for AOI 3 is presented on **Figure 7-3**.

7.2 Groundwater Exposure Pathway

The SI results for PFOA, PFOS, and PFBS in groundwater were used to determine whether a potentially complete pathway exists between the source and potential receptors at the AOIs, based on the aforementioned criteria.

7.2.1 AOI 1

PFOA exceeded the SLs in one temporary monitoring well at AOI 1. PFOA, PFOS, and PFBS were detected in groundwater from other temporary and permanent monitoring wells at AOI 1, but the detections were below SLs. It is known that PFOA and PFOS concentrations have exceeded the USEPA HAs in onsite drinking water wells; therefore, the ingestion exposure pathway for site workers is potentially complete. Depths to water measured in AOI 1 during Mobilization 2 ranged from 7.47 to 7.57 feet bgs; therefore, groundwater may be encountered during construction activities, and the ingestion exposure pathway for construction workers is considered potentially complete. The exact fate and transport of PFOA, PFOS, and PFBS from the facility to potential off-site receptors are not fully known at this point. However, based on the results of the PA and SI, there doesn't appear to be any off-facility residential wells immediately downgradient of the

facility. Given the location of the releases on the facility, the observed groundwater flow direction, and the close proximity of the Annsville Creek/Hudson River to the southern facility boundary, it is unlikely any future off-facility residential wells would be installed downgradient of the facility. Therefore, the pathway is incomplete between the source and off-facility residential receptors. This pathway is also incomplete for trespassers and recreational users given that the site is a secure facility and the depth to groundwater. The CSM for AOI 1 is presented on **Figure 7-1**.

7.2.2 AOI 2

PFOS exceeded the SLs at monitoring well CS-MW003S in AOI 2. It is known that PFOA and PFOS concentrations have exceeded the USEPA HAs in onsite drinking water wells; therefore, the ingestion exposure pathway for site workers is potentially complete. Groundwater was not observed to be present at a depth shallower than 15 feet bgs within the AOI during Mobilization 1 or downgradient of the AOI during Mobilization 2; therefore, groundwater is not likely to be encountered during construction activities, and the ingestion exposure pathway for construction workers is not complete. The exact fate and transport of PFOA, PFOS, and PFBS from the facility to potential off-site receptors are not fully known at this point. However, based on the results of the PA and SI, there doesn't appear to be any off-facility residential wells immediately downgradient of the facility. Given the location of the releases on the facility, the observed groundwater flow direction, and the close proximity of the Annsville Creek/Hudson River to the southern facility boundary, it is unlikely any future off-facility residential wells would be installed downgradient of the facility. Therefore, the pathway is incomplete between the source and off-facility residential receptors. This pathway is also incomplete for trespassers and recreational users given that the site is a secure facility and the depth to groundwater. The CSM for AOI 2 is presented on **Figure 7-2**.

7.2.3 AOI 3

PFOS exceeded the SLs at monitoring well CS-MW003S in AOI 3. It is known that PFOA and PFOS concentrations have exceeded the USEPA HAs in onsite drinking water wells; therefore, the ingestion exposure pathway for site workers is potentially complete. Depths to water measured in AOI 3 during Mobilization 2 were as shallow as 4.23 feet bgs. Therefore, groundwater may be encountered during construction activities and the ingestion exposure pathway for construction workers is considered potentially complete. The exact fate and transport of PFOA, PFOS, and PFBS from the facility to potential off-site receptors is not fully known at this point. However, based on the results of the PA and SI, there doesn't appear to be any off-facility residential wells immediately downgradient of the facility. Given the location of the releases on the facility, the observed groundwater flow direction, and the close proximity of the Annsville Creek/Hudson River to the southern facility boundary, it is unlikely any future off-facility residential wells would be installed downgradient of the facility. Therefore, the pathway is incomplete between source and off-facility residential receptors. This pathway is also incomplete for trespassers and recreational users given that the site is a secure facility and the depth to groundwater. The CSM for AOI 3 is presented on **Figure 7-3**.

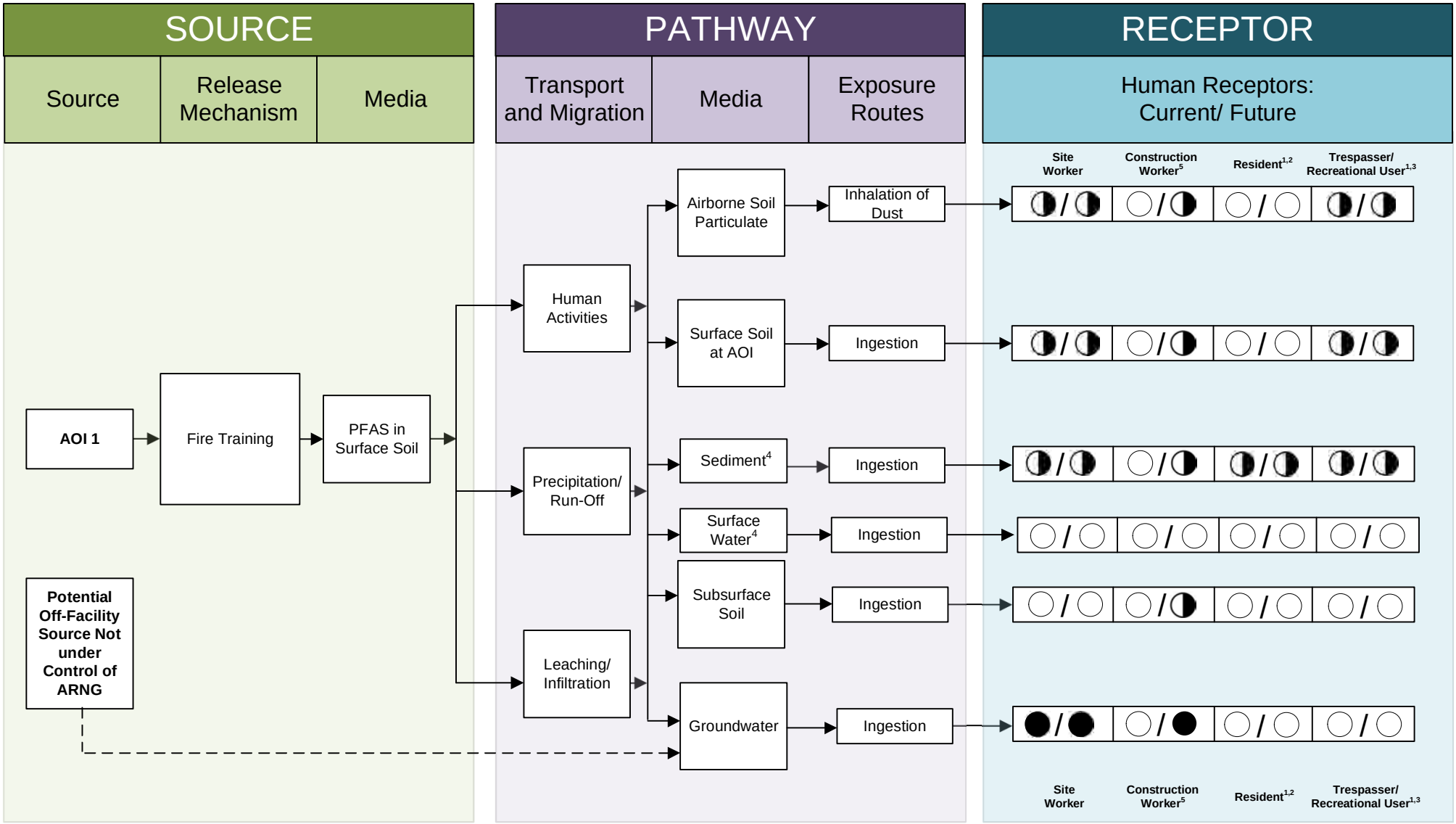
7.3 Surface Water and Sediment Exposure Pathway

The SI results for PFOA, PFOS, and PFBS in surface water and sediment were used to determine whether a potentially complete pathway exists between the source and potential receptors at the facility, based on the aforementioned criteria. At AOIs where surface water and sediment samples were not collected, data from downgradient AOIs or the SI results for PFOA, PFOS, and PFBS in soil and groundwater, in combination with knowledge of the fate and transport properties of PFAS, were used to determine whether a potentially complete pathway exists between the source and potential receptors.

7.3.1 Facility-Wide Surface Water and Sediment

Numerous unnamed tributaries and wetlands, along with Dickiebusch Lake and Putnam Brook, are located within Camp Smith. These freshwater features drain southward, towards the Hudson River. Dickiebusch Lake is on the northeastern end of Camp Smith; it covers approximately 6 acres and is connected to several streams, one of which is Putnam Brook. The headwaters of Putnam Brook flow into the northern-most portion of Dickiebusch Lake, which then drain south, bordering Camp Smith on the west, before draining into the Annsville Creek impoundment. Annsville Creek borders Camp Smith on the eastern side of the facility before turning southwest to border the southern portion. The confluence of the Annsville Creek and Putnam Brook at the Annsville Creek impoundment is tidally influenced, as this impoundment is connected to the Hudson River. This small bay/impoundment/tidal wetland was artificially created by a railroad berm.

PFOA and PFOS were detected in sediment at the facility, and no PFOA, PFOS, or PFBS were detected in surface water at the facility. Surface water and sediment screening levels for PFOA and PFOS are not established; therefore, the ingestion exposure pathways for PFOA and PFOS in sediment are considered potentially complete for site workers, construction workers, and trespassers. PFOA and PFOS were detected in sediment at CS-SD05 (representing the furthest downgradient sediment sample before exiting the facility boundaries); therefore, the ingestion exposure pathways for PFOA and PFOS in sediment are considered potentially complete for nearby offsite residents and recreational users. No PFOA, PFOS, or PFBS were detected in surface water; therefore, the ingestion exposure pathways for surface water are considered incomplete for site workers, construction workers, trespassers, and, offsite residents and recreational users. The CSM is presented in **Figure 7-1** through **Figure 7-3**.



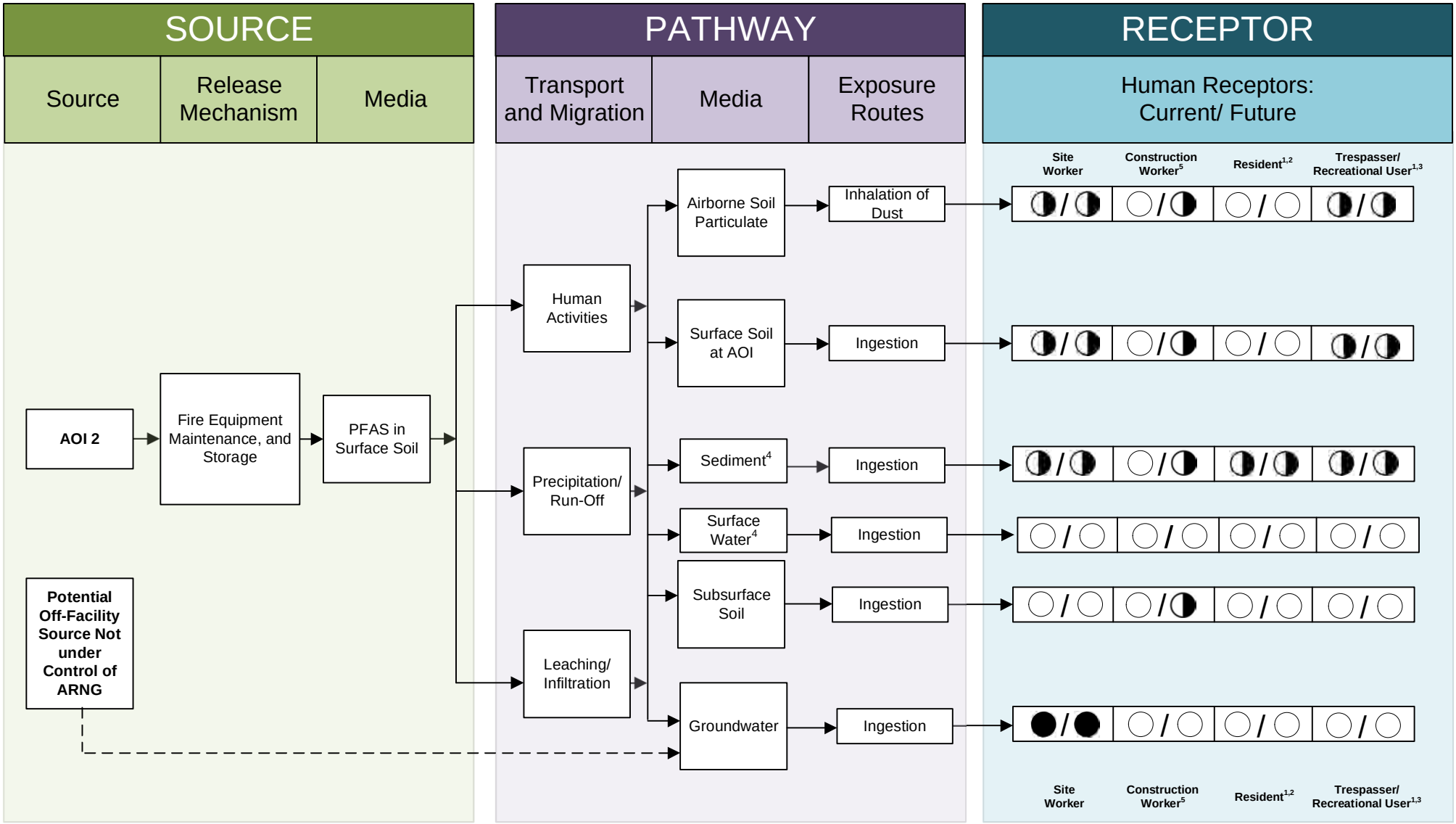
LEGEND

- Flow-Chart Stops
- Flow-Chart Continues
- Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Potentially Complete Pathway with Exceedance of SL

NOTES

1. The resident and recreational users refer to off-site receptors.
2. Inhalation of dust for off-site receptors is likely insignificant.
3. Human consumption of fish potentially affected by PFAS is possible.
4. Surface water and sediment pathways shown here represent facility-wide results.
5. No active construction was occurring during the SI field work.

Figure 7-1
Conceptual Site Model, AOI 1
Camp Smith



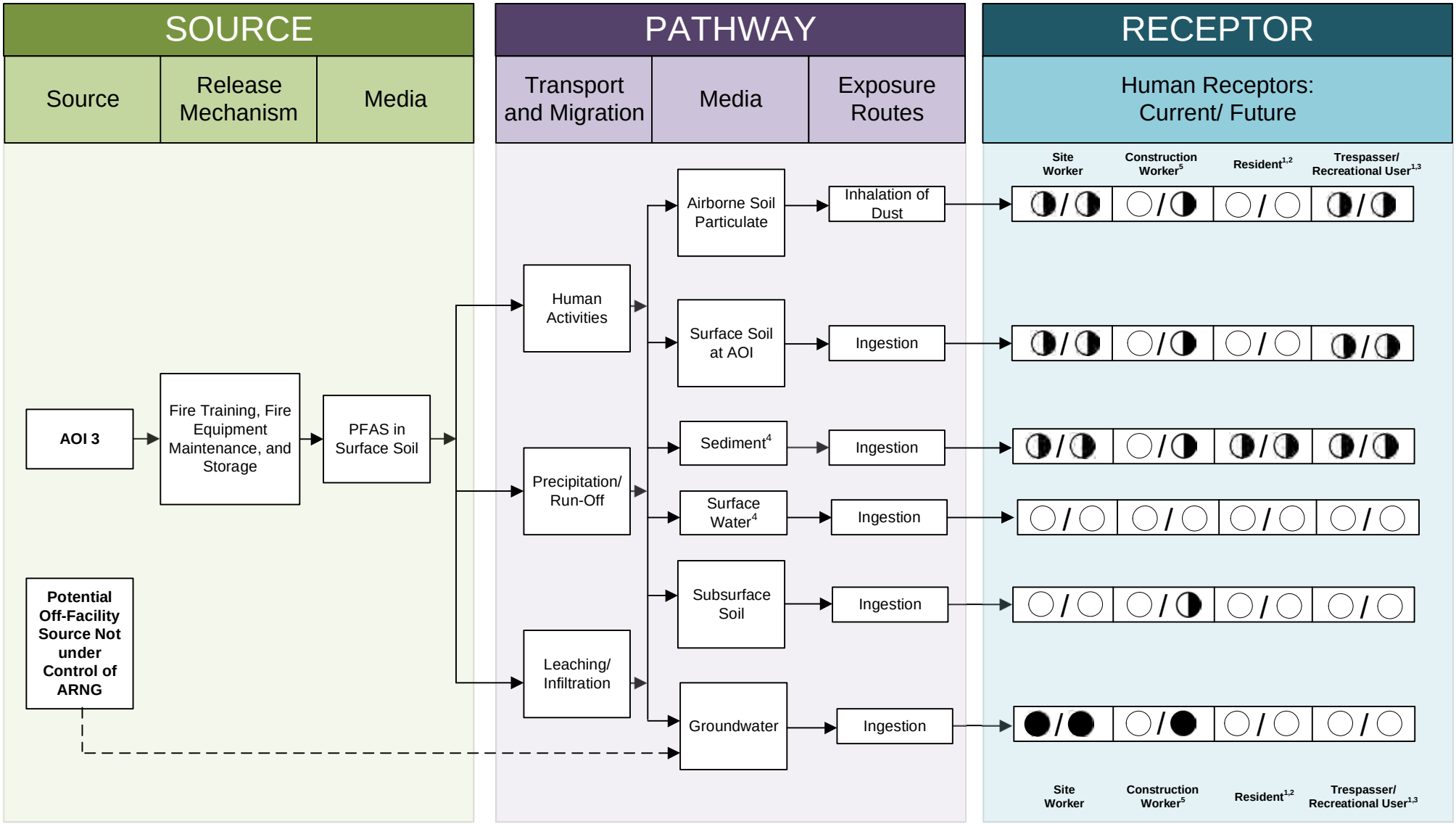
LEGEND

- Flow-Chart Stops
- Flow-Chart Continues
- Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Potentially Complete Pathway with Exceedance of SL

NOTES

1. The resident and recreational users refer to off-site receptors.
2. Inhalation of dust for off-site receptors is likely insignificant.
3. Human consumption of fish potentially affected by PFAS is possible.
4. Surface water and sediment pathways shown here represent facility-wide results.
5. No active construction was occurring during the SI field work.

Figure 7-2
Conceptual Site Model, AOI 2
Camp Smith



LEGEND

- Flow-Chart Stops
- Flow-Chart Continues
- Partial / Possible Flow
- Incomplete Pathway
- Potentially Complete Pathway
- Potentially Complete Pathway with Exceedance of SL

NOTES

1. The resident and recreational users refer to off-site receptors.
2. Inhalation of dust for off-site receptors is likely insignificant.
3. Human consumption of fish potentially affected by PFAS is possible.
4. Surface water and sediment pathways shown here represent facility-wide results.
5. No active construction was occurring during the SI field work.

Figure 7-3
Conceptual Site Model, AOI 3
Camp Smith

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8. Summary and Outcome

This section summarizes SI activities and findings. The most significant findings are summarized in this section and are reproduced directly or abstracted from information contained in this report. The outcome provides general and comparative interpretations of the findings relative to the SLs.

8.1 SI Activities

The SI field activities were conducted in two mobilizations. The first mobilization was conducted from 9 to 12 December 2019 and consisted of utility clearance, direct push boring and soil sample collection, temporary monitoring well installation, grab groundwater sample collection, and surface water and sediment sample collection. The second mobilization was conducted from 19 to 28 July 2021 and consisted of utility clearance, soil boring and soil sample collection via sonic drilling technology, permanent monitoring well installation, monitoring well development, low-flow groundwater sample collection, and land surveying. Field activities were conducted in accordance with the SI QAPP Addenda (AECOM, 2019; AECOM, 2021), except as noted in **Section 5.9**.

To fulfill the project DQOs set forth in the approved SI QAPP Addenda (AECOM, 2019; AECOM, 2021), samples were collected and analyzed for a subset of PFAS by LC/MS/MS compliant with QSM 5.3 Table B-15 (QSM 5.1 for Mobilization 1 data set), as follows. The 18 PFAS analyzed as part of the ARNG SI program are specified in **Section 5.8** of this Report.

Mobilization 1 –

- Fourteen (14) soil samples from six locations (soil borings or hand auger locations);
- Five grab groundwater samples from five temporary well locations;
- Eight sediment samples;
- Five surface water samples, all of which were co-located with five of the sediment samples; and
- Thirteen (13) quality assurance (QA) samples.

Mobilization 2 –

- Fifteen (15) soil samples from eight locations (soil boring and hand auger locations);
- Five low-flow groundwater samples from five permanent monitoring well locations; and
- 15 QA samples.

The information gathered during this investigation was used to determine if PFOA, PFOS, and/or PFBS were present at or above SLs. Additionally, the CSMs were refined to assess whether a potentially complete pathway exists between the source and potential receptors for potential exposure to PFOA, PFOS, and PFBS at the AOIs, which are described in **Section 7**.

8.2 SI Goals Evaluation

As described in **Section 4.2**, the SI activities were designed to achieve six main goals or DQOs. This section describes the SI goals and the conclusions that can be made for each based on the data collected during this investigation.

1. *Determine the presence or absence of PFOA, PFOS, and PFBS at or above SLs.*

PFOA, PFOS, and PFBS were detected at the facility in soil, groundwater, and sediment. PFOA, PFOS, and PFBS were detected at the source areas, as well as, downgradient between the source areas and facility drinking water wells. PFOA in groundwater at AOI 1 exceeded the SL of 40 ng/L (AOI 1-GW3), and PFOS in groundwater at AOIs 2 and 3 exceeded the SL of 40 ng/L (CS-MW003S). PFBS groundwater concentrations did not exceed the SL of 600 ng/L. The detected concentrations of PFOA, PFOS, and PFBS in soil samples from all AOIs were below the SLs.

2. *Develop information to potentially eliminate a release from further consideration because it is determined that it poses no significant threat to human health or the environment.*

Based on the results of the two SI mobilizations, there is not enough information to eliminate a potential release area from further consideration.

3. *Determine the potential need for a TCRA (applies to drinking water only). The primary actions that will be considered include provision of alternative water supplies or wellhead treatment.*

Based on the data collected during this SI, there doesn't appear to be any off-facility residential wells immediately downgradient of the facility; therefore, the pathway is incomplete between the source and off-facility residential receptors.

4. *Collect data to better characterize the release areas for more effective and rapid initiation of a RI (if determined necessary).*

The geological data collected as part of the SI indicate an environment with variable permeability and conductivity at Camp Smith. Soils range from well-graded gravel with sand to silts and clays (low conductivity). Sand-dominated beds range up to 50 feet in thickness, whereas soils with lower conductivity are deposited in thicknesses ranging up to 5 feet. These slight variations in grain size could have an impact on the vertical distribution of PFOA, PFOS, and PFBS in the subsurface and likely will impact fate and transport.

Depth to water at the facility ranges from approximately 0.5 to 79.76 feet bgs; however, this range in depths may be reflective of confined and semi-confided water bearing units. Groundwater flow direction is primarily to the south towards the Hudson River. Due to the shape of the valley, the unconsolidated aquifer underlying the facility is thickest in the center of the valley. The aquifer likely thins and becomes non-existent close to the margins of the valley (as the overburden thins out). Information gathered during the SI was limited for these areas, particularly with respect to groundwater flow. These geologic and hydrogeologic observations will inform development of DQOs and the technical approach for the RI.

5. *If PFOA, PFOS, and PFBS are determined to be present, aim to evaluate whether the concentrations can be attributed to on-facility or off-facility sources that were identified within 4 miles of the installation as part of the PA (e.g., fire stations, major manufacturers, other DoD facilities)*

Based upon the evaluation of groundwater and soil results in comparison to SLs, in combination with the groundwater flow direction analysis, the results of the SI indicate that the source of detected concentrations of PFOA, PFOS, and PFBS at the facility is likely attributable to ARNG activities.

6. *Determine whether a potentially complete pathway exists between the source and potential receptors and whether ARNG is the likely source of the contamination.*

Detections of PFOA, PFOS, and PFBS in soil and groundwater at source areas and downgradient of source area, in combination with known PFOA, PFOS, and PFBS detections in downgradient potable well samples on the facility, indicate there is a potentially complete pathway between source and receptor.

8.3 Outcome

Based on the CSMs developed and revised in light of the SI findings, there is potential for exposure to drinking water receptors from AOI 1, AOI 2, and AOI 3 from sources at the facility having resulted from historical DoD activities. Sample analytical concentrations collected during the SI were compared against the project SLs for PFOA, PFOS, and PFBS in soil and groundwater, as described in **Table 6-1**. A summary of the results of the SI data relative to the SLs is as follows:

- At AOI 1, PFOA in groundwater exceeded the SL of 40 ng/L, with a maximum concentration of 58.4 ng/L at location AOI 1-GW3. Based on the results of the SI, further evaluation of AOI 1 is warranted in a RI.
- At AOI 2 and 3, PFOS in groundwater exceeded the SL of 40 ng/L, with a maximum concentration of 147 ng/L at location CS-MW003S. Based on the results of the SI, further evaluation of AOI 2 and 3 is warranted in a RI.
- The detected concentrations of PFOA, PFOS, and PFBS in soil at all AOIs were below the SLs for the respective intervals.
- PFOA, PFOS, and PFBS were not detected in surface water. PFOA and PFOS were detected in sediment samples. There are no established SLs for sediment; therefore, these results are presented for informational purposes only.

Table 8-1 summarizes the SI results for soil and groundwater. Based on the CSMs developed and revised in light of the SI findings, there is potential for exposure to drinking water receptors caused by DoD activities at or adjacent to the facility.

Table 8-2 summarizes the rationale used to determine if an AOI should be considered for further investigation under CERCLA and undergo an RI. Based on the results of this SI, further evaluation is warranted in the RI for AOI 1, AOI 2, and AOI 3.

Table 8-1: Summary of Site Inspection Findings

AOI	Potential PFAS Release Area	Soil – Source Area	Groundwater – Source Area	Groundwater – Facility Boundary
1	Former Fire Pit	◐	●	NA
2	Former Fire Station	◐	●	NA
3	Former Airfield	◐	●	NA
3	Former NYS AFSA	◐	●	NA

Legend:
N/A = Not applicable
● = detected; exceedance of the screening levels
◐ = detected; no exceedance of the screening levels
○ = not detected

1787 **Table 8-2: Site Inspection Recommendations**

AOI	Description	Rationale	Future Action
1	Former Fire Pit	Exceedances of the SLs in groundwater at AOI 1. No exceedances of SLs in soil.	Proceed to RI
2	Former Fire Station	Exceedances of the SLs in groundwater at AOI 2. No exceedances of SLs in soil.	Proceed to RI
3	Former Airfield	Exceedances of the SLs in groundwater at AOI 3. No exceedances of SLs in soil.	Proceed to RI
3	Former NYS AFSA	Exceedances of the SLs in groundwater at AOI 3. No exceedances of SLs in soil.	Proceed to RI

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9. References

AECOM. 2018a. *Final Site Inspection Programmatic Uniform Federal Policy-Quality Assurance Project Plan, Perfluorooctane Sulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA) Impacted Sites ARNG Installations, Nationwide Contract No. W912DR-12-D-0014/ W912DR17F0192*. 9 March.

AECOM. 2018b. *Final Programmatic Accident Prevention Plan, Perfluorooctane Sulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA) Impacted Sites ARNG Installations, Nationwide Contract No. W912DR-12-D-0014/W912DR17F0192.* July.

AECOM. 2019a. *Final Preliminary Assessment Report, Camp Smith, Corlandt, New York, Perfluorooctanesulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA) Impacted Sites ARNG Installations, Nationwide. Contract No. W912DR-12-D-0014/W912DR17F0192*. June.

AECOM. 2019b. *Final Site Inspection Uniform Federal Policy-Quality Assurance Project Plan Addendum, Camp Smith, Corlandt, New York, Perfluorooctanesulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA) Impacted Sites ARNG Installations, Nationwide*. Contract No. W912DR-12-D-0014/W912DR17F0192. October.

AECOM. 2019c. *Final Site Safety and Health Plan, Camp Smith, Corlandt, New York, Perfluorooctanesulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA) Impacted Sites ARNG Installations, Nationwide.* Contract No. W912DR-12-D-0014/W912DR17F0192. December.

AECOM, 2021. *Final Supplemental Site Inspection Uniform Federal Policy-Quality Assurance Project Plan Addendum, Camp Smith, Corlandt, New York, Perfluorooctanesulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA) Impacted Sites ARNG Installations, Nationwide*. Contract No. W912DR-12-D-0014/W912DR17F0192. May.

Assistant Secretary of Defense. 2021. *Investigation Per- and Polyfluoroalkyl Substances within the Department of Defense Cleanup Program*. United States Department of Defense. 15 September.

Berkley, C.P., and Rice, M. 1919. *Geology of the West Point Quadrangle N.Y.* The University of the State of New York: New York State Museum.

Chazen Companies. 2003. *Northern Westchester County Groundwater Conditions Summary, Data Gaps, and Program Recommendations.* Contract C-PL-02-71.

DA. 2016. *Army Guidance to Address Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) Contamination*. August.

DA. 2018. *Army Guidance for Addressing Releases of Per- and Polyfluoroalkyl Substances.* 4 September.

DoD. 2019a. *Department of Defense (DoD), Department of Energy (DOE) Consolidated Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3*.

DoD. 2019b. *General Data Validation Guidelines. Environmental Data Quality Workgroup*. 4 November.

Ecology and Environment. 2008. *Camp Smith Training Site Water Quality Assessment Report, Cortland Manor, New York.* October.

Eric, J.H., and McNitt, J.R. 1954. *Geologic Map of the Phillips Mine-Camp Smith Area, Putnam and Westchester Counties, New York*. United States Department of the Interior Geological Survey.

Guelfo, J.L. and Higgins, C.P. 2013. *Subsurface transport potential of perfluoroalkyl acids ad aqueous film-forming foam (AFFF)-impacted sites*. Environmental Science and Technology 47(9): 4164-71.

Higgins, C.P., and Luthy, R.G. 2006. *Sorption of perfluorinated surfactants on sediments*. Environmental Science and Technology 40 (23): 7251-7256.

Isachsen, Y.W., Landing, E., Lauber, J.M., Rickard, L.V., and Rochers, W.B. 2000. *Geology of New York. A Simplified Account.* New York State Geological Survey.

ITRC. 2018. *Environmental Fate ant Transport for Per- and Polyfluoroalkyl Substances*. March.

NOAA. 2018. *1981-2010 Climate Normals for Long Island, NY US*. Accessed 22 August 2018 at http://www.ncdc.noaa.gov/cdo-web/datatools/normals.

NYARNG. 2015. *Environmental Assessment Camp Smith Access Control alteration and Rehabilitation MILCON: 361103 Access Control Building*. August

NYSDMNA. 2018. *Camp Smith National Guard Training Site, History*. Accessed October 2018 at https://dmna.ny.gov/campsmith/?page=history.

USACE. 2016. *Technical Project Planning Process*, EM-200-1-2. 26 February.

USEPA. 1980. *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*.

USEPA. 1994. *National Oil and Hazardous Substances Pollution Contingency Plan (Final Rule)*. 40 CFR Part 300; 59 Federal Register 47384. September.

USEPA. 2001. *Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments)*. December.

USEPA. 2005. Federal Facilities Remedial Site Inspection Summary Guide.

USEPA. 2006. *Guidance on Systematic Planning using the Data Quality Objectives Process*. February.

USEPA. 2016a. *Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA). Office of Water (4304T).* Health and Ecological Criteria Division, Washington, DC 20460. US USEPA Document Number: 822-R-16-005. May 2016.

USEPA. 2016b. *Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS). Office of Water (4304T).* Health and Ecological Criteria Division, Washington, DC 20460. US USEPA Document Number: 822-R-16-004. May 2016.

USEPA. 2017a. *UCMR 3 (2013-2015) Occurrence Data by State. Occurrence Data for the Unregulated Contaminant Monitoring Rule.* Accessed 9 July 2019 at https://www.epa.gov/dwucmr/occurrence-data-unregulated-contaminant-monitoring-rule. January.

USEPA. 2017b. *National Functional Guidelines for Organic Superfund Data Review*. OLEM 9355.0-136, EPA-540-R-2017-002. Office of Superfund Remediation and Technology Innovation. January.

USFWS. 2021. *Information for Planning and Consultation, Explore Location: Westchester County, New York*. Accessed 19 October 2021 at https://ecos.fws.gov/ipac/location/index.

USGS. 1995. *Computation of bedrock-aquifer recharge in northern Westchester County, New York, and chemical quality of water from selected bedrock wells.* Water-Resources Investigations Report 92-4157.

USGS. 1998. *Hydrogeology of the Croton-Ossining area, Westchester County, New York.* Water-Resources Investigations Report 87-4159.

Xiao, F., Simcik, M. F., Halbach, T. R., and Gulliver, J. S. 2015, *Perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA) in soils and groundwater of a U.S. metropolitan area: Migration and implications for human exposure.* Water Research 72: 64-74.

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Appendix A
Data Validation Reports

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DATA VALIDATION REPORT - Level III Review

SDG No.:	**219071222+219112207+219 121351**	**Analysis:**	**Per- and Polyfluoroalkyl Substances**
Laboratory:	**GCAL**	**Project:**	**Camp Smith**
Reviewer:	**Devon Chicoine**	**Date:**	**March 5th, 2020**

This report presents the findings of a review of the referenced data. The report consists of this summary, a listing of the samples included in the review, copies of data reports, data review worksheets, supporting documentation, and an explanation of the data qualifying flags employed. The review performed is based on the specifics of the analytical method referenced and provisions of the approved project-specific work plan; and, qualified according to the *Contract Laboratory Program National Functional Guidelines* (NFG) *for Superfund Organic Methods Data Review*, EPA-540-R-2017-002, January 2017, Modifications reflect the level of review requested, the specifications of the project-specific QAPP, and the specifics of the analytical methods employed.

Major Anomalies: The following field and quality control (QC) samples displayed recoveries outside the QC limits of 50-150% for extraction internal standards (EIS):

Field Sample	EIS	Associated Target Compound(s)	Area Count (%)
AOI 3-GW1	M2PFTeDA	PFTeDA, PFTrDA	**36**
AOI 3-GW1-FD			**7**
	MPFDoA	PFDoA	**33**
AOI 1-SB1-6-8	M2PFTeDA	PFTeDA, PFTrDA	**25**
AOI 1-SB2-0-0.5-1			**34**
ERB-121019CS			**4**
ERB-121119WL			**1**
	M7PFUdA	PFUdA	**26**
	MPFDoA	PFDoA	**12**
	d3-NMeFOSAA	NMeFOSAA	**46**
	d5-NEtFOSAA	NEtFOSAA	**43**
ERB-121119HA	M2PFTeDA	PFTeDA, PFTrDA	**10**
CS-SD05-0-1			**14**
AOI 3-GW2			**36**
FRB-121119			**7**
	MPFDoA	PFDoA	**31**
AOI 1-GW3	M2PFTeDA	PFTeDA, PFTrDA	**26**
AOI 1-GW1			**27**
AOI 1-GW2			**46**
AOI 1 GW2MS			**13**
AOI 1-GW2MSD			**6**
	MPFDoA	PFDoA	**33**
CS-SW05	M2PFTeDA	PFTeDA, PFTrDA	**0.20**
	M6PFDA	PFDA, PFDS	**49**
	M7PFUdA	PFUdA	**23**
	M8FOSA	FOSA	**22**
	MPFDoA	PFDoA	**7**
	d3-NMeFOSAA	NMeFOSAA	**31**
	d5-NEtFOSAA	NEtFOSAA	**21**
CS-SW01	M2PFTeDA	PFTeDA, PFTrDA	**4**
	M7PFUdA	PFUdA	**44**
CS-SW01	MPFDoA	PFDoA	**29**

Field Sample	EIS	Associated Target Compound(s)	Area Count (%)
CS-SD01-0-1	M2 8:2 FTS	8:2 FTS	**24**
	M2PFTeDA	PFTeDA, PFTrDA	**4**
	M6PFDA	PFDA, PFDS	**23**
	M7PFUdA	PFUdA	**12**
	M8FOSA	FOSA	**10**
	M8PFOS	PFOS	**39**
	M9PFNA	PFNA, PFNS	**49**
	MPFDoA	PFDoA	**8**
	d3-NMeFOSAA	NMeFOSAA	**22**
	d5-NEtFOSAA	NEtFOSAA	**11**
CS-SW02	M2PFTeDA	PFTeDA, PFTrDA	**4**
	M7PFUdA	PFUdA	**47**
	MPFDoA	PFDoA	**24**
CS-SD02-0-1	M2PFTeDA	PFTeDA, PFTrDA	**7**
	M8FOSA	FOSA	**21**
	MPFDoA	PFDoA	**45**
CS-SW03	M2PFTeDA	PFTeDA, PFTrDA	**6**
	MPFDoA	PFDoA	**40**
CS-SD03-0-1	M2PFTeDA	PFTeDA, PFTrDA	**45**
	M7PFUdA	PFUdA	**44**
	d5-NEtFOSAA	NEtFOSAA	**174**
CS-SW04	M2PFTeDA	PFTeDA, PFTrDA	**0.80**
	M7PFUdA	PFUdA	**41**
	M8FOSA	FOSA	**47**
	MPFDoA	PFDoA	**15**
	d5-NEtFOSAA	NEtFOSAA	**40**
CS-SD04-0-1	M2PFTeDA	PFTeDA, PFTrDA	**13**
CS-SD07-0-1	M2PFTeDA	PFTeDA, PFTrDA	**45**
	MPFDoA	PFDoA	**38**
	d5-NEtFOSAA	NEtFOSAA	**43**
CS-SD08-0-1	M2 8:2 FTS	8:2 FTS	**47**
	M2PFTeDA	PFTeDA, PFTrDA	**25**
	M6PFDA	PFDA, PFDS	**49**
	M7PFUdA	PFUdA	**37**
	M8FOSA	FOSA	**12**
	MPFDoA	PFDoA	**27**
ERB-121219SS	M2PFTeDA	PFTeDA, PFTrDA	**13**
MB 1943742			**31**
MB1992874			**12**

Non-detect field sample results associated with EIS recoveries less than 10% were initially flagged "X,i", but should be considered for inclusion in the data set since PFAS compounds are quantitated based on a normalized 100% internal standard percent recovery for this method and in matrix spike pairs (MS/MSD) with low area counts and the target compounds were shown to be able to be recovered. The positive field sample results associated with low internal standard area counts were qualified J+,i unless subsequently qualified due to a blank detection, while non-detects were qualified UJ, i. The positive field sample results associated with high internal standard area counts were qualified J-, i were non-detects.

Minor Anomalies: The following blanks displayed concentrations greater than the DL:

Sample ID	Date	Batch	Analyte	Concentration	Units
ERB-121019CS	12/10/19	673520	PFOS	4.09	ng/L
			PFPeA	2.80	
ERB-121219SS	12/12/19	673520	PFOS	2.35	
			PFPeA	3.31	
FRB-121119	12/11/19	673520	PFOS	3.01	
			PFPeA	2.57	
IBLK 2191130A_12	11/30/19	672387	PFOS	2.16	ng/L
MB1992871	12/19/19	673519	PFOS	0.390	ug/kg
			PFBA	0.242	

The positive associated field sample results less than five times the concentration found in the blanks were qualified "U", with associated reason codes applied depending on which blank required qualification of the result: "bl" for method blank detection, "be" for equipment blank detection, and "bf" for field blank detection. When appropriate, the quantitation limits were elevated to the concentrations detected. The laboratory control spike pairs (LCS/LCSD) displayed percent recoveries greater than the laboratory QC limit of 130%:

Prep Batch	Analyte	LCS Recovery (%)	LCSD Recovery (%)
673520	PFTrDA	**319**	**381**
672387	6:2 FTS	117	**152**
	8:2 FTS	**142**	**158**
	PFOS	123	**154**

The positive associated field sample results associated with a positive bias were qualified J+,i unless previously qualified due to blank contamination. The field sample results associated with the high bias except for PFOS were non-detect; no data qualifying action was required. The following matrix spike pairs (MS/MSD) displayed percent recoveries outside the laboratory QC limits of 70-130%:

Batch	Parent Sample	Analyte	MS Recovery (%)	MSD Recovery (%)
673518	AOI 2-SB1-21-23	NetFOSAA	**137**	**150**
		PFOS	110	**146**
673520	AOI 1-GW2	PFTrDA	**227**	**253**
		PFOS	90	**136**
		PFOA	76	**59**

The positive parent sample results associated with the positive biases were qualified J+,m. Field sample AOI 1-GW2 PFOS results was already qualified due to LCS anomaly. The parent sample results associated with the negative biases were positive and were qualified J-,m, while non-detects were qualified UJ,m. The parent sample AOI 2-SB1-21-23 result associated with the positive bias was non-detect; no data qualifying action was required. In addition, the MS/MSD performed on field sample AOI 2-SB1-21-23 and AOI 1-GW2 displayed a relative percent difference greater than the QC limit of 30% for PFOS at 36% and 35%, respectively, no further data qualifying action was required.

The holding time for pH analysis is 'immediate', all field samples analyzed for pH were qualified J,h.

Correctable Anomalies: None.

Comments: On the basis of this evaluation, the laboratory appears to have followed the specified method, with the exception of anomalies discussed previously. If a given fraction was not discussed, all quality control criteria reviewed were within acceptable limits. All data are usable, as qualified, for their intended purposed based on the quality control data reviewed.

Signed: Devon Chicoine

Devon Chicoine

Summary of Qualified Results

Sample ID	Analyte	Qualifier	Reason Code
AOI 1-GW1	PFPeA	U	bf
AOI 1-GW1	PFTeDA	UJ	i
AOI 1-GW1	PFTrDA	UJ	i
AOI 1-GW2	PFOS	J+	l
AOI 1-GW2	PFPeA	U	bf
AOI 1-GW2	PFTeDA	UJ	i
AOI 1-GW2	PFTrDA	UJ	i
AOI 1-GW2	PFOA	J-	m
AOI 1-GW3	PFPeA	U	bf
AOI 1-GW3	PFTeDA	UJ	i
AOI 1-GW3	PFTrDA	UJ	i
AOI 1-SB1-6-8	PFTeDA	UJ	i
AOI 1-SB1-6-8	PFTrDA	UJ	i
AOI 1-SB2-0.5-1	PFTeDA	UJ	i
AOI 1-SB2-0.5-1	PFTrDA	UJ	i
AOI 3-GW1	PFTeDA	UJ	i
AOI 3-GW1	PFTrDA	UJ	i
AOI 3-GW1-FD	PFDoA	UJ	i
AOI 3-GW1-FD	PFTeDA	UJ	i
AOI 3-GW1-FD	PFTrDA	UJ	i
AOI 3-GW2	PFPeA	U	bf
AOI 3-GW2	PFTeDA	UJ	i
AOI 3-GW2	PFTrDA	UJ	i
CASCADE-DECONWATER	PFOS	U	bl
CS-SD01-0-1	PFOS	J+	i
CS-SD01-0-1	PFUnDA	UJ	i
CS-SD01-0-1	NMeFOSAA	UJ	i
CS-SD01-0-1	NEtFOSAA	UJ	i
CS-SD01-0-1	PFDoA	UJ	i
CS-SD01-0-1	PFDA	UJ	i
CS-SD01-0-1	PFNA	UJ	i
CS-SD01-0-1	PFTeDA	UJ	i
CS-SD01-0-1	8:2 FTS	UJ	i
CS-SD01-0-1	PFTrDA	UJ	i
CS-SD02-0-1	PFDoA	UJ	i
CS-SD02-0-1	PFTeDA	UJ	i
CS-SD02-0-1	PFTrDA	UJ	i
CS-SD03-0-1	PFUnDA	UJ	i
CS-SD03-0-1	PFTeDA	UJ	i

Sample ID	Analyte	Qualifier	Reason Code
CS-SD03-0-1	PFTrDA	UJ	i
CS-SD04-0-1	PFOS	U	bl
CS-SD04-0-1	PFTeDA	UJ	i
CS-SD04-0-1	PFTrDA	UJ	i
CS-SD05-0-1	PFTeDA	UJ	i
CS-SD05-0-1	PFTrDA	UJ	i
CS-SD06-0-1	PFBA	U	bl
CS-SD07-0-1	NEtFOSAA	UJ	i
CS-SD07-0-1	PFDoA	UJ	i
CS-SD07-0-1	PFTeDA	UJ	i
CS-SD07-0-1	PFTrDA	UJ	i
CS-SD08-0-1	PFUnDA	UJ	i
CS-SD08-0-1	PFDoA	UJ	i
CS-SD08-0-1	PFDA	UJ	i
CS-SD08-0-1	PFTeDA	UJ	i
CS-SD08-0-1	8:2 FTS	UJ	i
CS-SD08-0-1	PFTrDA	UJ	i
CS-SW01	PFOS	U	be
CS-SW01	PFUnDA	UJ	i
CS-SW01	PFDoA	UJ	i
CS-SW01	PFTeDA	UJ	i
CS-SW01	PFTrDA	UJ	i
CS-SW02	PFUnDA	UJ	i
CS-SW02	PFDoA	UJ	i
CS-SW02	PFTeDA	UJ	i
CS-SW02	PFTrDA	UJ	i
CS-SW03	PFOS	U	be
CS-SW03	PFPeA	U	bf
CS-SW03	PFDoA	UJ	i
CS-SW03	PFTeDA	UJ	i
CS-SW03	PFTrDA	UJ	i
CS-SW04	PFOS	U	be
CS-SW04	PFUnDA	UJ	i
CS-SW04	NEtFOSAA	UJ	i
CS-SW04	PFDoA	UJ	i
CS-SW04	PFTeDA	UJ	i
CS-SW04	PFTrDA	UJ	i
CS-SW05	PFOS	U	be
CS-SW05	PFUnDA	UJ	i
CS-SW05	NMeFOSAA	UJ	i

Sample ID	Analyte	Qualifier	Reason Code
CS-SW05	PFPeA	U	bf
CS-SW05	NEtFOSAA	UJ	i
CS-SW05	PFDoA	J-	i
CS-SW05	PFDA	UJ	i
CS-SW05	PFTeDA	UJ	i
CS-SW05	PFTrDA	UJ	i
ERB-121019CS	PFTeDA	UJ	i
ERB-121019CS	PFTrDA	UJ	i
ERB-121119HA	PFTeDA	UJ	i
ERB-121119HA	PFTrDA	UJ	i
ERB-121119WL	PFUnDA	UJ	i
ERB-121119WL	NMeFOSAA	UJ	i
ERB-121119WL	NEtFOSAA	UJ	i
ERB-121119WL	PFDoA	UJ	i
ERB-121119WL	PFTeDA	UJ	i
ERB-121119WL	PFTrDA	UJ	i
ERB-121219SS	PFTeDA	UJ	i
ERB-121219SS	PFTrDA	UJ	i
FRB-121119	PFDoA	UJ	i
FRB-121119	PFTeDA	UJ	i
FRB-121119	PFTrDA	UJ	i
AOI 1-SB1-0.5-1	pH	J	h
AOI 1-SB1-12-14	pH	J	h
AOI 1-SB1-6-8	pH	J	h
AOI 1-SB2-0.5-1	pH	J	h
AOI 1-SB3-0.5-1	pH	J	h
AOI 1-SB3-1-2	pH	J	h

Camp Smith

Laboratory: GCAL

Job: 60552172 SDG#: 219071222+219112207+219121351

Sample ID	Client ID	Sample Type	Sample Date	Matrix	PFAS - Method 537M	Wet Chem
21907122201	CS-Decon Water	Decon Water	7/10/2019	Aqueous	X	
21911220701	CASCADE-DECONWATER 11/21	Decon Water	11/21/2019	Aqueous	X	
21912135101	AOI 3-GW1	Field Sample	12/10/2019	Aqueous	X	
21912135102	AOI 3-GW1-FD	Field Duplicate	12/10/2019	Aqueous	X	
21912135103	AOI 1-SB1-0.5-1	Field Sample	12/11/2019	Soil	X	X
21912135104	AOI 1-SB1-6-8	Field Sample	12/11/2019	Soil	X	X
21912135105	AOI 1-SB1-12-14	Field Sample	12/11/2019	Soil	X	X
21912135106	AOI 1-SB2-0.5-1	Field Sample	12/11/2019	Soil	X	X
21912135107	ERB-121019CS	Equipment Blank	12/10/2019	Aqueous	X	
21912135108	ERB-121119WL	Equipment Blank	12/11/2019	Aqueous	X	
21912135109	AOI 1-SB3-0.5-1	Field Sample	12/11/2019	Soil	X	X
21912135110	AOI 1-SB3-1-2	Field Sample	12/11/2019	Soil	X	X
21912135111	ERB-121119HA	Equipment Blank	12/11/2019	Aqueous	X	
21912135112	CS-SD05-0-1	Field Sample	12/11/2019	Sediment	X	
21912135113	AOI 2-SB1-0.5-1	Field Sample	12/10/2019	Soil	X	
21912135114	AOI 2-SB1-11-13	Field Sample	12/10/2019	Soil	X	
21912135115	AOI 2-SB1-21-23	Field Sample	12/10/2019	Soil	X	
21912135116	AOI 2-SB1-21-23MS	Matrix Spike	12/10/2019	Soil	X	
21912135117	AOI 2-SB1-21-23MSD	Matrix Spike Duplicate	12/10/2019	Soil	X	
21912135118	AOI 3-SB1-0.5-1	Field Sample	12/10/2019	Soil	X	
21912135119	AOI 3-SB1-1-2	Field Sample	12/10/2019	Soil	X	
21912135120	AOI 3-SB1-1-2-FD	Field Sample	12/10/2019	Soil	X	
21912135121	AOI 3-SB2-0.5-1	Field Sample	12/10/2019	Soil	X	
21912135122	AOI 3-SB2-7-9	Field Sample	12/10/2019	Soil	X	
21912135123	AOI 3-SB2-15-17	Field Sample	12/10/2019	Soil	X	
21912135124	AOI 3-GW2	Field Sample	12/10/2019	Aqueous	X	
21912135125	FRB-121119	Field Rinse Blank	12/11/2019	Aqueous	X	
21912135126	AOI 1-GW3	Field Sample	12/11/2019	Aqueous	X	
21912135127	AOI 1-GW1	Field Sample	12/11/2019	Aqueous	X	
21912135128	AOI 1-GW2	Field Sample	12/11/2019	Aqueous	X	
21912135129	AOI 1-GW2MS	Matrix Spike	12/11/2019	Aqueous	X	
21912135130	AOI 1-GW2MSD	Matrix Spike Duplicate	12/11/2019	Aqueous	X	
21912135131	CS-SW05	Field Sample	12/11/2019	Aqueous	X	
21912135132	CS-SW01	Field Sample	12/12/2019	Aqueous	X	
21912135133	CS-SD01-0-1	Field Sample	12/12/2019	Sediment	X	
21912135134	CS-SW02	Field Sample	12/12/2019	Aqueous	X	
21912135135	CS-SD02-0-1	Field Sample	12/12/2019	Sediment	X	
21912135136	CS-SW03	Field Sample	12/12/2019	Aqueous	X	
21912135137	CS-SD03-0-1	Field Sample	12/12/2019	Sediment	X	
21912135138	CS-SW04	Field Sample	12/12/2019	Aqueous	X	
21912135139	CS-SD04-0-1	Field Sample	12/12/2019	Sediment	X	
21912135140	CS-SD06-0-1	Field Sample	12/12/2019	Sediment	X	
21912135141	CS-SD07-0-1	Field Sample	12/12/2019	Sediment	X	
21912135142	CS-SD08-0-1	Field Sample	12/12/2019	Sediment	X	
21912135143	ERB-121219SS	Equipment Blank	12/12/2019	Aqueous	X	

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Field Duplicates

Client Sample ID:				AOI 3-SB1-1-2	AOI 3-SB1-1-2-FD				
Date Sampled:				12/10/19	12/10/19				
	Units	LOQ	5x LOQ	Sample Conc	Duplicate Conc	% RPD	Delta	4x LOQ	Pass/ Fail
Perfluorinated Alkyl Substances									
PFOS	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass
PFUnDA	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass
NMeFOSAA	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass
PFPeA	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass
6:2 FTS	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass
NEtFOSAA	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass
PFHxA	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass
PFDoA	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass
PFOA	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass
PFDA	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass
PFHxS	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass
PFBA	ug/kg	1.22	6.1	0.304 J	0.207 J	38.0%	**0.097**	4.88	Pass
PFBS	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass
PFHpA	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass
PFNA	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass
PFTeDA	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass
8:2 FTS	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass
PFTrDA	ug/kg	1.22	6.1	0.488 U	0.468 U	4.2%	**0.020**	4.88	Pass

Control limit [sample]>5xLOQ use 50%
[sample]<5xLOQ use Delta<4xLOQ

Camp Smith
Field Duplicates

Client Sample ID:				AOI 3-GW1	AOI 3-GW1-FD				
Date Sampled:				12/10/19	12/10/19				
	Units	LOQ	5x LOQ	Sample Conc	Duplicate Conc	% RPD	Delta	2x LOQ	Pass/ Fail
Perfluorinated Alkyl Substances									
PFOS	ng/L	10	50.0	15.3	14.8	3.3%	**0.5**	20.00	Pass
PFUnDA	ng/L	10	50.0	4 U	4 U	0.0%	**0**	20.00	Pass
NMeFOSAA	ng/L	10	50.0	8 U	8 U	0.0%	**0**	20.00	Pass
PFPeA	ng/L	10	50.0	21.9	22.2	1.4%	**0.3**	20.00	Pass
6:2 FTS	ng/L	10	50.0	4 U	4 U	0.0%	**0**	20.00	Pass
NEtFOSAA	ng/L	10	50.0	8 U	8 U	0.0%	**0**	20.00	Pass
PFHxA	ng/L	10	50.0	22	21.3	3.2%	**0.7**	20.00	Pass
PFDoA	ng/L	10	50.0	4 U	4 U	0.0%	**0**	20.00	Pass
PFOA	ng/L	10	50.0	35.5	39.9	11.7%	**4.4**	20.00	Pass
PFDA	ng/L	10	50.0	4 U	4 U	0.0%	**0**	20.00	Pass
PFHxS	ng/L	10	50.0	6.19 J	5.93 J	4.3%	**0.26**	20.00	Pass
PFBA	ng/L	10	50.0	12.9	12.5	3.1%	**0.4**	20.00	Pass
PFBS	ng/L	10	50.0	3.77 J	3.69 J	2.1%	**0**	20.00	Pass
PFHpA	ng/L	10	50.0	8.83 J	8.09 J	8.7%	**0.74**	20.00	Pass
PFNA	ng/L	10	50.0	3.57 J	4.25 J	17.4%	**0.68**	20.00	Pass
PFTeDA	ng/L	10	50.0	4 U	4 U	0.0%	**0**	20.00	Pass
8:2 FTS	ng/L	10	50.0	4 U	4 U	0.0%	**0**	20.00	Pass
PFTrDA	ng/L	10	50.0	4 U	4 U	0.0%	**0**	20.00	Pass

Control limit [sample]>5xLOQ use 30%
[sample]<5xLOQ use Delta<2xLOQ

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219071222	Client Sample ID:	CS-Decon Water
Collect Date:	07/10/19 Time: 1449	GCAL Sample ID:	21907122201
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	150 mL	Lab File ID:	2190717A_62.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	07/16/19	Analysis Date:	07/18/19 Time: 0642
Prep Batch:	663752	Analytical Batch:	663954
Prep Method:	537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
757124-72-4	4:2 FTS	3.33	U	1.27	3.33	8.33
27619-97-2	6:2 Fluorotelomer sulfonate	3.33	U	1.49	3.33	8.33
39108-34-4	8:2 Fluorotelomer sulfonate	3.33	U	1.36	3.33	8.33
2991-50-6	NEtFOSAA	6.67	U	4.48	6.67	8.33
2355-31-9	NMeFOSAA	6.67	U	3.83	6.67	8.33
375-92-8	Perfluoro-1-heptanesulfonate	3.33	U	1.68	3.33	8.33
375-73-5	Perfluorobutanesulfonic acid	3.07	J	1.23	3.33	8.33
375-22-4	Perfluorobutanoic acid	2.79	J	1.78	3.33	8.33
335-77-3	Perfluorodecane Sulfonate	3.33	U	1.81	3.33	8.33
335-76-2	Perfluorodecanoic acid	3.33	U	1.38	3.33	8.33
307-55-1	Perfluorododecanoic acid	3.33	U	2.04	3.33	8.33
375-85-9	Perfluoroheptanoic acid	2.23	J	1.54	3.33	8.33
355-46-4	Perfluorohexanesulfonic acid	22.9		1.37	3.33	8.33
307-24-4	Perfluorohexanoic acid	8.29	J	1.62	3.33	8.33
375-95-1	Perfluorononanoic acid	3.33	U	1.40	3.33	8.33
754-91-6	Perfluorooctane Sulfonamide	3.33	U	2.19	3.33	8.33
1763-23-1	Perfluorooctane Sulfonate	32.0		1.42	3.33	8.33
335-67-1	Perfluorooctanoic acid	3.80	J	1.50	3.33	8.33
2706-90-3	Perfluoropentanoic acid	7.86	J	1.96	3.33	8.33
376-06-7	Perfluorotetradecanoic acid	3.33	U	2.30	3.33	8.33
72629-94-8	Perfluorotridecanoic acid	3.33	U	2.13	3.33	8.33
2058-94-8	Perfluoroundecanoic acid	3.33	U	1.55	3.33	8.33
474511-07-4	PFNS	3.33	U	1.76	3.33	8.33
2706-91-4	PFPeS	2.39	J	1.73	3.33	8.33

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219112207	Client Sample ID:	CASCADE-DECONWATER 11/21
Collect Date:	11/21/19 Time: 1145	GCAL Sample ID:	21911220701
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	150 mL	Lab File ID:	2191130A_42.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	11/24/19	Analysis Date:	11/30/19 Time: 1810
Prep Batch:	671951	Analytical Batch:	672387
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	3.33	U	1.49	3.33	8.33
39108-34-4	8:2 Fluorotelomer sulfonate	3.33	U	1.36	3.33	8.33
2991-50-6	NEtFOSAA	6.67	U	4.48	6.67	8.33
2355-31-9	NMeFOSAA	6.67	U	3.83	6.67	8.33
375-73-5	Perfluorobutanesulfonic acid	3.33	U	1.23	3.33	8.33
375-22-4	Perfluorobutanoic acid	6.86	J	1.78	3.33	8.33
335-76-2	Perfluorodecanoic acid	3.33	U	1.38	3.33	8.33
307-55-1	Perfluorododecanoic acid	3.33	U	2.04	3.33	8.33
375-85-9	Perfluoroheptanoic acid	3.33	U	1.54	3.33	8.33
355-46-4	Perfluorohexanesulfonic acid	3.33	U	1.37	3.33	8.33
307-24-4	Perfluorohexanoic acid	1.65	J	1.62	3.33	8.33
375-95-1	Perfluorononanoic acid	3.33	U	1.40	3.33	8.33
1763-23-1	Perfluorooctane Sulfonate	1.86	J	1.42	3.33	8.33
335-67-1	Perfluorooctanoic acid	3.33	U	1.50	3.33	8.33
2706-90-3	Perfluoropentanoic acid	3.33	U	1.96	3.33	8.33
376-06-7	Perfluorotetradecanoic acid	3.33	U	2.30	3.33	8.33
72629-94-8	Perfluorotridecanoic acid	3.33	U	2.13	3.33	8.33
2058-94-8	Perfluoroundecanoic acid	3.33	U	1.55	3.33	8.33

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 3-GW1
Collect Date:	12/10/19 Time: 1455	GCAL Sample ID:	21912135101
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200103B_67.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/04/20 Time: 0333
Prep Batch:	673520	Analytical Batch:	674727
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ng/L*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	3.77	J	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	12.9		2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	8.83	J	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	6.19	J	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	22.0		1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	3.57	J	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	15.3		1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	35.5		1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	21.9		2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 3-GW1-FD
Collect Date:	12/10/19 Time: 1455	GCAL Sample ID:	21912135102
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200103B_68.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/04/20 Time: 0344
Prep Batch:	673520	Analytical Batch:	674727
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	3.69	J	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	12.5		2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	8.09	J	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	5.93	J	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	21.3		1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.25	J	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	14.8		1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	39.9		1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	22.2		2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB1-0.5-1
Collect Date:	12/11/19 Time: 0950	GCAL Sample ID:	21912135103
Matrix:	Solid % Moisture: 14.1	Instrument ID:	QQQ1
Sample Amt:	5.4 g	Lab File ID:	2200102A_48.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 1953
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ug/kg*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.431	U	0.183	0.431	1.08
39108-34-4	8:2 Fluorotelomer sulfonate	0.431	U	0.280	0.431	1.08
2991-50-6	NEtFOSAA	0.431	U	0.205	0.431	1.08
2355-31-9	NMeFOSAA	0.431	U	0.302	0.431	1.08
375-73-5	Perfluorobutanesulfonic acid	0.431	U	0.129	0.431	1.08
375-22-4	Perfluorobutanoic acid	0.431	U	0.140	0.431	1.08
335-76-2	Perfluorodecanoic acid	0.431	U	0.129	0.431	1.08
307-55-1	Perfluorododecanoic acid	0.431	U	0.216	0.431	1.08
375-85-9	Perfluoroheptanoic acid	0.431	U	0.140	0.431	1.08
355-46-4	Perfluorohexanesulfonic acid	0.431	U	0.151	0.431	1.08
307-24-4	Perfluorohexanoic acid	0.431	U	0.162	0.431	1.08
375-95-1	Perfluorononanoic acid	0.431	U	0.097	0.431	1.08
1763-23-1	Perfluorooctane Sulfonate	0.260	J	0.194	0.431	1.08
335-67-1	Perfluorooctanoic acid	0.431	U	0.162	0.431	1.08
2706-90-3	Perfluoropentanoic acid	0.431	U	0.162	0.431	1.08
376-06-7	Perfluorotetradecanoic acid	0.431	U	0.173	0.431	1.08
72629-94-8	Perfluorotridecanoic acid	0.431	U	0.237	0.431	1.08
2058-94-8	Perfluoroundecanoic acid	0.431	U	0.151	0.431	1.08

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB1-6-8
Collect Date:	12/11/19 Time: 1055	GCAL Sample ID:	21912135104
Matrix:	Solid % Moisture: 22.5	Instrument ID:	QQQ1
Sample Amt:	5.04 g	Lab File ID:	2200102A_49.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2004
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.512	U	0.218	0.512	1.28
39108-34-4	8:2 Fluorotelomer sulfonate	0.512	U	0.333	0.512	1.28
2991-50-6	NEtFOSAA	0.512	U	0.243	0.512	1.28
2355-31-9	NMeFOSAA	0.512	U	0.359	0.512	1.28
375-73-5	Perfluorobutanesulfonic acid	0.512	U	0.154	0.512	1.28
375-22-4	Perfluorobutanoic acid	0.313	J	0.166	0.512	1.28
335-76-2	Perfluorodecanoic acid	0.512	U	0.154	0.512	1.28
307-55-1	Perfluorododecanoic acid	0.512	U	0.256	0.512	1.28
375-85-9	Perfluoroheptanoic acid	0.512	U	0.166	0.512	1.28
355-46-4	Perfluorohexanesulfonic acid	0.512	U	0.179	0.512	1.28
307-24-4	Perfluorohexanoic acid	0.512	U	0.192	0.512	1.28
375-95-1	Perfluorononanoic acid	0.512	U	0.115	0.512	1.28
1763-23-1	Perfluorooctane Sulfonate	0.512	U	0.231	0.512	1.28
335-67-1	Perfluorooctanoic acid	0.512	U	0.192	0.512	1.28
2706-90-3	Perfluoropentanoic acid	0.512	U	0.192	0.512	1.28
376-06-7	Perfluorotetradecanoic acid	0.512	U	0.205	0.512	1.28
72629-94-8	Perfluorotridecanoic acid	0.512	U	0.282	0.512	1.28
2058-94-8	Perfluoroundecanoic acid	0.512	U	0.179	0.512	1.28

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB1-12-14
Collect Date:	12/11/19 Time: 1100	GCAL Sample ID:	21912135105
Matrix:	Solid % Moisture: 7.9	Instrument ID:	QQQ1
Sample Amt:	5 g	Lab File ID:	2200102A_50.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2015
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ug/kg*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.434	U	0.185	0.434	1.09
39108-34-4	8:2 Fluorotelomer sulfonate	0.434	U	0.282	0.434	1.09
2991-50-6	NEtFOSAA	0.434	U	0.206	0.434	1.09
2355-31-9	NMeFOSAA	0.434	U	0.304	0.434	1.09
375-73-5	Perfluorobutanesulfonic acid	0.434	U	0.130	0.434	1.09
375-22-4	Perfluorobutanoic acid	0.257	J	0.141	0.434	1.09
335-76-2	Perfluorodecanoic acid	0.434	U	0.130	0.434	1.09
307-55-1	Perfluorododecanoic acid	0.434	U	0.217	0.434	1.09
375-85-9	Perfluoroheptanoic acid	0.434	U	0.141	0.434	1.09
355-46-4	Perfluorohexanesulfonic acid	0.434	U	0.152	0.434	1.09
307-24-4	Perfluorohexanoic acid	0.434	U	0.163	0.434	1.09
375-95-1	Perfluorononanoic acid	0.434	U	0.098	0.434	1.09
1763-23-1	Perfluorooctane Sulfonate	0.434	U	0.195	0.434	1.09
335-67-1	Perfluorooctanoic acid	0.434	U	0.163	0.434	1.09
2706-90-3	Perfluoropentanoic acid	0.434	U	0.163	0.434	1.09
376-06-7	Perfluorotetradecanoic acid	0.434	U	0.174	0.434	1.09
72629-94-8	Perfluorotridecanoic acid	0.434	U	0.239	0.434	1.09
2058-94-8	Perfluoroundecanoic acid	0.434	U	0.152	0.434	1.09

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB2-0.5-1
Collect Date:	12/11/19 Time: 1115	GCAL Sample ID:	21912135106
Matrix:	Solid % Moisture: 21.6	Instrument ID:	QQQ1
Sample Amt:	5.08 g	Lab File ID:	2200102A_51.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2027
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ug/kg*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.502	U	0.213	0.502	1.26
39108-34-4	8:2 Fluorotelomer sulfonate	0.502	U	0.326	0.502	1.26
2991-50-6	NEtFOSAA	0.502	U	0.238	0.502	1.26
2355-31-9	NMeFOSAA	0.502	U	0.351	0.502	1.26
375-73-5	Perfluorobutanesulfonic acid	0.502	U	0.151	0.502	1.26
375-22-4	Perfluorobutanoic acid	0.502	U	0.163	0.502	1.26
335-76-2	Perfluorodecanoic acid	0.502	U	0.151	0.502	1.26
307-55-1	Perfluorododecanoic acid	0.502	U	0.251	0.502	1.26
375-85-9	Perfluoroheptanoic acid	0.502	U	0.163	0.502	1.26
355-46-4	Perfluorohexanesulfonic acid	0.502	U	0.176	0.502	1.26
307-24-4	Perfluorohexanoic acid	0.502	U	0.188	0.502	1.26
375-95-1	Perfluorononanoic acid	0.502	U	0.113	0.502	1.26
1763-23-1	Perfluorooctane Sulfonate	0.345	J	0.226	0.502	1.26
335-67-1	Perfluorooctanoic acid	0.502	U	0.188	0.502	1.26
2706-90-3	Perfluoropentanoic acid	0.502	U	0.188	0.502	1.26
376-06-7	Perfluorotetradecanoic acid	0.502	U	0.201	0.502	1.26
72629-94-8	Perfluorotridecanoic acid	0.502	U	0.276	0.502	1.26
2058-94-8	Perfluoroundecanoic acid	0.502	U	0.176	0.502	1.26

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	ERB-121019CS
Collect Date:	12/10/19 Time: 0845	GCAL Sample ID:	21912135107
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200103B_69.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/04/20 Time: 0355
Prep Batch:	673520	Analytical Batch:	674727
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	4.09	J	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	2.80	J	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	ERB-121119WL
Collect Date:	12/11/19 Time: 1240	GCAL Sample ID:	21912135108
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200103B_70.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/04/20 Time: 0407
Prep Batch:	673520	Analytical Batch:	674727
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	4.00	U	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB3-0.5-1
Collect Date:	12/11/19 Time: 0845	GCAL Sample ID:	21912135109
Matrix:	Solid % Moisture: 4.1	Instrument ID:	QQQ1
Sample Amt:	5.01 g	Lab File ID:	2200102A_52.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2038
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ug/kg*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.416	U	0.177	0.416	1.04
39108-34-4	8:2 Fluorotelomer sulfonate	0.416	U	0.270	0.416	1.04
2991-50-6	NEtFOSAA	0.416	U	0.198	0.416	1.04
2355-31-9	NMeFOSAA	0.416	U	0.291	0.416	1.04
375-73-5	Perfluorobutanesulfonic acid	0.416	U	0.125	0.416	1.04
375-22-4	Perfluorobutanoic acid	0.146	J	0.135	0.416	1.04
335-76-2	Perfluorodecanoic acid	0.416	U	0.125	0.416	1.04
307-55-1	Perfluorododecanoic acid	0.416	U	0.208	0.416	1.04
375-85-9	Perfluoroheptanoic acid	0.416	U	0.135	0.416	1.04
355-46-4	Perfluorohexanesulfonic acid	0.416	U	0.146	0.416	1.04
307-24-4	Perfluorohexanoic acid	0.416	U	0.156	0.416	1.04
375-95-1	Perfluorononanoic acid	0.416	U	0.094	0.416	1.04
1763-23-1	Perfluorooctane Sulfonate	0.416	U	0.187	0.416	1.04
335-67-1	Perfluorooctanoic acid	0.416	U	0.156	0.416	1.04
2706-90-3	Perfluoropentanoic acid	0.416	U	0.156	0.416	1.04
376-06-7	Perfluorotetradecanoic acid	0.416	U	0.166	0.416	1.04
72629-94-8	Perfluorotridecanoic acid	0.416	U	0.229	0.416	1.04
2058-94-8	Perfluoroundecanoic acid	0.416	U	0.146	0.416	1.04

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB3-1-2
Collect Date:	12/11/19 Time: 0915	GCAL Sample ID:	21912135110
Matrix:	Solid % Moisture: 19.1	Instrument ID:	QQQ1
Sample Amt:	5 g	Lab File ID:	2200102A_53.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2049
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ug/kg*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.495	U	0.210	0.495	1.24
39108-34-4	8:2 Fluorotelomer sulfonate	0.495	U	0.322	0.495	1.24
2991-50-6	NEtFOSAA	0.495	U	0.235	0.495	1.24
2355-31-9	NMeFOSAA	0.495	U	0.346	0.495	1.24
375-73-5	Perfluorobutanesulfonic acid	0.495	U	0.148	0.495	1.24
375-22-4	Perfluorobutanoic acid	0.325	J	0.161	0.495	1.24
335-76-2	Perfluorodecanoic acid	0.495	U	0.148	0.495	1.24
307-55-1	Perfluorododecanoic acid	0.495	U	0.247	0.495	1.24
375-85-9	Perfluoroheptanoic acid	0.495	U	0.161	0.495	1.24
355-46-4	Perfluorohexanesulfonic acid	0.495	U	0.173	0.495	1.24
307-24-4	Perfluorohexanoic acid	0.495	U	0.186	0.495	1.24
375-95-1	Perfluorononanoic acid	0.495	U	0.111	0.495	1.24
1763-23-1	Perfluorooctane Sulfonate	0.339	J	0.223	0.495	1.24
335-67-1	Perfluorooctanoic acid	0.919	J	0.186	0.495	1.24
2706-90-3	Perfluoropentanoic acid	0.495	U	0.186	0.495	1.24
376-06-7	Perfluorotetradecanoic acid	0.495	U	0.198	0.495	1.24
72629-94-8	Perfluorotridecanoic acid	0.495	U	0.272	0.495	1.24
2058-94-8	Perfluoroundecanoic acid	0.495	U	0.173	0.495	1.24

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	ERB-121119HA
Collect Date:	12/11/19 Time: 1235	GCAL Sample ID:	21912135111
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200103B_71.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/04/20 Time: 0418
Prep Batch:	673520	Analytical Batch:	674727
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	4.00	U	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	CS-SD05-0-1
Collect Date:	12/11/19 Time: 1540	GCAL Sample ID:	21912135112
Matrix:	Solid % Moisture: 46.2	Instrument ID:	QQQ1
Sample Amt:	5 g	Lab File ID:	2200102A_54.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2101
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.743	U	0.316	0.743	1.86
39108-34-4	8:2 Fluorotelomer sulfonate	0.743	U	0.483	0.743	1.86
2991-50-6	NEtFOSAA	0.743	U	0.353	0.743	1.86
2355-31-9	NMeFOSAA	0.743	U	0.520	0.743	1.86
375-73-5	Perfluorobutanesulfonic acid	0.743	U	0.223	0.743	1.86
375-22-4	Perfluorobutanoic acid	0.743	U	0.242	0.743	1.86
335-76-2	Perfluorodecanoic acid	0.743	U	0.223	0.743	1.86
307-55-1	Perfluorododecanoic acid	0.743	U	0.372	0.743	1.86
375-85-9	Perfluoroheptanoic acid	0.743	U	0.242	0.743	1.86
355-46-4	Perfluorohexanesulfonic acid	0.743	U	0.260	0.743	1.86
307-24-4	Perfluorohexanoic acid	0.743	U	0.279	0.743	1.86
375-95-1	Perfluorononanoic acid	0.743	U	0.167	0.743	1.86
1763-23-1	Perfluorooctane Sulfonate	1.14	J	0.335	0.743	1.86
335-67-1	Perfluorooctanoic acid	0.283	J	0.279	0.743	1.86
2706-90-3	Perfluoropentanoic acid	0.743	U	0.279	0.743	1.86
376-06-7	Perfluorotetradecanoic acid	0.743	U	0.297	0.743	1.86
72629-94-8	Perfluorotridecanoic acid	0.743	U	0.409	0.743	1.86
2058-94-8	Perfluoroundecanoic acid	0.743	U	0.260	0.743	1.86

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 2-SB1-0.5-1
Collect Date:	12/10/19 Time: 1040	GCAL Sample ID:	21912135113
Matrix:	Solid % Moisture: 10.2	Instrument ID:	QQQ1
Sample Amt:	5.21 g	Lab File ID:	2200102A_55.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2112
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.427	U	0.182	0.427	1.07
39108-34-4	8:2 Fluorotelomer sulfonate	0.427	U	0.278	0.427	1.07
2991-50-6	NEtFOSAA	0.427	U	0.203	0.427	1.07
2355-31-9	NMeFOSAA	0.427	U	0.299	0.427	1.07
375-73-5	Perfluorobutanesulfonic acid	0.427	U	0.128	0.427	1.07
375-22-4	Perfluorobutanoic acid	0.143	J	0.139	0.427	1.07
335-76-2	Perfluorodecanoic acid	0.427	U	0.128	0.427	1.07
307-55-1	Perfluorododecanoic acid	0.427	U	0.214	0.427	1.07
375-85-9	Perfluoroheptanoic acid	0.427	U	0.139	0.427	1.07
355-46-4	Perfluorohexanesulfonic acid	0.427	U	0.150	0.427	1.07
307-24-4	Perfluorohexanoic acid	0.427	U	0.160	0.427	1.07
375-95-1	Perfluorononanoic acid	0.427	U	0.096	0.427	1.07
1763-23-1	Perfluorooctane Sulfonate	0.432	J	0.192	0.427	1.07
335-67-1	Perfluorooctanoic acid	0.427	U	0.160	0.427	1.07
2706-90-3	Perfluoropentanoic acid	0.427	U	0.160	0.427	1.07
376-06-7	Perfluorotetradecanoic acid	0.427	U	0.171	0.427	1.07
72629-94-8	Perfluorotridecanoic acid	0.427	U	0.235	0.427	1.07
2058-94-8	Perfluoroundecanoic acid	0.427	U	0.150	0.427	1.07

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 2-SB1-11-13
Collect Date:	12/10/19 Time: 1215	GCAL Sample ID:	21912135114
Matrix:	Solid % Moisture: 17.1	Instrument ID:	QQQ1
Sample Amt:	5.42 g	Lab File ID:	2200102A_57.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2135
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.445	U	0.189	0.445	1.11
39108-34-4	8:2 Fluorotelomer sulfonate	0.445	U	0.289	0.445	1.11
2991-50-6	NEtFOSAA	0.445	U	0.211	0.445	1.11
2355-31-9	NMeFOSAA	0.445	U	0.312	0.445	1.11
375-73-5	Perfluorobutanesulfonic acid	0.445	U	0.134	0.445	1.11
375-22-4	Perfluorobutanoic acid	0.299	J	0.145	0.445	1.11
335-76-2	Perfluorodecanoic acid	0.445	U	0.134	0.445	1.11
307-55-1	Perfluorododecanoic acid	0.445	U	0.223	0.445	1.11
375-85-9	Perfluoroheptanoic acid	0.445	U	0.145	0.445	1.11
355-46-4	Perfluorohexanesulfonic acid	0.445	U	0.156	0.445	1.11
307-24-4	Perfluorohexanoic acid	0.445	U	0.167	0.445	1.11
375-95-1	Perfluorononanoic acid	0.445	U	0.100	0.445	1.11
1763-23-1	Perfluorooctane Sulfonate	0.445	U	0.200	0.445	1.11
335-67-1	Perfluorooctanoic acid	0.445	U	0.167	0.445	1.11
2706-90-3	Perfluoropentanoic acid	0.445	U	0.167	0.445	1.11
376-06-7	Perfluorotetradecanoic acid	0.445	U	0.178	0.445	1.11
72629-94-8	Perfluorotridecanoic acid	0.445	U	0.245	0.445	1.11
2058-94-8	Perfluoroundecanoic acid	0.445	U	0.156	0.445	1.11

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 2-SB1-21-23
Collect Date:	12/10/19 Time: 1210	GCAL Sample ID:	21912135115
Matrix:	Solid % Moisture: 13.6	Instrument ID:	QQQ1
Sample Amt:	5.18 g	Lab File ID:	2200102A_58.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2146
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.447	U	0.190	0.447	1.12
39108-34-4	8:2 Fluorotelomer sulfonate	0.447	U	0.290	0.447	1.12
2991-50-6	NEtFOSAA	0.447	U	0.212	0.447	1.12
2355-31-9	NMeFOSAA	0.447	U	0.313	0.447	1.12
375-73-5	Perfluorobutanesulfonic acid	0.447	U	0.134	0.447	1.12
375-22-4	Perfluorobutanoic acid	0.347	J	0.145	0.447	1.12
335-76-2	Perfluorodecanoic acid	0.447	U	0.134	0.447	1.12
307-55-1	Perfluorododecanoic acid	0.447	U	0.223	0.447	1.12
375-85-9	Perfluoroheptanoic acid	0.447	U	0.145	0.447	1.12
355-46-4	Perfluorohexanesulfonic acid	0.447	U	0.156	0.447	1.12
307-24-4	Perfluorohexanoic acid	0.447	U	0.168	0.447	1.12
375-95-1	Perfluorononanoic acid	0.447	U	0.101	0.447	1.12
1763-23-1	Perfluorooctane Sulfonate	0.447	U	0.201	0.447	1.12
335-67-1	Perfluorooctanoic acid	0.447	U	0.168	0.447	1.12
2706-90-3	Perfluoropentanoic acid	0.447	U	0.168	0.447	1.12
376-06-7	Perfluorotetradecanoic acid	0.447	U	0.179	0.447	1.12
72629-94-8	Perfluorotridecanoic acid	0.447	U	0.246	0.447	1.12
2058-94-8	Perfluoroundecanoic acid	0.447	U	0.156	0.447	1.12

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 3-SB1-0.5-1
Collect Date:	12/10/19 Time: 1410	GCAL Sample ID:	21912135118
Matrix:	Solid % Moisture: 14.0	Instrument ID:	QQQ1
Sample Amt:	5.48 g	Lab File ID:	2200102A_61.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2220
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.424	U	0.180	0.424	1.06
39108-34-4	8:2 Fluorotelomer sulfonate	0.424	U	0.276	0.424	1.06
2991-50-6	NEtFOSAA	0.424	U	0.201	0.424	1.06
2355-31-9	NMeFOSAA	0.424	U	0.297	0.424	1.06
375-73-5	Perfluorobutanesulfonic acid	0.424	U	0.127	0.424	1.06
375-22-4	Perfluorobutanoic acid	0.270	J	0.138	0.424	1.06
335-76-2	Perfluorodecanoic acid	0.424	U	0.127	0.424	1.06
307-55-1	Perfluorododecanoic acid	0.424	U	0.212	0.424	1.06
375-85-9	Perfluoroheptanoic acid	0.424	U	0.138	0.424	1.06
355-46-4	Perfluorohexanesulfonic acid	0.424	U	0.148	0.424	1.06
307-24-4	Perfluorohexanoic acid	0.424	U	0.159	0.424	1.06
375-95-1	Perfluorononanoic acid	0.424	U	0.095	0.424	1.06
1763-23-1	Perfluorooctane Sulfonate	0.194	J	0.191	0.424	1.06
335-67-1	Perfluorooctanoic acid	0.172	J	0.159	0.424	1.06
2706-90-3	Perfluoropentanoic acid	0.424	U	0.159	0.424	1.06
376-06-7	Perfluorotetradecanoic acid	0.424	U	0.170	0.424	1.06
72629-94-8	Perfluorotridecanoic acid	0.424	U	0.233	0.424	1.06
2058-94-8	Perfluoroundecanoic acid	0.424	U	0.148	0.424	1.06

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 3-SB1-1-2
Collect Date:	12/10/19 Time: 1430	GCAL Sample ID:	21912135119
Matrix:	Solid % Moisture: 21.7	Instrument ID:	QQQ1
Sample Amt:	5.23 g	Lab File ID:	2200102A_62.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2231
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ug/kg*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.488	U	0.207	0.488	1.22
39108-34-4	8:2 Fluorotelomer sulfonate	0.488	U	0.317	0.488	1.22
2991-50-6	NEtFOSAA	0.488	U	0.232	0.488	1.22
2355-31-9	NMeFOSAA	0.488	U	0.342	0.488	1.22
375-73-5	Perfluorobutanesulfonic acid	0.488	U	0.146	0.488	1.22
375-22-4	Perfluorobutanoic acid	0.304	J	0.159	0.488	1.22
335-76-2	Perfluorodecanoic acid	0.488	U	0.146	0.488	1.22
307-55-1	Perfluorododecanoic acid	0.488	U	0.244	0.488	1.22
375-85-9	Perfluoroheptanoic acid	0.488	U	0.159	0.488	1.22
355-46-4	Perfluorohexanesulfonic acid	0.488	U	0.171	0.488	1.22
307-24-4	Perfluorohexanoic acid	0.488	U	0.183	0.488	1.22
375-95-1	Perfluorononanoic acid	0.488	U	0.110	0.488	1.22
1763-23-1	Perfluorooctane Sulfonate	0.488	U	0.220	0.488	1.22
335-67-1	Perfluorooctanoic acid	0.488	U	0.183	0.488	1.22
2706-90-3	Perfluoropentanoic acid	0.488	U	0.183	0.488	1.22
376-06-7	Perfluorotetradecanoic acid	0.488	U	0.195	0.488	1.22
72629-94-8	Perfluorotridecanoic acid	0.488	U	0.269	0.488	1.22
2058-94-8	Perfluoroundecanoic acid	0.488	U	0.171	0.488	1.22

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 3-SB1-1-2-FD
Collect Date:	12/10/19 Time: 1430	GCAL Sample ID:	21912135120
Matrix:	Solid % Moisture: 18.4	Instrument ID:	QQQ1
Sample Amt:	5.24 g	Lab File ID:	2200102A_63.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2243
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ug/kg*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.468	U	0.199	0.468	1.17
39108-34-4	8:2 Fluorotelomer sulfonate	0.468	U	0.304	0.468	1.17
2991-50-6	NEtFOSAA	0.468	U	0.222	0.468	1.17
2355-31-9	NMeFOSAA	0.468	U	0.328	0.468	1.17
375-73-5	Perfluorobutanesulfonic acid	0.468	U	0.140	0.468	1.17
375-22-4	Perfluorobutanoic acid	0.207	J	0.152	0.468	1.17
335-76-2	Perfluorodecanoic acid	0.468	U	0.140	0.468	1.17
307-55-1	Perfluorododecanoic acid	0.468	U	0.234	0.468	1.17
375-85-9	Perfluoroheptanoic acid	0.468	U	0.152	0.468	1.17
355-46-4	Perfluorohexanesulfonic acid	0.468	U	0.164	0.468	1.17
307-24-4	Perfluorohexanoic acid	0.468	U	0.175	0.468	1.17
375-95-1	Perfluorononanoic acid	0.468	U	0.105	0.468	1.17
1763-23-1	Perfluorooctane Sulfonate	0.468	U	0.211	0.468	1.17
335-67-1	Perfluorooctanoic acid	0.468	U	0.175	0.468	1.17
2706-90-3	Perfluoropentanoic acid	0.468	U	0.175	0.468	1.17
376-06-7	Perfluorotetradecanoic acid	0.468	U	0.187	0.468	1.17
72629-94-8	Perfluorotridecanoic acid	0.468	U	0.257	0.468	1.17
2058-94-8	Perfluoroundecanoic acid	0.468	U	0.164	0.468	1.17

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 3-SB2-0.5-1
Collect Date:	12/10/19 Time: 0850	GCAL Sample ID:	21912135121
Matrix:	Solid % Moisture: 13.2	Instrument ID:	QQQ1
Sample Amt:	5.03 g	Lab File ID:	2200102A_64.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2254
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ug/kg*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.458	U	0.195	0.458	1.14
39108-34-4	8:2 Fluorotelomer sulfonate	0.458	U	0.298	0.458	1.14
2991-50-6	NEtFOSAA	0.458	U	0.218	0.458	1.14
2355-31-9	NMeFOSAA	0.458	U	0.321	0.458	1.14
375-73-5	Perfluorobutanesulfonic acid	0.458	U	0.137	0.458	1.14
375-22-4	Perfluorobutanoic acid	0.301	J	0.149	0.458	1.14
335-76-2	Perfluorodecanoic acid	0.458	U	0.137	0.458	1.14
307-55-1	Perfluorododecanoic acid	0.458	U	0.229	0.458	1.14
375-85-9	Perfluoroheptanoic acid	0.458	U	0.149	0.458	1.14
355-46-4	Perfluorohexanesulfonic acid	0.458	U	0.160	0.458	1.14
307-24-4	Perfluorohexanoic acid	0.458	U	0.172	0.458	1.14
375-95-1	Perfluorononanoic acid	0.130	J	0.103	0.458	1.14
1763-23-1	Perfluorooctane Sulfonate	1.02	J	0.206	0.458	1.14
335-67-1	Perfluorooctanoic acid	0.173	J	0.172	0.458	1.14
2706-90-3	Perfluoropentanoic acid	0.458	U	0.172	0.458	1.14
376-06-7	Perfluorotetradecanoic acid	0.458	U	0.183	0.458	1.14
72629-94-8	Perfluorotridecanoic acid	0.458	U	0.252	0.458	1.14
2058-94-8	Perfluoroundecanoic acid	0.458	U	0.160	0.458	1.14

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 3-SB2-7-9
Collect Date:	12/10/19 Time: 1010	GCAL Sample ID:	21912135122
Matrix:	Solid % Moisture: 5.3	Instrument ID:	QQQ1
Sample Amt:	5.26 g	Lab File ID:	2200102A_65.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2306
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ug/kg*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.402	U	0.171	0.402	1.00
39108-34-4	8:2 Fluorotelomer sulfonate	0.402	U	0.261	0.402	1.00
2991-50-6	NEtFOSAA	0.402	U	0.191	0.402	1.00
2355-31-9	NMeFOSAA	0.402	U	0.281	0.402	1.00
375-73-5	Perfluorobutanesulfonic acid	0.402	U	0.120	0.402	1.00
375-22-4	Perfluorobutanoic acid	0.274	J	0.131	0.402	1.00
335-76-2	Perfluorodecanoic acid	0.402	U	0.120	0.402	1.00
307-55-1	Perfluorododecanoic acid	0.402	U	0.201	0.402	1.00
375-85-9	Perfluoroheptanoic acid	0.402	U	0.131	0.402	1.00
355-46-4	Perfluorohexanesulfonic acid	0.402	U	0.141	0.402	1.00
307-24-4	Perfluorohexanoic acid	0.402	U	0.151	0.402	1.00
375-95-1	Perfluorononanoic acid	0.402	U	0.090	0.402	1.00
1763-23-1	Perfluorooctane Sulfonate	0.402	U	0.181	0.402	1.00
335-67-1	Perfluorooctanoic acid	0.402	U	0.151	0.402	1.00
2706-90-3	Perfluoropentanoic acid	0.402	U	0.151	0.402	1.00
376-06-7	Perfluorotetradecanoic acid	0.402	U	0.161	0.402	1.00
72629-94-8	Perfluorotridecanoic acid	0.402	U	0.221	0.402	1.00
2058-94-8	Perfluoroundecanoic acid	0.402	U	0.141	0.402	1.00

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 3-SB2-15-17
Collect Date:	12/10/19 Time: 1015	GCAL Sample ID:	21912135123
Matrix:	Solid % Moisture: 4.8	Instrument ID:	QQQ1
Sample Amt:	5.23 g	Lab File ID:	2200102A_66.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2317
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ug/kg*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.402	U	0.171	0.402	1.00
39108-34-4	8:2 Fluorotelomer sulfonate	0.402	U	0.261	0.402	1.00
2991-50-6	NEtFOSAA	0.402	U	0.191	0.402	1.00
2355-31-9	NMeFOSAA	0.402	U	0.281	0.402	1.00
375-73-5	Perfluorobutanesulfonic acid	0.402	U	0.121	0.402	1.00
375-22-4	Perfluorobutanoic acid	0.234	J	0.131	0.402	1.00
335-76-2	Perfluorodecanoic acid	0.402	U	0.121	0.402	1.00
307-55-1	Perfluorododecanoic acid	0.402	U	0.201	0.402	1.00
375-85-9	Perfluoroheptanoic acid	0.402	U	0.131	0.402	1.00
355-46-4	Perfluorohexanesulfonic acid	0.402	U	0.141	0.402	1.00
307-24-4	Perfluorohexanoic acid	0.402	U	0.151	0.402	1.00
375-95-1	Perfluorononanoic acid	0.402	U	0.090	0.402	1.00
1763-23-1	Perfluorooctane Sulfonate	0.402	U	0.181	0.402	1.00
335-67-1	Perfluorooctanoic acid	0.402	U	0.151	0.402	1.00
2706-90-3	Perfluoropentanoic acid	0.402	U	0.151	0.402	1.00
376-06-7	Perfluorotetradecanoic acid	0.402	U	0.161	0.402	1.00
72629-94-8	Perfluorotridecanoic acid	0.402	U	0.221	0.402	1.00
2058-94-8	Perfluoroundecanoic acid	0.402	U	0.141	0.402	1.00

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 3-GW2
Collect Date:	12/10/19 Time: 1045	GCAL Sample ID:	21912135124
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200103B_73.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/04/20 Time: 0441
Prep Batch:	673520	Analytical Batch:	674727
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	2.60	J	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	2.66	J	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.50	J	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.49	J	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	19.7		1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	10.3		1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	7.15	J	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	FRB-121119
Collect Date:	12/11/19 Time: 1245	GCAL Sample ID:	21912135125
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200103B_66.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/04/20 Time: 0321
Prep Batch:	673520	Analytical Batch:	674727
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	3.01	J	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	2.57	J	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-GW3
Collect Date:	12/11/19 Time: 0920	GCAL Sample ID:	21912135126
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200103B_74.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/04/20 Time: 0452
Prep Batch:	673520	Analytical Batch:	674727
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ng/L*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	3.39	J	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	35.4		2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	9.51	J	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	10.2		1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	11.4		1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	5.17	J	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	12.5		1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	58.4		1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	8.94	J	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-GW1
Collect Date:	12/11/19 Time: 1130	GCAL Sample ID:	21912135127
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200103B_75.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/04/20 Time: 0504
Prep Batch:	673520	Analytical Batch:	674727
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	2.10	J	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	2.87	J	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	7.28	J	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	1.68	J	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.77	J	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	14.6		1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	9.81	J	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.18	J	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	37.8		1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	29.0		1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	7.88	J	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-GW2
Collect Date:	12/11/19 Time: 1225	GCAL Sample ID:	21912135128
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200103B_76.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/04/20 Time: 0515
Prep Batch:	673520	Analytical Batch:	674727
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.73	J	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	3.50	J	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	3.45	J	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	3.42	J	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.23	J	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	13.2		1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	24.0		1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	4.16	J	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	CS-SW05
Collect Date:	12/11/19 Time: 1525	GCAL Sample ID:	21912135131
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200103B_79.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/04/20 Time: 0549
Prep Batch:	673520	Analytical Batch:	674727
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ng/L*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	2.64	J	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	8.16	J	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	3.08	J	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	CS-SW01
Collect Date:	12/12/19 Time: 0830	GCAL Sample ID:	21912135132
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200103B_80.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/04/20 Time: 0601
Prep Batch:	673520	Analytical Batch:	674727
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	2.86	J	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	4.00	U	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	CS-SD01-0-1
Collect Date:	12/12/19 Time: 0835	GCAL Sample ID:	21912135133
Matrix:	Solid % Moisture: 83.3	Instrument ID:	QQQ1
Sample Amt:	5.21 g	Lab File ID:	2200102A_67.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2328
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ug/kg*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	2.30	U	0.979	2.30	5.76
39108-34-4	8:2 Fluorotelomer sulfonate	2.30	U	1.50	2.30	5.76
2991-50-6	NEtFOSAA	2.30	U	1.09	2.30	5.76
2355-31-9	NMeFOSAA	2.30	U	1.61	2.30	5.76
375-73-5	Perfluorobutanesulfonic acid	2.30	U	0.691	2.30	5.76
375-22-4	Perfluorobutanoic acid	2.30	U	0.749	2.30	5.76
335-76-2	Perfluorodecanoic acid	2.30	U	0.691	2.30	5.76
307-55-1	Perfluorododecanoic acid	2.30	U	1.15	2.30	5.76
375-85-9	Perfluoroheptanoic acid	2.30	U	0.749	2.30	5.76
355-46-4	Perfluorohexanesulfonic acid	2.30	U	0.806	2.30	5.76
307-24-4	Perfluorohexanoic acid	2.30	U	0.864	2.30	5.76
375-95-1	Perfluorononanoic acid	2.30	U	0.518	2.30	5.76
1763-23-1	Perfluorooctane Sulfonate	2.14	J	1.04	2.30	5.76
335-67-1	Perfluorooctanoic acid	2.30	U	0.864	2.30	5.76
2706-90-3	Perfluoropentanoic acid	2.30	U	0.864	2.30	5.76
376-06-7	Perfluorotetradecanoic acid	2.30	U	0.921	2.30	5.76
72629-94-8	Perfluorotridecanoic acid	2.30	U	1.27	2.30	5.76
2058-94-8	Perfluoroundecanoic acid	2.30	U	0.806	2.30	5.76

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	CS-SW02
Collect Date:	12/12/19 Time: 0940	GCAL Sample ID:	21912135134
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200103B_81.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/04/20 Time: 0612
Prep Batch:	673520	Analytical Batch:	674727
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	4.00	U	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	CS-SD02-0-1
Collect Date:	12/12/19 Time: 0945	GCAL Sample ID:	21912135135
Matrix:	Solid % Moisture: 54.5	Instrument ID:	QQQ1
Sample Amt:	5.43 g	Lab File ID:	2200102A_68.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 2340
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.810	U	0.344	0.810	2.02
39108-34-4	8:2 Fluorotelomer sulfonate	0.810	U	0.526	0.810	2.02
2991-50-6	NEtFOSAA	0.810	U	0.385	0.810	2.02
2355-31-9	NMeFOSAA	0.810	U	0.567	0.810	2.02
375-73-5	Perfluorobutanesulfonic acid	0.810	U	0.243	0.810	2.02
375-22-4	Perfluorobutanoic acid	0.402	J	0.263	0.810	2.02
335-76-2	Perfluorodecanoic acid	0.810	U	0.243	0.810	2.02
307-55-1	Perfluorododecanoic acid	0.810	U	0.405	0.810	2.02
375-85-9	Perfluoroheptanoic acid	0.810	U	0.263	0.810	2.02
355-46-4	Perfluorohexanesulfonic acid	0.810	U	0.283	0.810	2.02
307-24-4	Perfluorohexanoic acid	0.353	J	0.304	0.810	2.02
375-95-1	Perfluorononanoic acid	0.192	J	0.182	0.810	2.02
1763-23-1	Perfluorooctane Sulfonate	3.24		0.364	0.810	2.02
335-67-1	Perfluorooctanoic acid	1.07	J	0.304	0.810	2.02
2706-90-3	Perfluoropentanoic acid	0.810	U	0.304	0.810	2.02
376-06-7	Perfluorotetradecanoic acid	0.810	U	0.324	0.810	2.02
72629-94-8	Perfluorotridecanoic acid	0.810	U	0.445	0.810	2.02
2058-94-8	Perfluoroundecanoic acid	0.299	J	0.283	0.810	2.02

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	CS-SW03
Collect Date:	12/12/19 Time: 1040	GCAL Sample ID:	21912135136
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200103B_82.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/04/20 Time: 0623
Prep Batch:	673520	Analytical Batch:	674727
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ng/L*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	6.63	J	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	2.90	J	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	CS-SD03-0-1
Collect Date:	12/12/19 Time: 1050	GCAL Sample ID:	21912135137
Matrix:	Solid % Moisture: 47.8	Instrument ID:	QQQ1
Sample Amt:	5 g	Lab File ID:	2200102A_70.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	10 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/03/20 Time: 0002
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	7.66	U	3.25	7.66	19.1
39108-34-4	8:2 Fluorotelomer sulfonate	7.66	U	4.98	7.66	19.1
2991-50-6	NEtFOSAA	7.66	U	3.64	7.66	19.1
2355-31-9	NMeFOSAA	7.66	U	5.36	7.66	19.1
375-73-5	Perfluorobutanesulfonic acid	7.66	U	2.30	7.66	19.1
375-22-4	Perfluorobutanoic acid	7.66	U	2.49	7.66	19.1
335-76-2	Perfluorodecanoic acid	7.66	U	2.30	7.66	19.1
307-55-1	Perfluorododecanoic acid	7.66	U	3.83	7.66	19.1
375-85-9	Perfluoroheptanoic acid	7.66	U	2.49	7.66	19.1
355-46-4	Perfluorohexanesulfonic acid	7.66	U	2.68	7.66	19.1
307-24-4	Perfluorohexanoic acid	7.66	U	2.87	7.66	19.1
375-95-1	Perfluorononanoic acid	7.66	U	1.72	7.66	19.1
1763-23-1	Perfluorooctane Sulfonate	7.66	U	3.45	7.66	19.1
335-67-1	Perfluorooctanoic acid	7.66	U	2.87	7.66	19.1
2706-90-3	Perfluoropentanoic acid	7.66	U	2.87	7.66	19.1
376-06-7	Perfluorotetradecanoic acid	7.66	U	3.06	7.66	19.1
72629-94-8	Perfluorotridecanoic acid	7.66	U	4.21	7.66	19.1
2058-94-8	Perfluoroundecanoic acid	7.66	U	2.68	7.66	19.1

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	CS-SW04
Collect Date:	12/12/19 Time: 1120	GCAL Sample ID:	21912135138
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200107A_41.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/07/20 Time: 1809
Prep Batch:	673520	Analytical Batch:	674886
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ng/L*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	3.30	J	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	4.00	U	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	CS-SD04-0-1
Collect Date:	12/12/19 Time: 1130	GCAL Sample ID:	21912135139
Matrix:	Solid % Moisture: 31.5	Instrument ID:	QQQ1
Sample Amt:	5.29 g	Lab File ID:	2200102A_29.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/19/19	Analysis Date:	01/02/20 Time: 1618
Prep Batch:	673519	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ug/kg*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.552	U	0.234	0.552	1.38
39108-34-4	8:2 Fluorotelomer sulfonate	0.552	U	0.359	0.552	1.38
2991-50-6	NEtFOSAA	0.552	U	0.262	0.552	1.38
2355-31-9	NMeFOSAA	0.552	U	0.386	0.552	1.38
375-73-5	Perfluorobutanesulfonic acid	0.552	U	0.166	0.552	1.38
375-22-4	Perfluorobutanoic acid	0.552	U	0.179	0.552	1.38
335-76-2	Perfluorodecanoic acid	0.552	U	0.166	0.552	1.38
307-55-1	Perfluorododecanoic acid	0.552	U	0.276	0.552	1.38
375-85-9	Perfluoroheptanoic acid	0.552	U	0.179	0.552	1.38
355-46-4	Perfluorohexanesulfonic acid	0.552	U	0.193	0.552	1.38
307-24-4	Perfluorohexanoic acid	0.552	U	0.207	0.552	1.38
375-95-1	Perfluorononanoic acid	0.552	U	0.124	0.552	1.38
1763-23-1	Perfluorooctane Sulfonate	1.02	J	0.248	0.552	1.38
335-67-1	Perfluorooctanoic acid	0.552	U	0.207	0.552	1.38
2706-90-3	Perfluoropentanoic acid	0.552	U	0.207	0.552	1.38
376-06-7	Perfluorotetradecanoic acid	0.552	U	0.221	0.552	1.38
72629-94-8	Perfluorotridecanoic acid	0.552	U	0.303	0.552	1.38
2058-94-8	Perfluoroundecanoic acid	0.552	U	0.193	0.552	1.38

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	CS-SD06-0-1
Collect Date:	12/12/19 Time: 1215	GCAL Sample ID:	21912135140
Matrix:	Solid % Moisture: 15.9	Instrument ID:	QQQ1
Sample Amt:	5.32 g	Lab File ID:	2200102A_30.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/19/19	Analysis Date:	01/02/20 Time: 1629
Prep Batch:	673519	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ug/kg*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.447	U	0.190	0.447	1.12
39108-34-4	8:2 Fluorotelomer sulfonate	0.447	U	0.291	0.447	1.12
2991-50-6	NEtFOSAA	0.447	U	0.212	0.447	1.12
2355-31-9	NMeFOSAA	0.447	U	0.313	0.447	1.12
375-73-5	Perfluorobutanesulfonic acid	0.447	U	0.134	0.447	1.12
375-22-4	Perfluorobutanoic acid	0.245	J	0.145	0.447	1.12
335-76-2	Perfluorodecanoic acid	0.447	U	0.134	0.447	1.12
307-55-1	Perfluorododecanoic acid	0.447	U	0.224	0.447	1.12
375-85-9	Perfluoroheptanoic acid	0.447	U	0.145	0.447	1.12
355-46-4	Perfluorohexanesulfonic acid	0.199	J	0.156	0.447	1.12
307-24-4	Perfluorohexanoic acid	0.447	U	0.168	0.447	1.12
375-95-1	Perfluorononanoic acid	0.447	U	0.101	0.447	1.12
1763-23-1	Perfluorooctane Sulfonate	3.77		0.201	0.447	1.12
335-67-1	Perfluorooctanoic acid	0.447	U	0.168	0.447	1.12
2706-90-3	Perfluoropentanoic acid	0.447	U	0.168	0.447	1.12
376-06-7	Perfluorotetradecanoic acid	0.447	U	0.179	0.447	1.12
72629-94-8	Perfluorotridecanoic acid	0.447	U	0.246	0.447	1.12
2058-94-8	Perfluoroundecanoic acid	0.447	U	0.156	0.447	1.12

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	CS-SD07-0-1
Collect Date:	12/12/19 Time: 1235	GCAL Sample ID:	21912135141
Matrix:	Solid % Moisture: 64.0	Instrument ID:	QQQ1
Sample Amt:	5.13 g	Lab File ID:	2200102A_31.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/19/19	Analysis Date:	01/02/20 Time: 1640
Prep Batch:	673519	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ug/kg*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	1.08	U	0.461	1.08	2.71
39108-34-4	8:2 Fluorotelomer sulfonate	1.08	U	0.705	1.08	2.71
2991-50-6	NEtFOSAA	1.08	U	0.515	1.08	2.71
2355-31-9	NMeFOSAA	1.08	U	0.759	1.08	2.71
375-73-5	Perfluorobutanesulfonic acid	1.08	U	0.325	1.08	2.71
375-22-4	Perfluorobutanoic acid	1.08	U	0.352	1.08	2.71
335-76-2	Perfluorodecanoic acid	1.08	U	0.325	1.08	2.71
307-55-1	Perfluorododecanoic acid	1.08	U	0.542	1.08	2.71
375-85-9	Perfluoroheptanoic acid	1.08	U	0.352	1.08	2.71
355-46-4	Perfluorohexanesulfonic acid	1.08	U	0.379	1.08	2.71
307-24-4	Perfluorohexanoic acid	1.08	U	0.406	1.08	2.71
375-95-1	Perfluorononanoic acid	1.08	U	0.244	1.08	2.71
1763-23-1	Perfluorooctane Sulfonate	0.947	J	0.488	1.08	2.71
335-67-1	Perfluorooctanoic acid	1.08	U	0.406	1.08	2.71
2706-90-3	Perfluoropentanoic acid	1.08	U	0.406	1.08	2.71
376-06-7	Perfluorotetradecanoic acid	1.08	U	0.434	1.08	2.71
72629-94-8	Perfluorotridecanoic acid	1.08	U	0.596	1.08	2.71
2058-94-8	Perfluoroundecanoic acid	1.08	U	0.379	1.08	2.71

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	CS-SD08-0-1
Collect Date:	12/12/19 Time: 1320	GCAL Sample ID:	21912135142
Matrix:	Solid % Moisture: 70.6	Instrument ID:	QQQ1
Sample Amt:	5.09 g	Lab File ID:	2200102A_32.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/19/19	Analysis Date:	01/02/20 Time: 1652
Prep Batch:	673519	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	1.34	U	0.568	1.34	3.34
39108-34-4	8:2 Fluorotelomer sulfonate	1.34	U	0.869	1.34	3.34
2991-50-6	NEtFOSAA	1.34	U	0.635	1.34	3.34
2355-31-9	NMeFOSAA	1.34	U	0.936	1.34	3.34
375-73-5	Perfluorobutanesulfonic acid	1.34	U	0.401	1.34	3.34
375-22-4	Perfluorobutanoic acid	1.34	U	0.434	1.34	3.34
335-76-2	Perfluorodecanoic acid	1.34	U	0.401	1.34	3.34
307-55-1	Perfluorododecanoic acid	1.34	U	0.668	1.34	3.34
375-85-9	Perfluoroheptanoic acid	1.34	U	0.434	1.34	3.34
355-46-4	Perfluorohexanesulfonic acid	1.34	U	0.468	1.34	3.34
307-24-4	Perfluorohexanoic acid	1.34	U	0.501	1.34	3.34
375-95-1	Perfluorononanoic acid	1.34	U	0.301	1.34	3.34
1763-23-1	Perfluorooctane Sulfonate	2.13	J	0.602	1.34	3.34
335-67-1	Perfluorooctanoic acid	1.34	U	0.501	1.34	3.34
2706-90-3	Perfluoropentanoic acid	1.34	U	0.501	1.34	3.34
376-06-7	Perfluorotetradecanoic acid	1.34	U	0.535	1.34	3.34
72629-94-8	Perfluorotridecanoic acid	1.34	U	0.735	1.34	3.34
2058-94-8	Perfluoroundecanoic acid	1.34	U	0.468	1.34	3.34

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	ERB-121219SS
Collect Date:	12/12/19 Time: 1400	GCAL Sample ID:	21912135143
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200107A_42.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/07/20 Time: 1820
Prep Batch:	673520	Analytical Batch:	674886
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	2.35	J	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	3.31	J	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB1-0.5-1
Collect Date:	12/11/19 0950	GCAL Sample ID:	21912135103
Matrix:	Solid	Instrument ID:	TOC6
% Solids:	NA	Analyst:	PLH
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	12/24/19 1155
Prep Batch:	NA	Analytical Batch:	674198
Prep Method:	NA	Analytical Method:	EPA 9060A

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	10500	mg/kg		153	200	250

FORM I - GENCHEM

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB1-6-8
Collect Date:	12/11/19 1055	GCAL Sample ID:	21912135104
Matrix:	Solid	Instrument ID:	TOC6
% Solids:	NA	Analyst:	PLH
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	12/24/19 1252
Prep Batch:	NA	Analytical Batch:	674198
Prep Method:	NA	Analytical Method:	EPA 9060A

ANALYTE	*RESULT*	*UNITS*	*Q*	*DL*	*LOD*	*LOQ*
Total Organic Carbon	868	mg/kg		153	200	250

FORM I - GENCHEM

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB1-12-14
Collect Date:	12/11/19 1100	GCAL Sample ID:	21912135105
Matrix:	Solid	Instrument ID:	TOC6
% Solids:	NA	Analyst:	PLH
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	12/24/19 1453
Prep Batch:	NA	Analytical Batch:	674198
Prep Method:	NA	Analytical Method:	EPA 9060A

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	586	mg/kg		153	200	250

FORM I - GENCHEM

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB2-0.5-1
Collect Date:	12/11/19 1115	GCAL Sample ID:	21912135106
Matrix:	Solid	Instrument ID:	TOC6
% Solids:	NA	Analyst:	PLH
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	12/24/19 1505
Prep Batch:	NA	Analytical Batch:	674198
Prep Method:	NA	Analytical Method:	EPA 9060A

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	4230	mg/kg		153	200	250

FORM I - GENCHEM

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB3-0.5-1
Collect Date:	12/11/19 0845	GCAL Sample ID:	21912135109
Matrix:	Solid	Instrument ID:	TOC6
% Solids:	NA	Analyst:	PLH
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	12/24/19 1526
Prep Batch:	NA	Analytical Batch:	674198
Prep Method:	NA	Analytical Method:	EPA 9060A

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	68800	mg/kg		153	200	250

FORM I - GENCHEM

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB3-1-2
Collect Date:	12/11/19 0915	GCAL Sample ID:	21912135110
Matrix:	Solid	Instrument ID:	TOC6
% Solids:	NA	Analyst:	PLH
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	12/24/19 1542
Prep Batch:	NA	Analytical Batch:	674198
Prep Method:	NA	Analytical Method:	EPA 9060A

ANALYTE	*RESULT*	*UNITS*	*Q*	*DL*	*LOD*	*LOQ*
Total Organic Carbon	10300	mg/kg		153	200	250

FORM I - GENCHEM

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB1-0.5-1
Collect Date:	12/11/19 0950	GCAL Sample ID:	21912135103
Matrix:	Solid	Instrument ID:	PH01
% Solids:	NA	Analyst:	SLL2
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	12/14/19 1518
Prep Batch:	NA	Analytical Batch:	673449
Prep Method:	NA	Analytical Method:	EPA 9045D

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
pH	7.89	pH UNITS		1.00	1.00	1.00

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB1-6-8
Collect Date:	12/11/19 1055	GCAL Sample ID:	21912135104
Matrix:	Solid	Instrument ID:	PH01
% Solids:	NA	Analyst:	SLL2
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	12/14/19 1520
Prep Batch:	NA	Analytical Batch:	673449
Prep Method:	NA	Analytical Method:	EPA 9045D

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
pH	5.84	pH UNITS		1.00	1.00	1.00

FORM I - GENCHEM

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB1-12-14
Collect Date:	12/11/19 1100	GCAL Sample ID:	21912135105
Matrix:	Solid	Instrument ID:	PH01
% Solids:	NA	Analyst:	SLL2
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	12/14/19 1523
Prep Batch:	NA	Analytical Batch:	673449
Prep Method:	NA	Analytical Method:	EPA 9045D

ANALYTE	*RESULT*	*UNITS*	*Q*	*DL*	*LOD*	*LOQ*
pH	7.46	pH UNITS		1.00	1.00	1.00

FORM I - GENCHEM

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB2-0.5-1
Collect Date:	12/11/19 1115	GCAL Sample ID:	21912135106
Matrix:	Solid	Instrument ID:	PH01
% Solids:	NA	Analyst:	SLL2
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	12/14/19 1526
Prep Batch:	NA	Analytical Batch:	673449
Prep Method:	NA	Analytical Method:	EPA 9045D

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
pH	7.80	pH UNITS		1.00	1.00	1.00

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB3-0.5-1
Collect Date:	12/11/19 0845	GCAL Sample ID:	21912135109
Matrix:	Solid	Instrument ID:	PH01
% Solids:	NA	Analyst:	SLL2
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	12/14/19 1527
Prep Batch:	NA	Analytical Batch:	673449
Prep Method:	NA	Analytical Method:	EPA 9045D

ANALYTE	*RESULT*	*UNITS*	*Q*	*DL*	*LOD*	*LOQ*
pH	9.25	pH UNITS		1.00	1.00	1.00

FORM I - GENCHEM

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	AOI 1-SB3-1-2
Collect Date:	12/11/19 0915	GCAL Sample ID:	21912135110
Matrix:	Solid	Instrument ID:	PH01
% Solids:	NA	Analyst:	SLL2
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	12/14/19 1530
Prep Batch:	NA	Analytical Batch:	673449
Prep Method:	NA	Analytical Method:	EPA 9045D

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
pH	7.52	pH UNITS		1.00	1.00	1.00

FORM I - GENCHEM

DATA VALIDATION WORKSHEET

Per- and Polyfluoroalkyl Substances by LC/MS/MS

Reviewer: Devon Chicoine
Date: 2/14/2020
DV Level: II **III** IV
Review Document:
__X__ National Functional Guidelines for Organic Data Review
__X__ DOD QSM 5.1, Table B-15
_____ Method 537 Rev. 1.1

Project Name: Camp Smith
Project Number: 60552172
Laboratory: GCAL
SDG No.: 219071222+219112207+219121351
Test Name: PFAS

1.0 Laboratory Deliverables		**Yes**	**No**	**NA**
1.1	Do Chain-of-Custody forms list all samples that were analyzed?	**X**		
1.2	Are all Chain-of-Custody forms signed, indicating sample chain-of-custody was maintained?	**X**		
1.3	Do sample preservation, collection and storage condition meet method requirement? 4±2°C If samples were received with the cooler temperature exceeding 6°C, then flag J(+)/UJ(-). If >20°C, J(+)/UX(-)	**X**		
1.4	Do the traffic Reports, chain-of-custody, and lab narrative indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data?		**X**	

Notes: Sample CS-SD01-0-1 and CS-SD02-0-1 were listed on the COC as water but are solid samples.

2.0 Holding Times		**Yes**	**No**	**NA**
2.1	Have any technical holding times, determined from date of sampling to date of analysis, been exceeded? If yes, J(+)/UJ(-). Extraction: 14 days; Analysis: 40 days.		**X**	
2.2	Have any technical holding time grossly (twice the holding time) been exceeded? If yes, J(+)/UX(-) .		**X**	

Notes:

3.0 Blanks (Laboratory and Field)		**Yes**	**No**	**NA**
3.1	Were method blanks (MB) prepared at the appropriate frequency (one per 20 samples, per batch per matrix?)	**X**		
3.2	Do any instrument/method blanks have positive results?	**X**		
3.3	Do any field equipment blanks/trip blanks have positive results?	**X**		

Notes: method, instrument, and equipment blanks had low level PFOS, PFPeA, and PFBA hits

4.0 Initial and Continuing Calibration		Yes	No	NA
4.1	For each calibration standard, was each analyte calculated within 70%-130% of the true value, RSD ≤20%, or r^2≥0.99?	X		
4.2	Was the retention time window for each analyte and surrogate set using the midpoint standard of the curve?	X		
4.3	Was the relative retention time of each analyte within laboratory control limits?	X		
4.4	Was a second source calibration verification (ICV) analyzed for each calibration curve? If no, flag "X".	X		
4.5	Were continuing calibration standards analyzed every ten samples and at the end of the sequence? If no, flag "X".	X		
4.6	For each calibration standard used for quantitation, was the S/N Ratio ≥10:1 and for all analytes with promulgated standards was the confirmation ion at a S/N at 3:1? (Table B-15, non-DW matrices)	X		
For initial calibration: 70%-130%, RSD ≤20%, or r2≥0.99. J(+)/UJ(-)				
For ICV/CCV: %D>30%, Positive: J(+), Negative:J(+)/UJ(-).				

Notes:

5.0 Laboratory Control Sample (LCS)		Yes	No	NA
5.1	Were LCS/LCSD analyzed at required frequency (one per 20 samples per batch) for each matrix?	X		
5.2	Are there any %R for LCS/LCSD recoveries outside the laboratory QC limits(lab default is 70%-130%)?	X		
	Action: If Yes, for %R >130, J+(+) only; for %R 30%-70%, J-(+)/UJ(-), and %R<30%, J-(+)/UX(-).			
5.3	Are there any RPD for LCS/LCSD recoveries outside the QC limits? If Yes, J(+) only.		X	

Notes: PFTrDA, 6:2 FTS, 8:2 FTS greater than 130% associated with non-detects; no data qualifying action is required; PFOS detects was qualified J+ (> 130)

6.0 Injection Internal Standard Area Count/Extraction Internal Standards (For Table B-15 Matrices)					Yes	No	NA
6.1	Are recoveries within acceptance criteria for all samples and method blanks?					X	
6.2	If No in Section 6.1, are these sample(s) or method blank(s) reanalyzed?					X	
6.3	If No in Section 6.2, is any sample dilution factor greater than 10? (recoveries may be diluted out.)					X	
6.4	Has the Extracted/Injected Standard area count been met for all quality control and field samples? (50%-150%) If					X	
		<20%	low	high			
	Positives	X	J+	J-			
	Non-detects	UX	UJ	None			

Notes: Several less than LCL but greater than 10%, associated mostly with PFTrDA, PFTeDA, qualified UX
Several less than 20% , associated mostly with PFTrDA, PFTeDA,PFDoA, and FOSA, qualified UJ

7.0 Matrix Spike/Matrix Spike Duplicate (MS/MSD)		Yes	No	NA
7.1	Were matrix spikes analyzed at required frequency (one per 20 samples per batch) for each matrix?	X		
7.2	Are there any %R for matrix spike and matrix spike duplicate recoveries outside the laboratory QC limits?	X		
	%Recovery: <30% 30%-70% >130%			
	Action: J-(+)/UX(-) J-(+)/UJ(-) J+(+) only			
7.3	Are there any RPD for matrix spike and matrix spike duplicate recoveries outside the QC limits? (±30%)	X		
	Action: No action is required based on MS/MSd failure alone. Note in the report and use professional judgement.			

Notes: Recoveries greater than 130% (associated with ND); RPD anomaly associated with ND, no qualifying action required.
PFOA detect was qualified J- (59%)

8.0 Field/Laboratory Duplicates		Yes	No	NA
8.1	Acceptable field duplicate results? If no, J(+) parent sample/field duplicate only.	X		

Notes:

9.0 Instrument Sensitivity Check (ISC)		Yes	No	NA
9.1	Was an instrument sensitivity check analyzed prior to analysis and every 12 hours? If not X(+/-)	X		
9.2	Were analyte concentrations at the LOQ for the ISC and within ±30% of their true values? If not (J(+)/UJ(-)	X		

Notes:

10.0 Compound Identification/Tune and Detection Limit Verification		Yes	No	NA
10.1	Do detection limits meet those required by the project QAPP and were they properly adjusted for dilution factors and moisture (including adjustment of wet weight aliquot)?	X		
10.2	Was a mass calibration performed daily prior to analysis?	X		

Notes:

11.0 Data Completeness		Yes	No	NA
11.1	Is % completeness within the control limits? (Control limit $95\%_{aq}$ and $90\%_{so}$)	X		
11.1.1	Number of samples: 34			
11.1.2	Number of target compounds in each analysis: 18			
11.1.3	Number of "X" flagged results: 17			

LCMS1 Run Log

Name	Data File	Type	Acq. Date-Time	Dil.
1201	2190714B_01.d	Cal	7/15/2019 2:42	1
1202	2190714B_02.d	Cal	7/15/2019 2:53	1
1203	2190714B_03.d	Cal	7/15/2019 3:05	1
1204	2190714B_04.d	Cal	7/15/2019 3:16	1
1205	2190714B_05.d	Cal	7/15/2019 3:27	1
1206	2190714B_06.d	Cal	7/15/2019 3:39	1
1207	2190714B_07.d	Cal	7/15/2019 3:50	1
1600	2190714B_08.d	QC	7/15/2019 4:01	1
1450	2190714B_09.d	Sample	7/15/2019 4:13	1
1500	2190714B_10.d	Sample	7/15/2019 4:24	1
1500	2190717A_01.d	Sample	7/17/2019 19:07	1
1450	2190717A_02.d	Sample	7/17/2019 19:19	1
21907109004	2190717A_45.d	Sample	7/18/2019 3:28	1
21907109006	2190717A_46.d	Sample	7/18/2019 3:39	1
21907109007	2190717A_47.d	Sample	7/18/2019 3:51	1
21907109008	2190717A_48.d	Sample	7/18/2019 4:02	1
21907109009	2190717A_49.d	Sample	7/18/2019 4:14	1
21907109010	2190717A_50.d	Sample	7/18/2019 4:25	1
21907109011	2190717A_51.d	Sample	7/18/2019 4:36	1
21907109012	2190717A_52.d	Sample	7/18/2019 4:48	1
21907109013	2190717A_53.d	Sample	7/18/2019 4:59	1
21907109014	2190717A_54.d	Sample	7/18/2019 5:11	1
1400	2190717A_55.d	QC	7/18/2019 5:22	1
21907109015	2190717A_56.d	Sample	7/18/2019 5:34	1
1943742	2190717A_57.d	Sample	7/18/2019 5:45	1
1943743	2190717A_58.d	QC	7/18/2019 5:56	1
1943744	2190717A_59.d	QC	7/18/2019 6:08	1
21907161108	2190717A_60.d	Sample	7/18/2019 6:19	1
21907161107	2190717A_61.d	Sample	7/18/2019 6:31	1
21907122201	2190717A_62.d	Sample	7/18/2019 6:42	1
21907161101	2190717A_63.d	Sample	7/18/2019 6:53	1
21907161102	2190717A_64.d	Sample	7/18/2019 7:05	1
21907161103	2190717A_65.d	Sample	7/18/2019 7:16	1
21907161104	2190717A_66.d	Sample	7/18/2019 7:28	1
21907161105	2190717A_67.d	Sample	7/18/2019 7:39	1
21907161106	2190717A_68.d	Sample	7/18/2019 7:50	1
1400	2190717A_69.d	QC	7/18/2019 8:02	1
21907161109	2190717A_70.d	Sample	7/18/2019 8:13	1
21906281501	2190717A_71.d	Sample	7/18/2019 8:25	1
21906281502	2190717A_72.d	QC	7/18/2019 8:36	1
21906281503	2190717A_73.d	QC	7/18/2019 8:48	1
21906281504	2190717A_74.d	Sample	7/18/2019 8:59	1
21906281506	2190717A_76.d	QC	7/18/2019 9:10	1
1400	2190717A_77.d	QC	7/18/2019 9:21	1
21906281505	2190717A_79.d	QC	7/18/2019 9:59	1

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	219071222	Instrument ID:	QQQ1
Analysis Date:	07/15/2019 04:01	Lab File ID:	2190714B_08.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	663958

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
4:2 FTS	ng/L	46800	40000	86	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	42700	90	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	48600	101	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	41000	82	70	130	
NEtFOSAA	ng/L	50000	42000	84	70	130	
NMeFOSAA	ng/L	50000	47500	95	70	130	
Perfluorobutanoic acid	ng/L	50000	42000	84	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	37800	85	70	130	
Perfluorodecanoic acid	ng/L	50000	40400	81	70	130	
Perfluorodecane Sulfonate	ng/L	48300	39200	81	70	130	
Perfluorododecanoic acid	ng/L	50000	43300	87	70	130	
Perfluoroheptanoic acid	ng/L	50000	41700	83	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	39400	83	70	130	
Perfluorohexanoic acid	ng/L	50000	41600	83	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	37400	82	70	130	
Perfluorononanoic acid	ng/L	50000	40800	82	70	130	
PFNS	ng/L	48000	39100	82	70	130	
Perfluorooctanoic acid	ng/L	50000	40900	82	70	130	
Perfluorooctane Sulfonate	ng/L	46300	40000	86	70	130	
Perfluoropentanoic acid	ng/L	50000	40900	82	70	130	
PFPeS	ng/L	47000	39200	83	70	130	
Perfluorotetradecanoic acid	ng/L	50000	45100	90	70	130	
Perfluorotridecanoic acid	ng/L	50000	44500	89	70	130	
Perfluoroundecanoic acid	ng/L	50000	39900	80	70	130	

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	219071222	Instrument ID:	QQQ1
Analysis Date:	07/15/2019 04:13	Lab File ID:	2190714B_09.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	663740

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
4:2 FTS	ng/L	7.80	6.52	84	70	130	
6:2 Fluorotelomer sulfonate	ng/L	7.93	6.80	86	70	130	
8:2 Fluorotelomer sulfonate	ng/L	8.00	7.47	93	70	130	
Perfluorooctane Sulfonamide	ng/L	8.33	7.07	84	70	130	
NEtFOSAA	ng/L	8.33	7.00	84	70	130	
NMeFOSAA	ng/L	8.33	6.07	73	70	130	
Perfluorobutanoic acid	ng/L	8.33	6.57	79	70	130	
Perfluorobutanesulfonic acid	ng/L	7.40	5.86	80	70	130	
Perfluorodecanoic acid	ng/L	8.33	6.65	80	70	130	
Perfluorodecane Sulfonate	ng/L	8.07	6.12	76	70	130	
Perfluorododecanoic acid	ng/L	8.33	7.13	85	70	130	
Perfluoroheptanoic acid	ng/L	8.33	6.64	80	70	130	
Perfluoro-1-heptanesulfonate	ng/L	7.93	6.54	83	70	130	
Perfluorohexanoic acid	ng/L	8.33	6.80	81	70	130	
Perfluorohexanesulfonic acid	ng/L	7.60	5.91	78	70	130	
Perfluorononanoic acid	ng/L	8.33	6.67	80	70	130	
PFNS	ng/L	8.00	6.43	80	70	130	
Perfluorooctanoic acid	ng/L	8.33	6.21	74	70	130	
Perfluorooctane Sulfonate	ng/L	7.73	6.67	87	70	130	
Perfluoropentanoic acid	ng/L	8.33	7.33	88	70	130	
PFPeS	ng/L	7.87	6.34	81	70	130	
Perfluorotetradecanoic acid	ng/L	8.33	8.47	101	70	130	
Perfluorotridecanoic acid	ng/L	8.33	7.67	92	70	130	
Perfluoroundecanoic acid	ng/L	8.33	6.45	77	70	130	

4I

ORGANICS INSTRUMENT BLANK

Report No:	219071222	Instrument ID:	QQQ1
Analysis Date:	07/15/2019 04:24	Lab File ID:	2190714B_10.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	663740

ANALYTE	*UNITS*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*	*#*
4:2 FTS	ng/L	4.00	U	1.52	4.00	10.0	
6:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.79	4.00	10.0	
8:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.63	4.00	10.0	
NEtFOSAA	ng/L	8.00	U	5.38	8.00	10.0	
NMeFOSAA	ng/L	8.00	U	4.60	8.00	10.0	
PFNS	ng/L	4.00	U	2.11	4.00	10.0	
PFPeS	ng/L	4.00	U	2.07	4.00	10.0	
Perfluoro-1-heptanesulfonate	ng/L	4.00	U	2.01	4.00	10.0	
Perfluorobutanesulfonic acid	ng/L	4.00	U	1.47	4.00	10.0	
Perfluorobutanoic acid	ng/L	4.00	U	2.13	4.00	10.0	
Perfluorodecane Sulfonate	ng/L	4.00	U	2.17	4.00	10.0	
Perfluorodecanoic acid	ng/L	4.00	U	1.65	4.00	10.0	
Perfluorododecanoic acid	ng/L	4.00	U	2.45	4.00	10.0	
Perfluoroheptanoic acid	ng/L	4.00	U	1.85	4.00	10.0	
Perfluorohexanesulfonic acid	ng/L	4.00	U	1.64	4.00	10.0	
Perfluorohexanoic acid	ng/L	4.00	U	1.94	4.00	10.0	
Perfluorononanoic acid	ng/L	4.00	U	1.68	4.00	10.0	
Perfluorooctane Sulfonamide	ng/L	4.00	U	2.63	4.00	10.0	
Perfluorooctane Sulfonate	ng/L	4.00	U	1.70	4.00	10.0	
Perfluorooctanoic acid	ng/L	4.00	U	1.80	4.00	10.0	
Perfluoropentanoic acid	ng/L	4.00	U	2.35	4.00	10.0	
Perfluorotetradecanoic acid	ng/L	4.00	U	2.76	4.00	10.0	
Perfluorotridecanoic acid	ng/L	4.00	U	2.56	4.00	10.0	
Perfluoroundecanoic acid	ng/L	4.00	U	1.86	4.00	10.0	

* - Result greater than 1/2 LOQ

Quantitative Analysis Calibration Report

Batch Data Path	D:\MassHunter\Data\2190714BCAL\QuantResults\2190717A.batch.bin		
Analysis Time	7/29/2019 11:25 AM	**Analyst Name**	GCAL\lcms
Report Time	7/29/2019 11:27 AM	**Reporter Name**	GCAL\lcms
Last Calib Update	7/15/2019 12:40 PM	**Batch State**	Processed

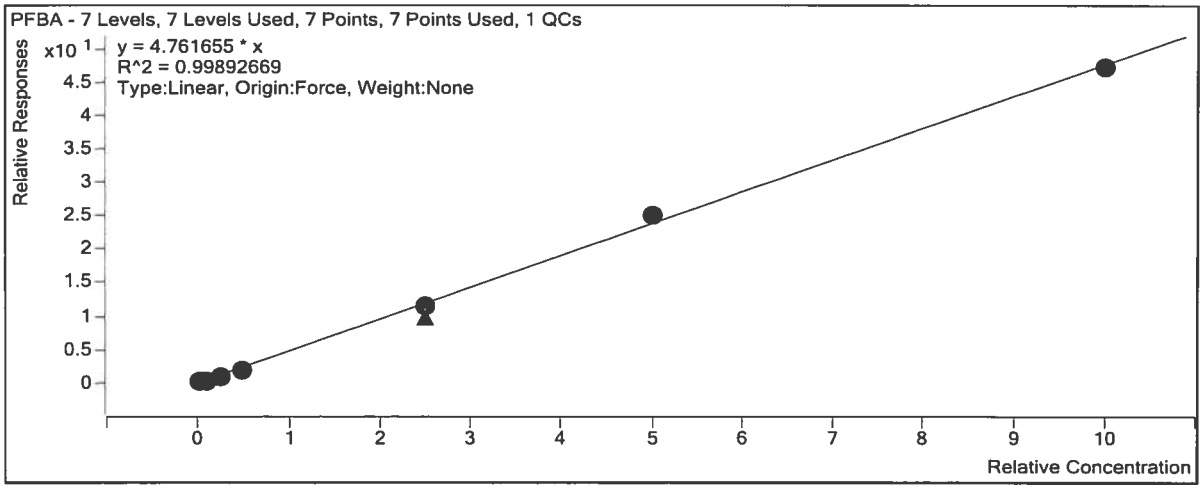
Calibration Info

Extracted ISTD *MPFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	69337	20.0000	3466.8455
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	76368	20.0000	3818.3809
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	75243	20.0000	3762.1683
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	82607	20.0000	4130.3730
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	82522	20.0000	4126.0937
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	76005	20.0000	3800.2407
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	74918	20.0000	3745.9244

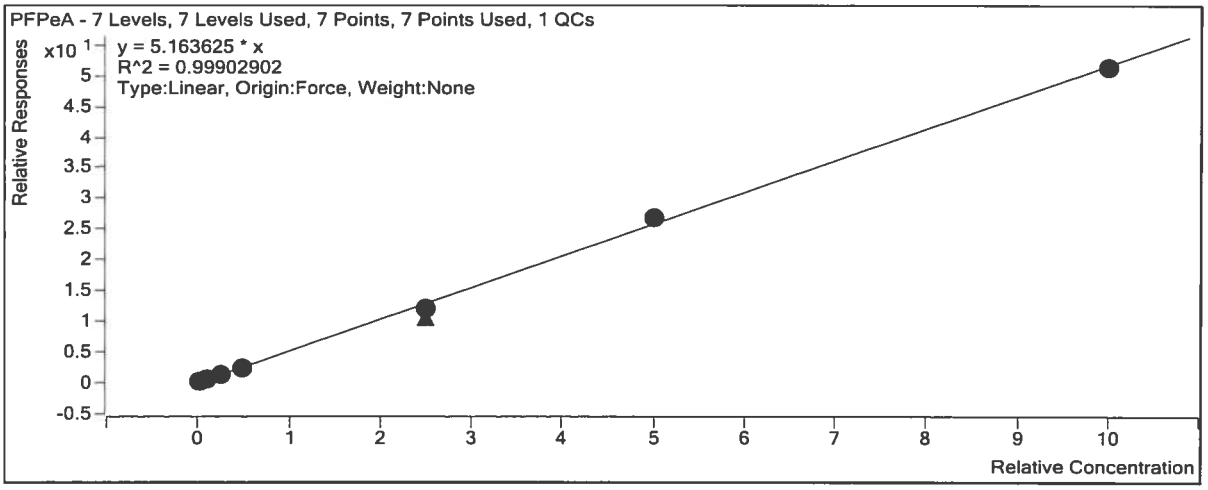
Target Compound *PFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	6824	0.5000	3.9365
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	28279	2.0000	3.7030
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	76988	5.0000	4.0928
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	164121	10.0000	3.9735
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	941283	50.0000	4.5626
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	1899584	100.0000	4.9986
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	3534177	200.0000	4.7174



Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	94008	10.0000	4.6634
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	482516	50.0000	4.8378
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	990055	100.0000	5.3917
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	1852445	200.0000	5.1280



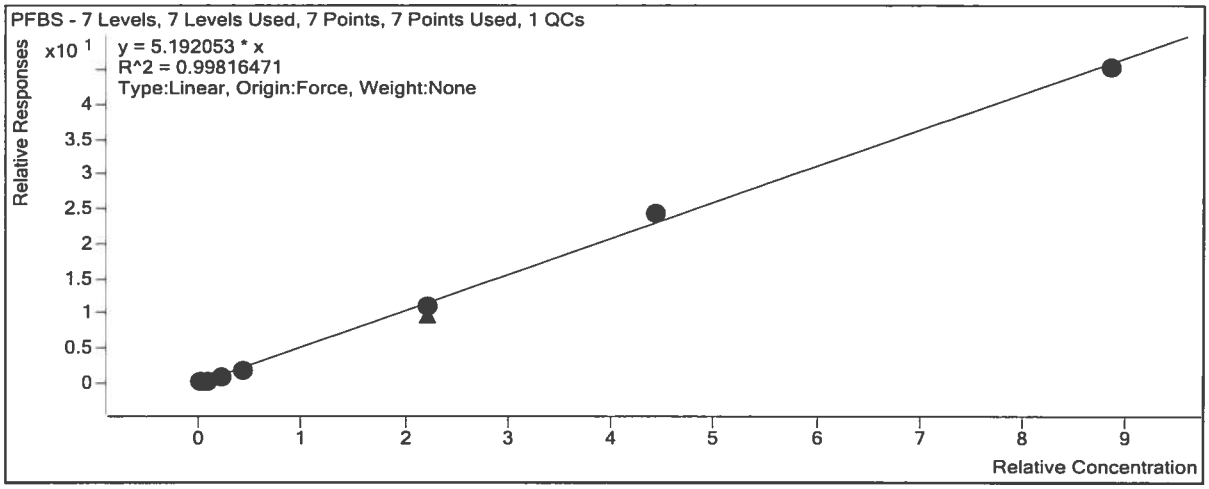
Extracted ISTD *M5PFPeA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	33948	20.0000	1697.4171
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	38173	20.0000	1908.6463
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	36368	20.0000	1818.3998
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	40317	20.0000	2015.8675
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	39896	20.0000	1994.7918
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	36725	20.0000	1836.2626
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	36124	20.0000	1806.1900

Target Compound *PFBS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	2855	0.4425	4.4286
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	11830	1.7700	4.0519
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	32012	4.4250	4.4778
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	66967	8.8500	4.2485

D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	389957	44.2500	5.0076
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	793957	88.5000	5.5451
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	1484889	177.0000	5.1182



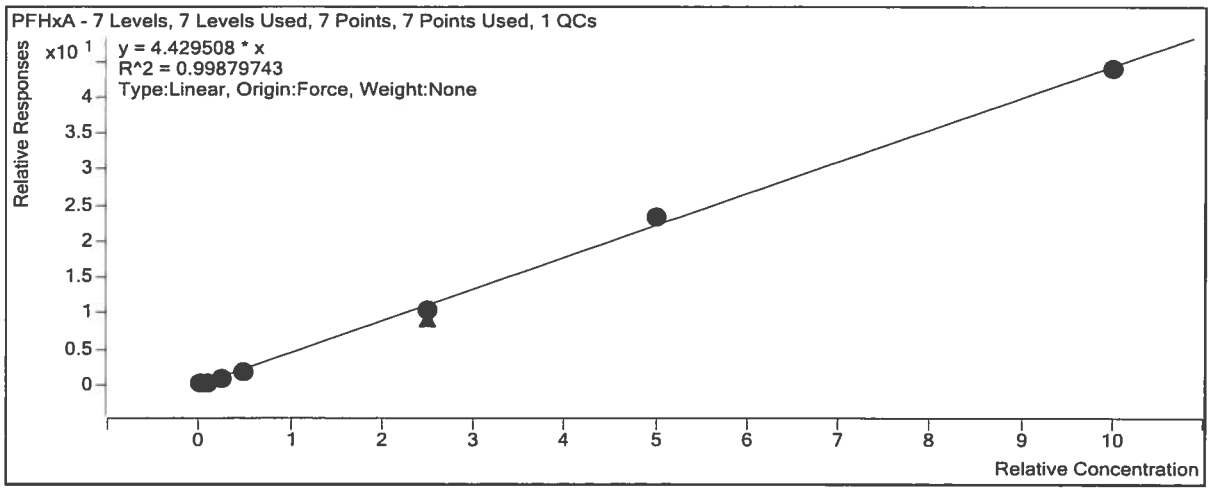
Extracted ISTD *M3PFBS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	29137	20.0000	1456.8290
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	32990	20.0000	1649.4756
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	32311	20.0000	1615.5717
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	35622	20.0000	1781.0892
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	35197	20.0000	1759.8391
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	32357	20.0000	1617.8690
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	32782	20.0000	1639.0799

Extracted ISTD *M2 4:2 FTS*

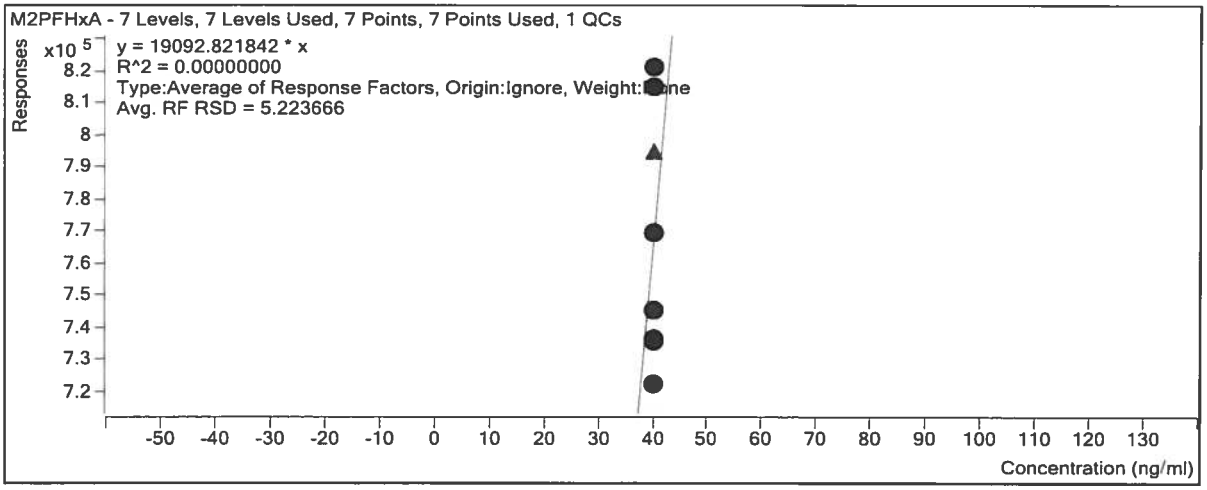
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	7075	20.0000	353.7689
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	7911	20.0000	395.5469
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	8016	20.0000	400.7868
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	8348	20.0000	417.4071
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	8155	20.0000	407.7507
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	7574	20.0000	378.7139
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	7480	20.0000	373.9802

Quantitative Analysis Calibration Report



Instrument ISTD *M2PFHxA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	736295	40.0000	18407.3626
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	769470	40.0000	19236.7549
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	821130	40.0000	20528.2603
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	815382	40.0000	20384.5533
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	735716	40.0000	18392.8990
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	745133	40.0000	18628.3356
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	722863	40.0000	18071.5872

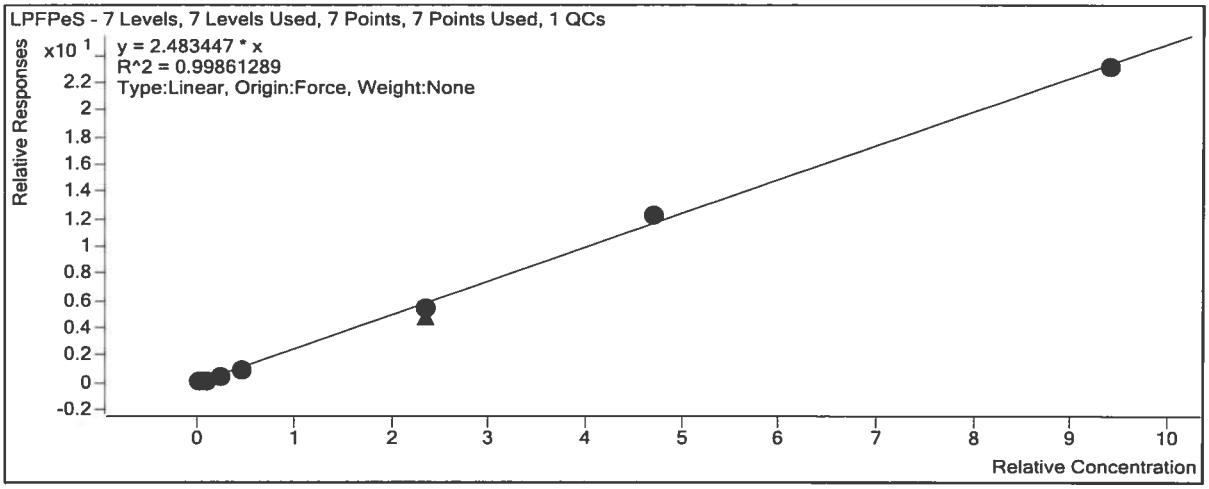


Target Compound *LPFPeS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	1748921	188.0000	2.4593



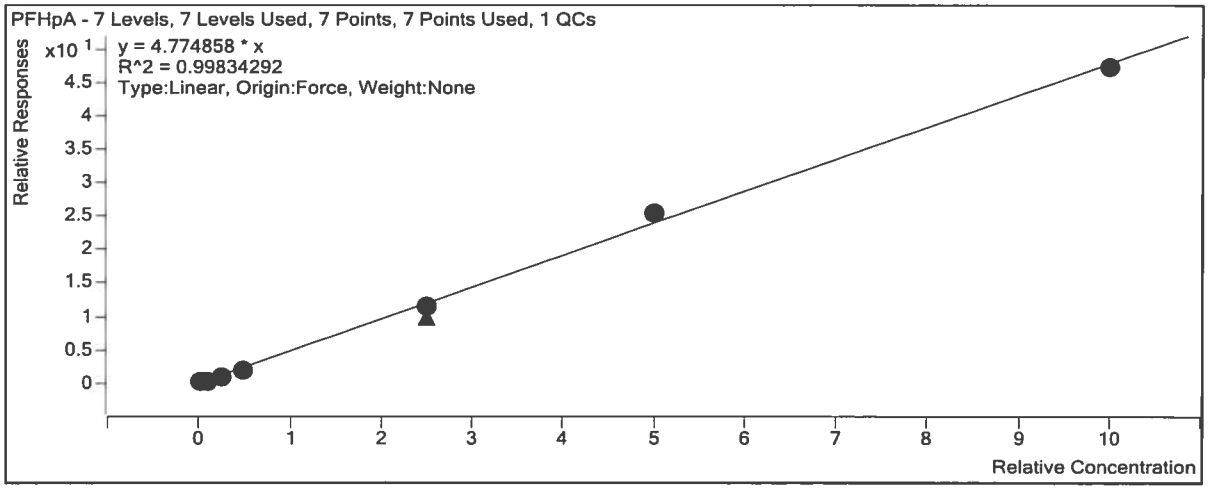
Extracted ISTD *M4PFHpA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	62934	20.0000	3146.7076
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	67108	20.0000	3355.3914
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	67294	20.0000	3364.7015
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	74367	20.0000	3718.3580
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	74370	20.0000	3718.5145
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	66499	20.0000	3324.9613
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	66642	20.0000	3332.0764

Target Compound *PFHpA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	5865	0.5000	3.7275
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	25142	2.0000	3.7465
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	71499	5.0000	4.2499
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	147234	10.0000	3.9597
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	846202	50.0000	4.5513
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	1688597	100.0000	5.0785
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Quantitative Analysis Calibration Report



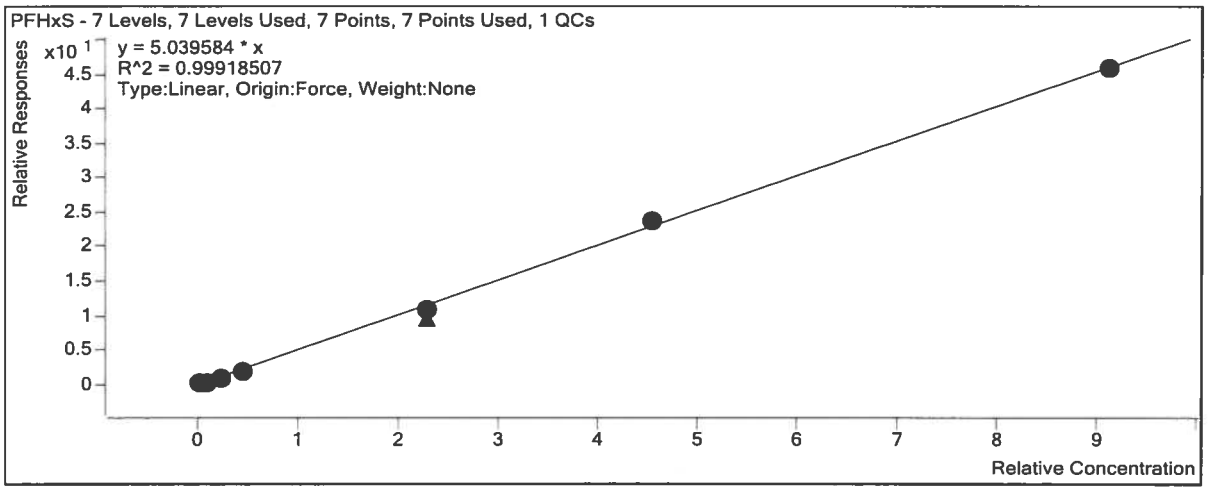
Extracted ISTD *M3PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	38375	20.0000	1918.7499
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	42356	20.0000	2117.7978
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	40873	20.0000	2043.6413
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	44984	20.0000	2249.1834
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	45228	20.0000	2261.3805
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	41771	20.0000	2088.5659
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	40550	20.0000	2027.4899

Target Compound *PFHxS*

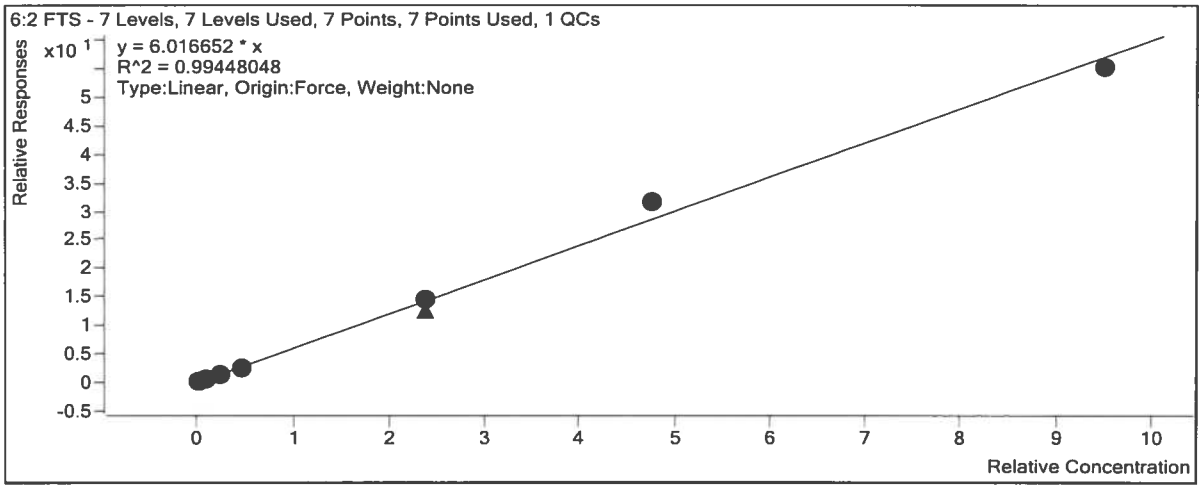
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	3686	0.4560	4.2130
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	14659	1.8240	3.7950
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	40028	4.5600	4.2953
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	83850	9.1200	4.0878
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	486424	45.6000	4.7171
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	993481	91.2000	5.2157
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	1855976	182.4000	5.0187

Quantitative Analysis Calibration Report



Target Compound *6:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	1754	0.4750	6.2599
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	6496	1.9000	5.4741
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	17189	4.7500	5.7680
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	34704	9.5000	5.2602
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	201683	47.5000	6.2491
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	397139	95.0000	6.7209
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	700377	190.0000	5.8282

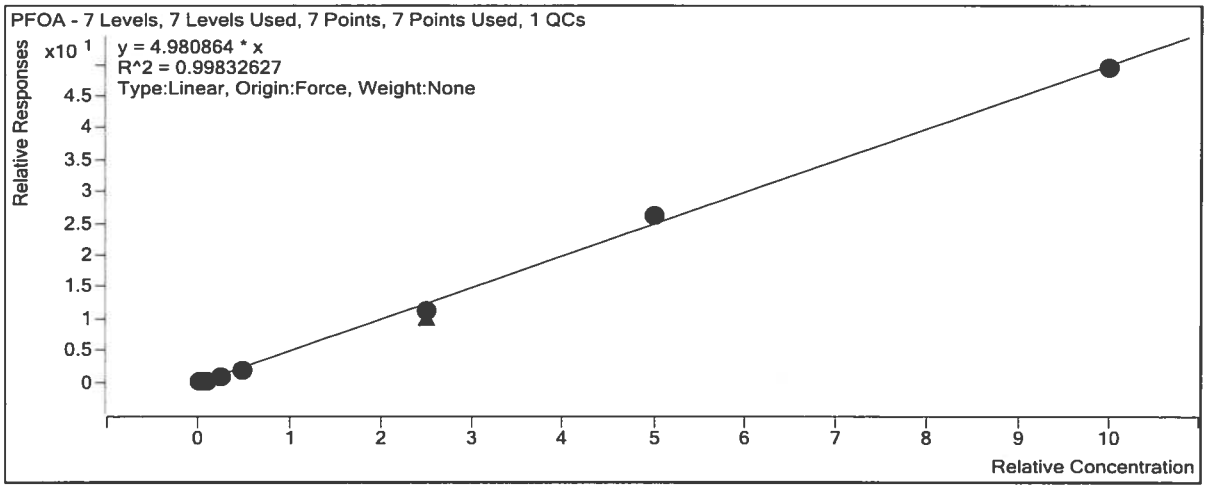


Extracted ISTD *M2 6:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

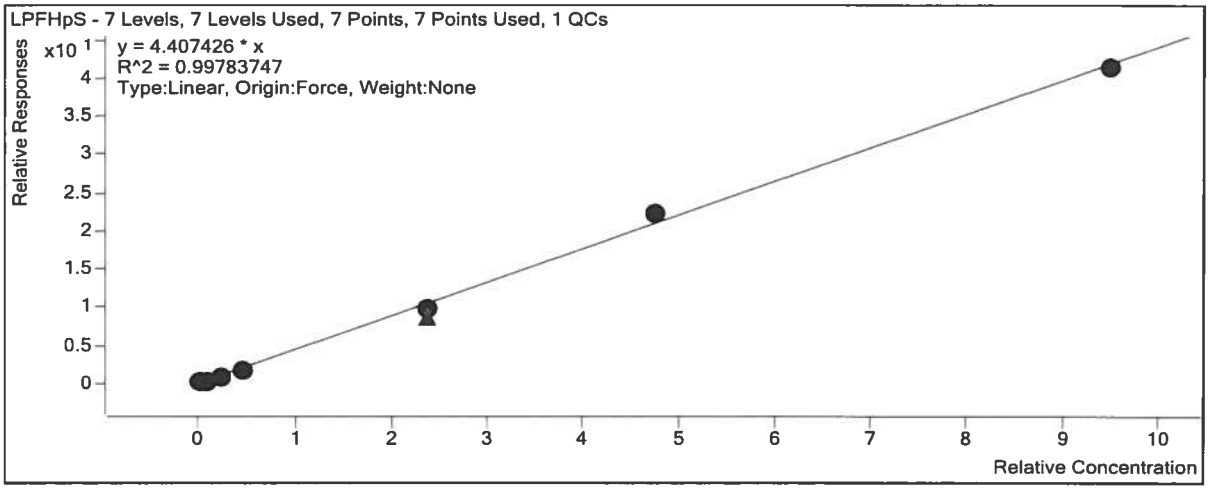
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	109732	10.0000	4.0248
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	640508	50.0000	4.5570
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	1280644	100.0000	5.2598
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	2389762	200.0000	4.9405



Target Compound *LPFHpS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	3916	0.4750	3.6200
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	16521	1.9000	3.3928
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	45230	4.7500	3.8557
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	95973	9.5000	3.7054
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	544309	47.5000	4.0764
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	1091050	95.0000	4.7170
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	2000254	190.0000	4.3529

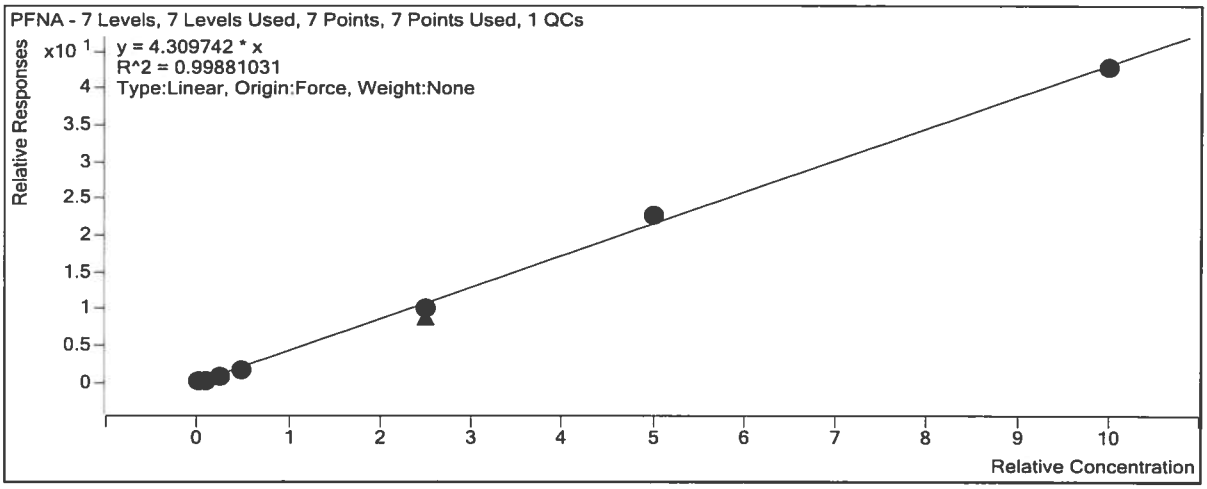
Quantitative Analysis Calibration Report



Quantitative Analysis Calibration Report

Target Compound *PFNA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	4885	0.5000	3.4174
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	19689	2.0000	3.0491
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	57337	5.0000	3.6635
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	122941	10.0000	3.5061
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	689369	50.0000	4.0564
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	1373723	100.0000	4.5227
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	2542176	200.0000	4.2749



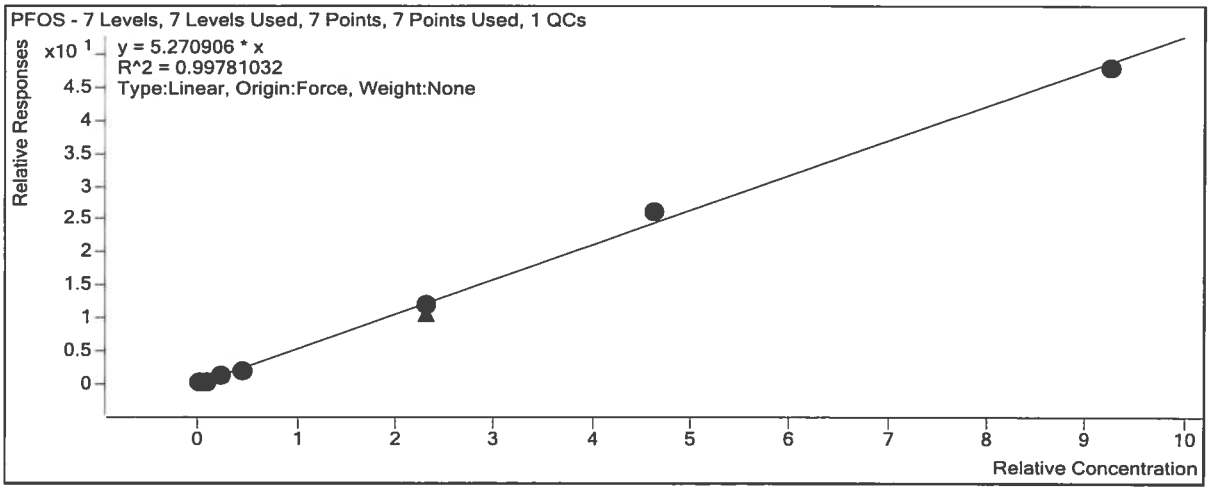
Extracted ISTD *M9PFNA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	57182	20.0000	2859.1135
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	64576	20.0000	3228.7772
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	62604	20.0000	3130.2174
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	70131	20.0000	3506.5276
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	67978	20.0000	3398.8875
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	60748	20.0000	3037.3787
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	59468	20.0000	2973.3940

Extracted ISTD *M8PFOS*

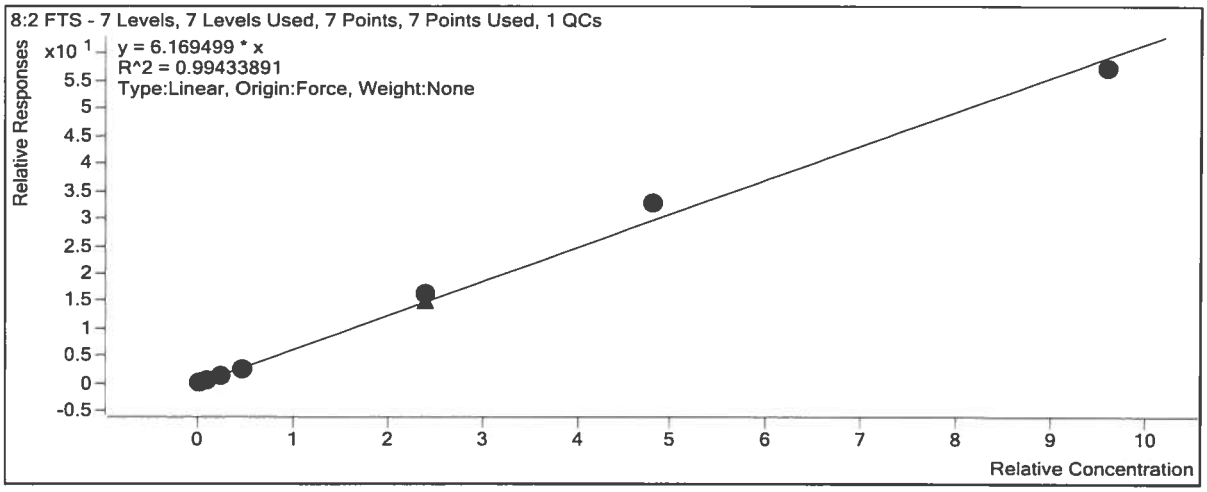
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report



Target Compound *8:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	1837	0.4800	6.1360
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	7721	1.9200	5.9197
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	19841	4.8000	6.4049
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	42901	9.6000	5.8221
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	243203	48.0000	6.8004
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	459604	96.0000	6.8294
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	787111	192.0000	5.9658



Extracted ISTD *M2 8:2 FTS*

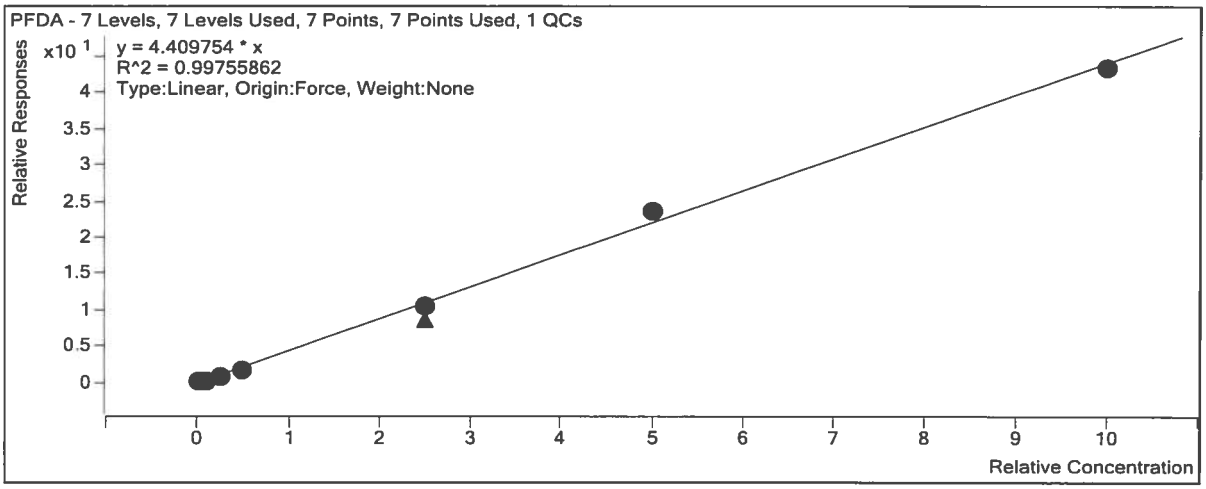
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	13743	20.0000	687.1680

Target Compound *PFDA*

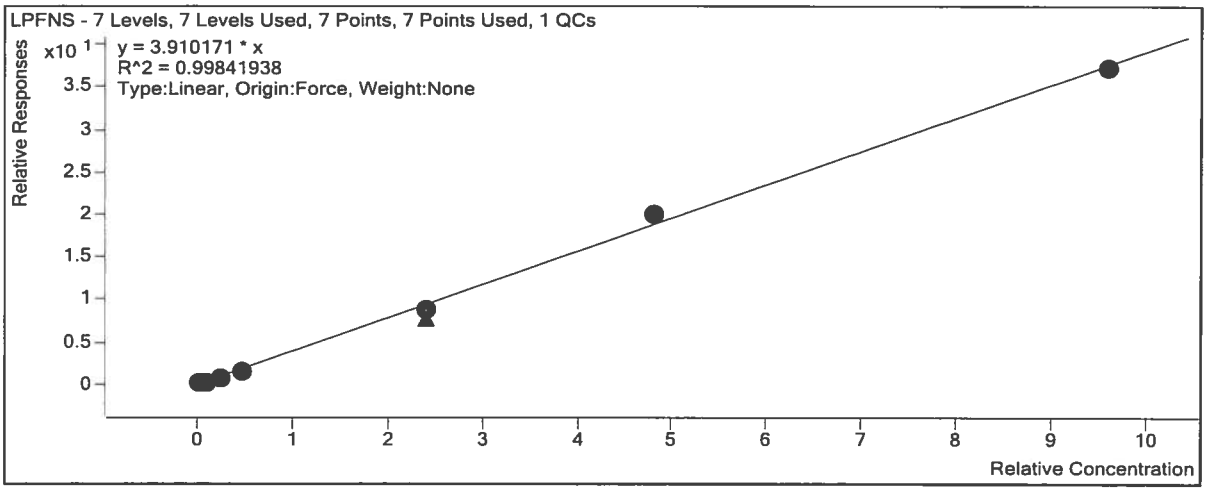
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	5481	0.5000	3.8214
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	20203	2.0000	3.2266
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	57570	5.0000	3.7757
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	119816	10.0000	3.6458
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	686734	50.0000	4.1985
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	1389033	100.0000	4.7566
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	2457985	200.0000	4.3387



Extracted ISTD *M6PFDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	57373	20.0000	2868.6745
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	62616	20.0000	3130.8108
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	60990	20.0000	3049.4927
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	65728	20.0000	3286.3752
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	65426	20.0000	3271.3221
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	58405	20.0000	2920.2425
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	56653	20.0000	2832.6403

Quantitative Analysis Calibration Report



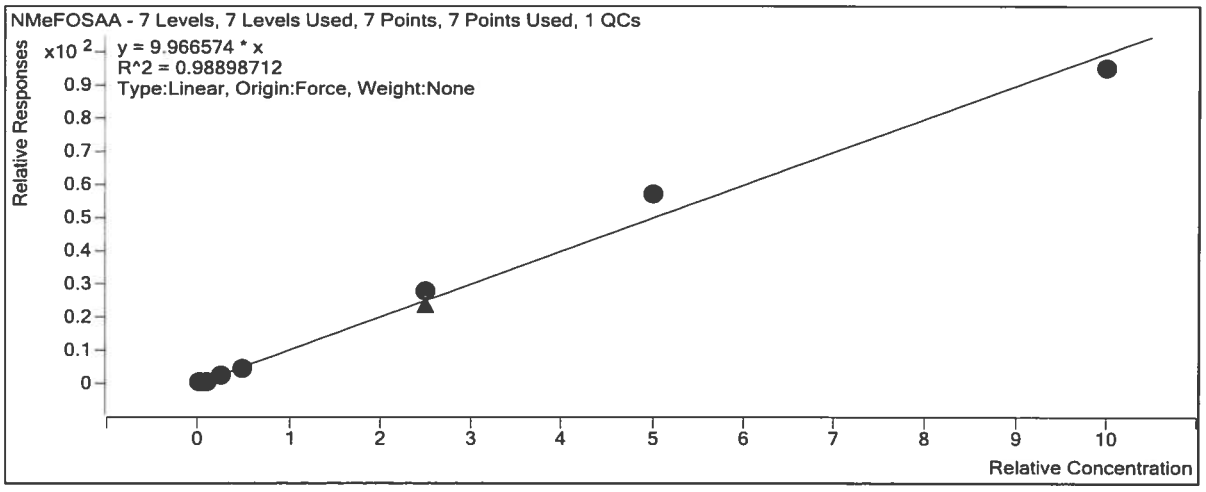
Quantitative Analysis Calibration Report

Extracted ISTD *d3-NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	6810	20.0000	340.5005
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	8191	20.0000	409.5435
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	7778	20.0000	388.9043
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	8954	20.0000	447.6766
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	8311	20.0000	415.5662
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	8245	20.0000	412.2644
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	9409	20.0000	470.4672

Target Compound *NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	1613	0.5000	9.4722
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	6543	2.0000	7.9879
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	17459	5.0000	8.9785
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	37655	10.0000	8.4111
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	232329	50.0000	11.1813
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	474063	100.0000	11.4990
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	895041	200.0000	9.5123

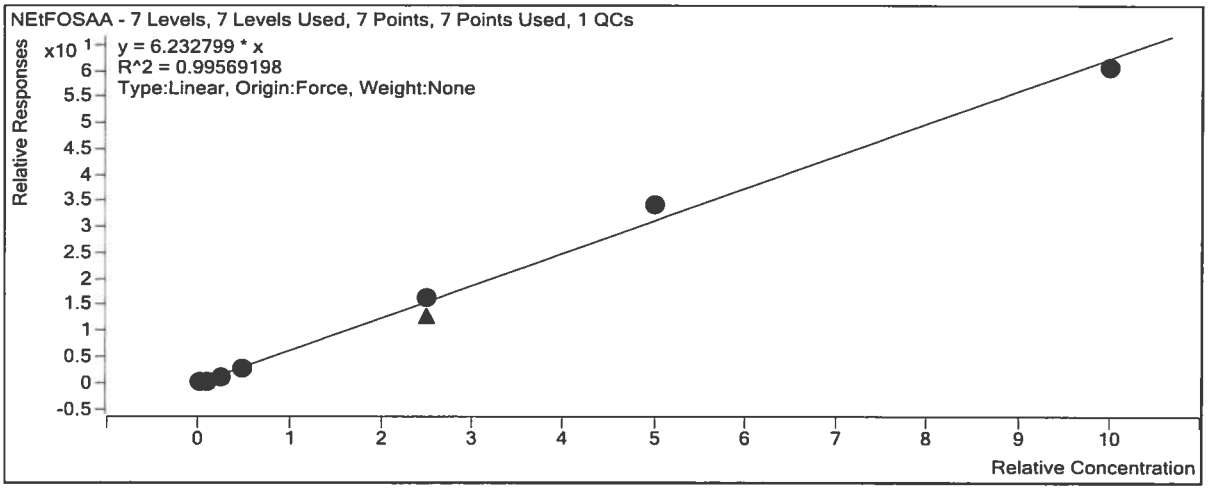


Target Compound *FOSA-I*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	210193	50.0000	6.5157
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	420398	100.0000	6.8679
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	768382	200.0000	6.0588



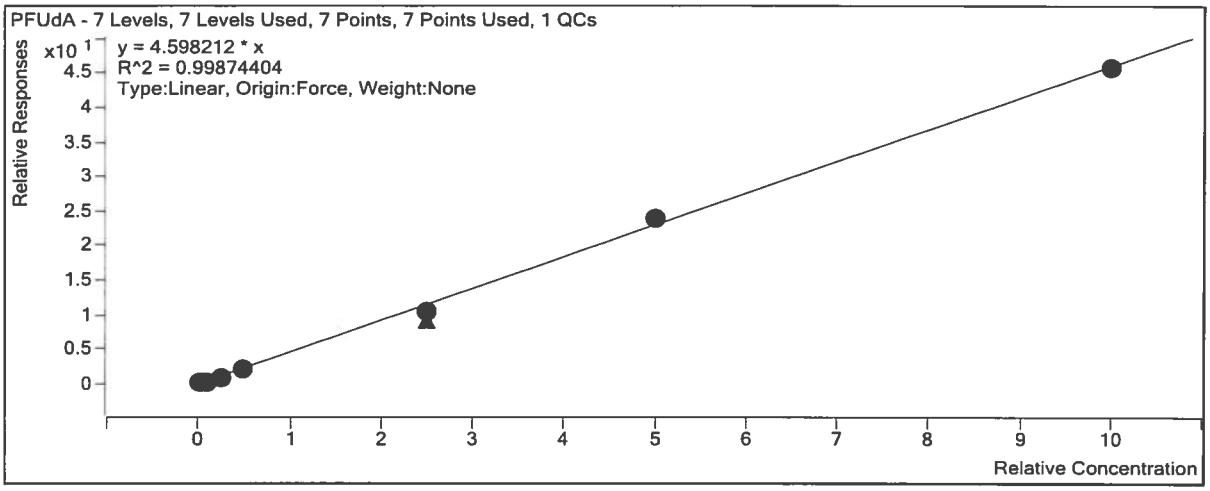
Extracted ISTD *M7PFUdA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	46284	20.0000	2314.1882
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	53581	20.0000	2679.0402
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	51723	20.0000	2586.1414
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	53572	20.0000	2678.6178
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	56315	20.0000	2815.7371
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	49088	20.0000	2454.4214
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	47466	20.0000	2373.3046

Target Compound *PFUdA*

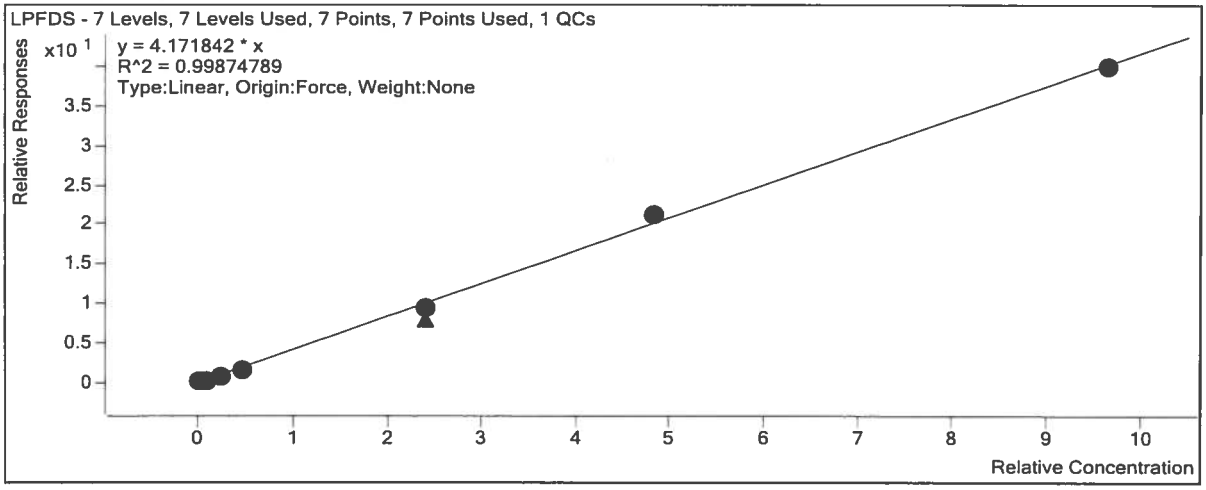
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	5021	0.5000	4.3397
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	17927	2.0000	3.3458
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	49573	5.0000	3.8338
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	108394	10.0000	4.0467
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	595653	50.0000	4.2309

D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	1181917	100.0000	4.8155
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	2168651	200.0000	4.5688



Target Compound *LPFDS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	4578	0.4825	3.3078
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	19320	1.9300	3.1973
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	52378	4.8250	3.5598
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	109225	9.6500	3.4441
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	612591	48.2500	3.8811
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	1233326	96.5000	4.3765
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	2263962	193.0000	4.1411



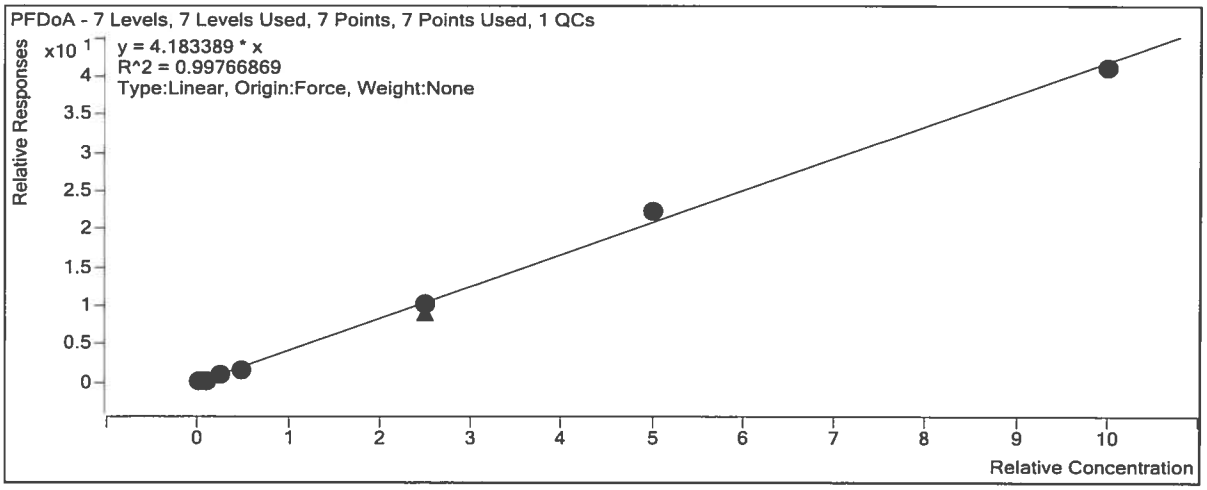
Extracted ISTD *MPFDoA*

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	42246	20.0000	2112.2871

Target Compound *PFDoA*

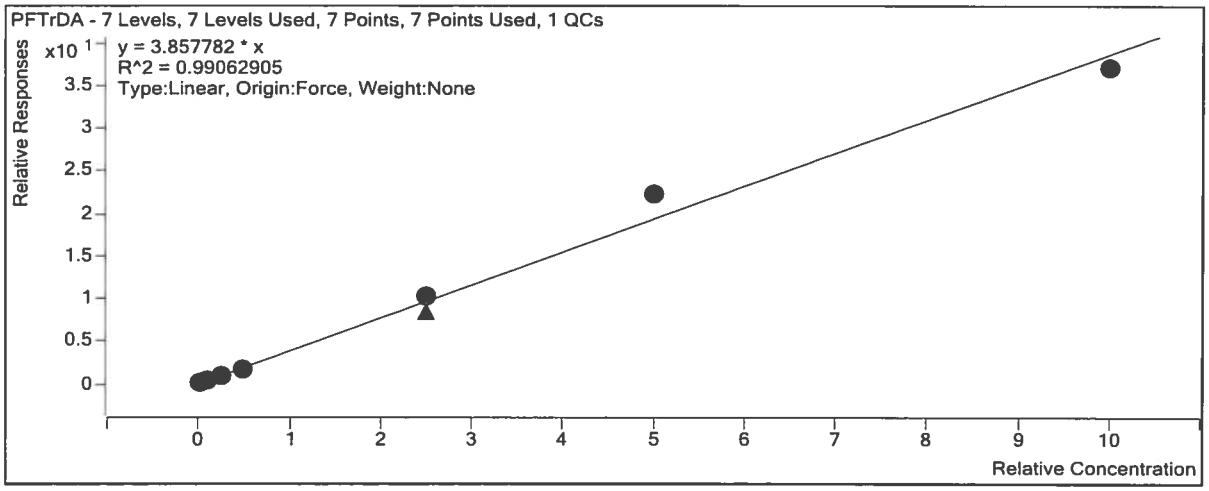
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	2938	0.5000	3.2681
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	13025	2.0000	3.0683
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	38734	5.0000	3.8565
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	77211	10.0000	3.4241
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	457256	50.0000	4.1131
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	949877	100.0000	4.5089
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	1735718	200.0000	4.1086



Target Compound *PFTrDA*

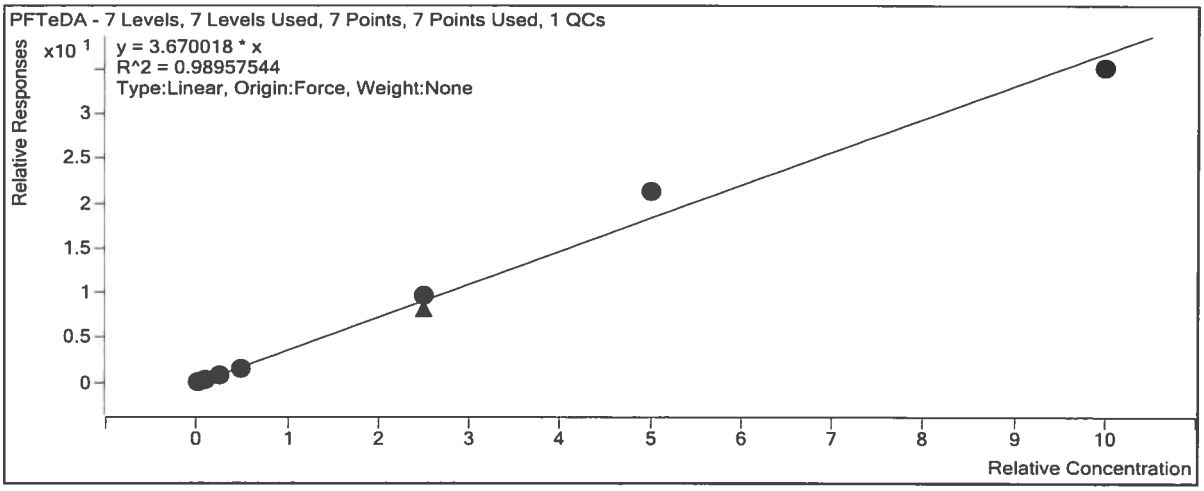
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	3531	0.5000	4.2283
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	12975	2.0000	3.3489
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	35838	5.0000	3.8041
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	77782	10.0000	3.6110
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	442808	50.0000	4.0750
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	889863	100.0000	4.4429
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	1678866	200.0000	3.6986

Quantitative Analysis Calibration Report



Target Compound *PFTeDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2190714ACAL\2190714B_01.d	Calibration	1	☑	2541	0.5000	3.0428
D:\MassHunter\Data\2190714ACAL\2190714B_02.d	Calibration	2	☑	12416	2.0000	3.2047
D:\MassHunter\Data\2190714ACAL\2190714B_03.d	Calibration	3	☑	33806	5.0000	3.5884
D:\MassHunter\Data\2190714ACAL\2190714B_04.d	Calibration	4	☑	72552	10.0000	3.3681
D:\MassHunter\Data\2190714ACAL\2190714B_05.d	Calibration	5	☑	427269	50.0000	3.9320
D:\MassHunter\Data\2190714ACAL\2190714B_06.d	Calibration	6	☑	851405	100.0000	4.2508
D:\MassHunter\Data\2190714ACAL\2190714B_07.d	Calibration	7	☑	1592920	200.0000	3.5093



Extracted ISTD *M2PFTeDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

4I

ORGANICS INSTRUMENT BLANK

Report No:	219071222	Instrument ID:	QQQ1
Analysis Date:	07/17/2019 19:07	Lab File ID:	2190717A_01.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	663954

ANALYTE	*UNITS*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*	*#*
4:2 FTS	ng/L	4.00	U	1.52	4.00	10.0	
6:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.79	4.00	10.0	
8:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.63	4.00	10.0	
NEtFOSAA	ng/L	8.00	U	5.38	8.00	10.0	
NMeFOSAA	ng/L	8.00	U	4.60	8.00	10.0	
PFNS	ng/L	4.00	U	2.11	4.00	10.0	
PFPeS	ng/L	4.00	U	2.07	4.00	10.0	
Perfluoro-1-heptanesulfonate	ng/L	4.00	U	2.01	4.00	10.0	
Perfluorobutanesulfonic acid	ng/L	4.00	U	1.47	4.00	10.0	
Perfluorobutanoic acid	ng/L	4.00	U	2.13	4.00	10.0	
Perfluorodecane Sulfonate	ng/L	4.00	U	2.17	4.00	10.0	
Perfluorodecanoic acid	ng/L	4.00	U	1.65	4.00	10.0	
Perfluorododecanoic acid	ng/L	4.00	U	2.45	4.00	10.0	
Perfluoroheptanoic acid	ng/L	4.00	U	1.85	4.00	10.0	
Perfluorohexanesulfonic acid	ng/L	4.00	U	1.64	4.00	10.0	
Perfluorohexanoic acid	ng/L	4.00	U	1.94	4.00	10.0	
Perfluorononanoic acid	ng/L	4.00	U	1.68	4.00	10.0	
Perfluorooctane Sulfonamide	ng/L	4.00	U	2.63	4.00	10.0	
Perfluorooctane Sulfonate	ng/L	4.00	U	1.70	4.00	10.0	
Perfluorooctanoic acid	ng/L	4.00	U	1.80	4.00	10.0	
Perfluoropentanoic acid	ng/L	4.00	U	2.35	4.00	10.0	
Perfluorotetradecanoic acid	ng/L	4.00	U	2.76	4.00	10.0	
Perfluorotridecanoic acid	ng/L	4.00	U	2.56	4.00	10.0	
Perfluoroundecanoic acid	ng/L	4.00	U	1.86	4.00	10.0	

* - Result greater than 1/2 LOQ

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	219071222	Instrument ID:	QQQ1
Analysis Date:	07/17/2019 19:19	Lab File ID:	2190717A_02.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	663954

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
4:2 FTS	ng/L	7.80	7.27	93	70	130	
6:2 Fluorotelomer sulfonate	ng/L	7.93	7.67	97	70	130	
8:2 Fluorotelomer sulfonate	ng/L	8.00	9.00	113	70	130	
Perfluorooctane Sulfonamide	ng/L	8.33	7.13	85	70	130	
NEtFOSAA	ng/L	8.33	7.07	85	70	130	
NMeFOSAA	ng/L	8.33	7.80	94	70	130	
Perfluorobutanoic acid	ng/L	8.33	6.93	83	70	130	
Perfluorobutanesulfonic acid	ng/L	7.40	6.61	90	70	130	
Perfluorodecanoic acid	ng/L	8.33	7.60	91	70	130	
Perfluorodecane Sulfonate	ng/L	8.07	5.87	73	70	130	
Perfluorododecanoic acid	ng/L	8.33	7.80	94	70	130	
Perfluoroheptanoic acid	ng/L	8.33	7.60	91	70	130	
Perfluoro-1-heptanesulfonate	ng/L	7.93	6.07	77	70	130	
Perfluorohexanoic acid	ng/L	8.33	7.27	87	70	130	
Perfluorohexanesulfonic acid	ng/L	7.60	6.55	86	70	130	
Perfluorononanoic acid	ng/L	8.33	7.00	84	70	130	
PFNS	ng/L	8.00	5.97	75	70	130	
Perfluorooctanoic acid	ng/L	8.33	6.87	83	70	130	
Perfluorooctane Sulfonate	ng/L	7.73	6.87	89	70	130	
Perfluoropentanoic acid	ng/L	8.33	7.07	85	70	130	
PFPeS	ng/L	7.87	6.28	80	70	130	
Perfluorotetradecanoic acid	ng/L	8.33	7.60	91	70	130	
Perfluorotridecanoic acid	ng/L	8.33	8.33	100	70	130	
Perfluoroundecanoic acid	ng/L	8.33	7.40	89	70	130	

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219071222	Instrument ID:	QQQ1
Analysis Date:	07/17/2019 20:41	Lab File ID:	2190717A_09.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	663920

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
4:2 FTS	ng/L	46800	47700	102	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	49800	105	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	53700	112	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	46900	94	70	130	
NEtFOSAA	ng/L	50000	52300	105	70	130	
NMeFOSAA	ng/L	50000	52200	104	70	130	
Perfluorobutanoic acid	ng/L	50000	47300	95	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	43400	98	70	130	
Perfluorodecanoic acid	ng/L	50000	47000	94	70	130	
Perfluorodecane Sulfonate	ng/L	48300	43200	90	70	130	
Perfluorododecanoic acid	ng/L	50000	48800	98	70	130	
Perfluoroheptanoic acid	ng/L	50000	48600	97	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	44600	94	70	130	
Perfluorohexanoic acid	ng/L	50000	47700	95	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	43600	96	70	130	
Perfluorononanoic acid	ng/L	50000	48800	98	70	130	
PFNS	ng/L	48000	44800	93	70	130	
Perfluorooctanoic acid	ng/L	50000	47700	95	70	130	
Perfluorooctane Sulfonate	ng/L	46300	42600	92	70	130	
Perfluoropentanoic acid	ng/L	50000	43900	88	70	130	
PFPeS	ng/L	47000	46300	98	70	130	
Perfluorotetradecanoic acid	ng/L	50000	53600	107	70	130	
Perfluorotridecanoic acid	ng/L	50000	55500	111	70	130	
Perfluoroundecanoic acid	ng/L	50000	49900	100	70	130	

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219071222	Instrument ID:	QQQ1
Analysis Date:	07/17/2019 22:56	Lab File ID:	2190717A_21.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	663920

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
4:2 FTS	ng/L	46800	46300	99	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	49300	104	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	54200	113	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	47600	95	70	130	
NEtFOSAA	ng/L	50000	57200	114	70	130	
NMeFOSAA	ng/L	50000	53000	106	70	130	
Perfluorobutanoic acid	ng/L	50000	47500	95	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	43300	98	70	130	
Perfluorodecanoic acid	ng/L	50000	48900	98	70	130	
Perfluorodecane Sulfonate	ng/L	48300	45000	93	70	130	
Perfluorododecanoic acid	ng/L	50000	48800	98	70	130	
Perfluoroheptanoic acid	ng/L	50000	50100	100	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	44600	94	70	130	
Perfluorohexanoic acid	ng/L	50000	46400	93	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	42900	94	70	130	
Perfluorononanoic acid	ng/L	50000	47400	95	70	130	
PFNS	ng/L	48000	43400	91	70	130	
Perfluorooctanoic acid	ng/L	50000	47200	94	70	130	
Perfluorooctane Sulfonate	ng/L	46300	41700	90	70	130	
Perfluoropentanoic acid	ng/L	50000	44200	88	70	130	
PFPeS	ng/L	47000	45900	98	70	130	
Perfluorotetradecanoic acid	ng/L	50000	56500	113	70	130	
Perfluorotridecanoic acid	ng/L	50000	59300	119	70	130	
Perfluoroundecanoic acid	ng/L	50000	48000	96	70	130	

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219071222	Instrument ID:	QQQ1
Analysis Date:	07/18/2019 00:27	Lab File ID:	2190717A_29.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	663920

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
4:2 FTS	ng/L	46800	44200	94	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	48700	103	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	53300	111	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	47600	95	70	130	
NEtFOSAA	ng/L	50000	61800	124	70	130	
NMeFOSAA	ng/L	50000	49700	99	70	130	
Perfluorobutanoic acid	ng/L	50000	47300	95	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	42900	97	70	130	
Perfluorodecanoic acid	ng/L	50000	48000	96	70	130	
Perfluorodecane Sulfonate	ng/L	48300	45200	94	70	130	
Perfluorododecanoic acid	ng/L	50000	49900	100	70	130	
Perfluoroheptanoic acid	ng/L	50000	48300	97	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	44700	94	70	130	
Perfluorohexanoic acid	ng/L	50000	46900	94	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	42300	93	70	130	
Perfluorononanoic acid	ng/L	50000	48300	97	70	130	
PFNS	ng/L	48000	43800	91	70	130	
Perfluorooctanoic acid	ng/L	50000	47600	95	70	130	
Perfluorooctane Sulfonate	ng/L	46300	40400	87	70	130	
Perfluoropentanoic acid	ng/L	50000	44000	88	70	130	
PFPeS	ng/L	47000	46600	99	70	130	
Perfluorotetradecanoic acid	ng/L	50000	54400	109	70	130	
Perfluorotridecanoic acid	ng/L	50000	58600	117	70	130	
Perfluoroundecanoic acid	ng/L	50000	47900	96	70	130	

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219071222	Instrument ID:	QQQ1
Analysis Date:	07/18/2019 03:17	Lab File ID:	2190717A_44.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	663920

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
4:2 FTS	ng/L	46800	43100	92	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	48800	103	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	55200	115	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	48100	96	70	130	
NEtFOSAA	ng/L	50000	52300	105	70	130	
NMeFOSAA	ng/L	50000	53000	106	70	130	
Perfluorobutanoic acid	ng/L	50000	46900	94	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	42800	97	70	130	
Perfluorodecanoic acid	ng/L	50000	48400	97	70	130	
Perfluorodecane Sulfonate	ng/L	48300	45500	94	70	130	
Perfluorododecanoic acid	ng/L	50000	50200	100	70	130	
Perfluoroheptanoic acid	ng/L	50000	48800	98	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	45300	95	70	130	
Perfluorohexanoic acid	ng/L	50000	47000	94	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	41900	92	70	130	
Perfluorononanoic acid	ng/L	50000	48400	97	70	130	
PFNS	ng/L	48000	44500	93	70	130	
Perfluorooctanoic acid	ng/L	50000	46900	94	70	130	
Perfluorooctane Sulfonate	ng/L	46300	41500	90	70	130	
Perfluoropentanoic acid	ng/L	50000	43900	88	70	130	
PFPeS	ng/L	47000	46500	99	70	130	
Perfluorotetradecanoic acid	ng/L	50000	56000	112	70	130	
Perfluorotridecanoic acid	ng/L	50000	56300	113	70	130	
Perfluoroundecanoic acid	ng/L	50000	48600	97	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219071222	Instrument ID:	QQQ1
Analysis Date:	07/18/2019 05:22	Lab File ID:	2190717A_55.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	663954

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
4:2 FTS	ng/L	46800	44000	94	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	48200	102	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	55800	116	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	47500	95	70	130	
NEtFOSAA	ng/L	50000	55300	111	70	130	
NMeFOSAA	ng/L	50000	51500	103	70	130	
Perfluorobutanoic acid	ng/L	50000	47000	94	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	42900	97	70	130	
Perfluorodecanoic acid	ng/L	50000	48800	98	70	130	
Perfluorodecane Sulfonate	ng/L	48300	45000	93	70	130	
Perfluorododecanoic acid	ng/L	50000	53100	106	70	130	
Perfluoroheptanoic acid	ng/L	50000	49600	99	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	45400	95	70	130	
Perfluorohexanoic acid	ng/L	50000	46900	94	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	42900	94	70	130	
Perfluorononanoic acid	ng/L	50000	47700	95	70	130	
PFNS	ng/L	48000	43500	91	70	130	
Perfluorooctanoic acid	ng/L	50000	47500	95	70	130	
Perfluorooctane Sulfonate	ng/L	46300	38800	84	70	130	
Perfluoropentanoic acid	ng/L	50000	45100	90	70	130	
PFPeS	ng/L	47000	46000	98	70	130	
Perfluorotetradecanoic acid	ng/L	50000	56800	114	70	130	
Perfluorotridecanoic acid	ng/L	50000	60600	121	70	130	
Perfluoroundecanoic acid	ng/L	50000	48300	97	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219071222	Instrument ID:	QQQ1
Analysis Date:	07/18/2019 08:02	Lab File ID:	2190717A_69.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	663954

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
4:2 FTS	ng/L	46800	44300	95	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	47300	100	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	53300	111	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	46300	93	70	130	
NEtFOSAA	ng/L	50000	51500	103	70	130	
NMeFOSAA	ng/L	50000	48700	97	70	130	
Perfluorobutanoic acid	ng/L	50000	47100	94	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	43700	99	70	130	
Perfluorodecanoic acid	ng/L	50000	47500	95	70	130	
Perfluorodecane Sulfonate	ng/L	48300	44700	93	70	130	
Perfluorododecanoic acid	ng/L	50000	49900	100	70	130	
Perfluoroheptanoic acid	ng/L	50000	47800	96	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	44400	94	70	130	
Perfluorohexanoic acid	ng/L	50000	46100	92	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	42700	94	70	130	
Perfluorononanoic acid	ng/L	50000	47900	96	70	130	
PFNS	ng/L	48000	44400	93	70	130	
Perfluorooctanoic acid	ng/L	50000	46200	92	70	130	
Perfluorooctane Sulfonate	ng/L	46300	37500	81	70	130	
Perfluoropentanoic acid	ng/L	50000	44800	90	70	130	
PFPeS	ng/L	47000	44000	94	70	130	
Perfluorotetradecanoic acid	ng/L	50000	53000	106	70	130	
Perfluorotridecanoic acid	ng/L	50000	57800	116	70	130	
Perfluoroundecanoic acid	ng/L	50000	46800	94	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219071222	Instrument ID:	QQQ1
Analysis Date:	07/18/2019 09:21	Lab File ID:	2190717A_77.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	663954

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
4:2 FTS	ng/L	46800	45800	98	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	48700	103	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	56300	117	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	45300	91	70	130	
NEtFOSAA	ng/L	50000	55400	111	70	130	
NMeFOSAA	ng/L	50000	51300	103	70	130	
Perfluorobutanoic acid	ng/L	50000	46600	93	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	43500	98	70	130	
Perfluorodecanoic acid	ng/L	50000	48700	97	70	130	
Perfluorodecane Sulfonate	ng/L	48300	45900	95	70	130	
Perfluorododecanoic acid	ng/L	50000	50700	101	70	130	
Perfluoroheptanoic acid	ng/L	50000	48500	97	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	44000	93	70	130	
Perfluorohexanoic acid	ng/L	50000	47500	95	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	42800	94	70	130	
Perfluorononanoic acid	ng/L	50000	46100	92	70	130	
PFNS	ng/L	48000	43200	90	70	130	
Perfluorooctanoic acid	ng/L	50000	46300	93	70	130	
Perfluorooctane Sulfonate	ng/L	46300	39500	85	70	130	
Perfluoropentanoic acid	ng/L	50000	44700	89	70	130	
PFPeS	ng/L	47000	46500	99	70	130	
Perfluorotetradecanoic acid	ng/L	50000	53200	106	70	130	
Perfluorotridecanoic acid	ng/L	50000	57100	114	70	130	
Perfluoroundecanoic acid	ng/L	50000	46900	94	70	130	

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219071222	Instrument ID:	QQQ1
Analysis Date:	07/18/2019 10:10	Lab File ID:	2190717A_80.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	663954

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
4:2 FTS	ng/L	46800	44300	95	70	130	
6:2 Fluorotelomer sulfonate	ng/L	47500	48200	102	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	55000	115	70	130	
Perfluorooctane Sulfonamide	ng/L	50000	45700	91	70	130	
NEtFOSAA	ng/L	50000	54500	109	70	130	
NMeFOSAA	ng/L	50000	52700	105	70	130	
Perfluorobutanoic acid	ng/L	50000	47100	94	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	42900	97	70	130	
Perfluorodecanoic acid	ng/L	50000	47400	95	70	130	
Perfluorodecane Sulfonate	ng/L	48300	42600	88	70	130	
Perfluorododecanoic acid	ng/L	50000	51000	102	70	130	
Perfluoroheptanoic acid	ng/L	50000	48500	97	70	130	
Perfluoro-1-heptanesulfonate	ng/L	47500	46100	97	70	130	
Perfluorohexanoic acid	ng/L	50000	46300	93	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	42500	93	70	130	
Perfluorononanoic acid	ng/L	50000	46900	94	70	130	
PFNS	ng/L	48000	44000	92	70	130	
Perfluorooctanoic acid	ng/L	50000	47900	96	70	130	
Perfluorooctane Sulfonate	ng/L	46300	37900	82	70	130	
Perfluoropentanoic acid	ng/L	50000	44400	89	70	130	
PFPeS	ng/L	47000	45700	97	70	130	
Perfluorotetradecanoic acid	ng/L	50000	51900	104	70	130	
Perfluorotridecanoic acid	ng/L	50000	57900	116	70	130	
Perfluoroundecanoic acid	ng/L	50000	46500	93	70	130	

8I

INJECTION INTERNAL STANDARD AREA SUMMARY

Report No:	219071222	Standard ID:	1450 (ISC)
Analyst:	BMH	Instrument ID:	QQQ1
Analysis Date:	07/17/19 19:19	Lab File ID:	2190717A_02.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	663954

	M2PFDA	M2PFHxA	M2PFOA	M4PFOS
	Area	*Area*	*Area*	*Area*
STANDARD	247034	640531	223673	178375

CLIENT SAMPLE ID	*GCAL SAMP ID*		#		#		#		#
MB1943742	1943742	253128		725592		244205		209448	
LCS1943743	1943743	242777		716535		241554		206505	
LCSD1943744	1943744	258815		719463		235533		209229	
CS-Decon Water	21907122201	241825		703795		227548		201499	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

LCMS1 Run Log

Analyst:	BMH	Expiration
Batch:	2191130A	Date
Current ICAL Bath:	2191130ACAL/2191130ACALDW	Date
20mM Amm Acetate	010-18-8	12/2/2019
Methanol	2128497	8/31/2024
Calibration Std	010-18-5	5/29/2020
ICV Std	010-6-5	4/9/2020
EIS Mix	010-18-4	5/27/2020

Name	Data File	Type	Acq. Date-Time	Comment	Dil.
MeOH Shot	2191130A_01.d	Method Blank	11/30/2019 9:42	Instrument idle/MeOH Shot	1
1201	2191130A_02.d	Cal	11/30/2019 9:53		1
1202	2191130A_03.d	Cal	11/30/2019 10:05		1
1203	2191130A_04.d	Cal	11/30/2019 10:16		1
1204	2191130A_05.d	Cal	11/30/2019 10:27		1
1205	2191130A_06.d	Cal	11/30/2019 10:38		1
1206	2191130A_07.d	Cal	11/30/2019 10:50		1
1207	2191130A_08.d	Cal	11/30/2019 11:01		1
1600	2191130A_10.d	QC	11/30/2019 11:45		1
1450	2191130A_11.d	QC	11/30/2019 11:56		1
1500	2191130A_12.d	Sample	11/30/2019 12:08		1
MeOH Shot	2191130A_13.d	Method Blank	11/30/2019 12:41	Instrument idle/MeOH Shot	1
21911091007	2191130A_14.d	Sample	11/30/2019 12:52	671111	5
21911091008	2191130A_15.d	Sample	11/30/2019 13:03	671111	5
21911091009	2191130A_16.d	Sample	11/30/2019 13:14	671111	5
21911091013	2191130A_17.d	Sample	11/30/2019 13:26	671111	5
1985361	2191130A_18.d	Sample	11/30/2019 13:37	671951	1
1985362	2191130A_19.d	QC	11/30/2019 13:49	671951	1
1985363	2191130A_20.d	QC	11/30/2019 14:00	671951	1
21911215301	2191130A_21.d	Sample	11/30/2019 14:11	671951	1
21911215302	2191130A_22.d	Sample	11/30/2019 14:23	671951	1
21911215303	2191130A_23.d	Sample	11/30/2019 14:34	671951	1

21911215304	2191130A_24.d	QC	11/30/2019 14:45	671951	1
21911215305	2191130A_25.d	QC	11/30/2019 14:56	671951	1
1400	2191130A_26.d	QC	11/30/2019 15:08		1
21911215306	2191130A_27.d	Sample	11/30/2019 15:19	671951	1
21911215307	2191130A_28.d	Sample	11/30/2019 15:31	671951	1
21911220801	2191130A_29.d	Sample	11/30/2019 15:42	671951	1
21911220802	2191130A_30.d	Sample	11/30/2019 15:53	671951	1
21911220804	2191130A_31.d	Sample	11/30/2019 16:05	671951	1
21911220805	2191130A_32.d	Sample	11/30/2019 16:16	671951	1
21911220806	2191130A_33.d	Sample	11/30/2019 16:27	671951	1
21911220807	2191130A_34.d	QC	11/30/2019 16:39	671951	1
21911220808	2191130A_35.d	QC	11/30/2019 16:50	671951	1
21911220809	2191130A_36.d	Sample	11/30/2019 17:01	671951	1
21911220810	2191130A_37.d	Sample	11/30/2019 17:13	671951	1
21911220811	2191130A_38.d	Sample	11/30/2019 17:24	671951	1
1400	2191130A_39.d	QC	11/30/2019 17:35		1
21911220512	2191130A_40.d	Sample	11/30/2019 17:47	671951	1
21911220803	2191130A_41.d	Sample	11/30/2019 17:58	671951	1
21911220701	2191130A_42.d	Sample	11/30/2019 18:10	671951	1
1980920	2191130A_43.d	Sample	11/30/2019 18:21	671110	1
1980921	2191130A_44.d	QC	11/30/2019 18:32	671110	1
MeOH Shot	2191130A_45.d	Method Blank	11/30/2019 18:48	Instrument idle/MeOH Shot	1
1400	2191130A_46.d	QC	11/30/2019 18:59	672357	1
1987282	2191130A_47.d	Sample	11/30/2019 19:10	672357	1
1987283	2191130A_48.d	QC	11/30/2019 19:22	672357	1
1987284	2191130A_49.d	QC	11/30/2019 19:33	672357	1
21911291401	2191130A_50.d	Sample	11/30/2019 19:44	672357	1
21911291402	2191130A_51.d	Sample	11/30/2019 19:56	672357	1
21911291403	2191130A_52.d	Sample	11/30/2019 20:07	672357	1
21911291404	2191130A_53.d	Sample	11/30/2019 20:18	672357	1
21911291601	2191130A_54.d	Sample	11/30/2019 20:30	672357	1
21911291602	2191130A_55.d	Sample	11/30/2019 20:41	672357	1
21911291603	2191130A_56.d	Sample	11/30/2019 20:52	672357	1
21911291605	2191130A_57.d	Sample	11/30/2019 21:04	672357	1

21911291606	2191130A_58.d	Sample	11/30/2019 21:15	672357	1
21911291607	2191130A_59.d	Sample	11/30/2019 21:26	672357	1
1400	2191130A_60.d	QC	11/30/2019 21:38		1
MeOH Shot	2191130A_61.d	Method Blank	12/1/2019 1:13	Instrument idle/MeOH Shot	1
1987418	2191130A_62.d	Sample	12/1/2019 1:24	672394	1
1987419	2191130A_63.d	QC	12/1/2019 1:35	672394	1
1987420	2191130A_64.d	QC	12/1/2019 1:47	672394	1
21911300901	2191130A_65.d	Sample	12/1/2019 1:58	672394	1
21911300902	2191130A_66.d	Sample	12/1/2019 2:09	672394	1
21911300903	2191130A_67.d	Sample	12/1/2019 2:21	672394	1
21911300904	2191130A_68.d	Sample	12/1/2019 2:32	672394	1
21911300905	2191130A_69.d	Sample	12/1/2019 2:43	672394	1
1400	2191130A_71.d	QC	12/1/2019 3:09		1
1980922	2191130A_72.d	QC	12/1/2019 3:20	671110	1
21911091002	2191130A_73.d	Sample	12/1/2019 3:31	671110	1
21911091005	2191130A_74.d	Sample	12/1/2019 3:42	671110	1
21911091006	2191130A_75.d	Sample	12/1/2019 3:54	671110	1
21911091010	2191130A_76.d	Sample	12/1/2019 4:05	671110	1
21911091011	2191130A_77.d	QC	12/1/2019 4:17	671110	1
21911091012	2191130A_78.d	QC	12/1/2019 4:28	671110	1
21911091014	2191130A_79.d	Sample	12/1/2019 4:39	671110	1
21911091017	2191130A_80.d	Sample	12/1/2019 4:51	671110	1
21911091018	2191130A_81.d	QC	12/1/2019 5:02	671110	1
21911091019	2191130A_82.d	QC	12/1/2019 5:13	671110	1
21911091020	2191130A_83.d	Sample	12/1/2019 5:25	671110	1
MeOH Shot	2191130A_84.d	Method Blank	12/1/2019 5:53	Instrument idle/MeOH Shot	1
1400	2191130A_85.d	QC	12/1/2019 6:03		1
21911301101	2191130A_86.d	Sample	12/1/2019 6:15	672394	1
21911301102	2191130A_87.d	Sample	12/1/2019 6:26	672394	1
21911301103	2191130A_88.d	Sample	12/1/2019 6:37	672394	1
21911301104	2191130A_89.d	Sample	12/1/2019 6:49	672394	1
21911301105	2191130A_90.d	Sample	12/1/2019 7:00	672394	1
21911301106	2191130A_91.d	Sample	12/1/2019 7:11	672394	1
21911301107	2191130A_92.d	QC	12/1/2019 7:23	672394	1

21911301108	2191130A_93.d	QC	12/1/2019 7:34	672394	1
21911301109	2191130A_94.d	Sample	12/1/2019 7:46	672394	1
1400	2191130A_95.d	QC	12/1/2019 7:57		1
21911301101 5x	2191130A_96.d	Sample	12/1/2019 8:08	672394	5
MeOH Shot	2191130A_97.d	Method Blank	12/1/2019 8:21	Instrument idle/MeOH Shot	1
1400	2191130A_98.d	QC	12/1/2019 8:32		1
21911091021	2191130A_99.d	Sample	12/1/2019 8:43	671110	1
21911091022	2191130A_100.d	Sample	12/1/2019 8:55	671110	1
21911091023	2191130A_101.d	Sample	12/1/2019 9:06	671110	1
21911091024	2191130A_102.d	Sample	12/1/2019 9:18	671110	1
21911091025	2191130A_103.d	Sample	12/1/2019 9:29	671110	1
21911121801	2191130A_104.d	Sample	12/1/2019 9:40	671110	1
21911121802	2191130A_105.d	Sample	12/1/2019 9:52	671110	1
21911121803	2191130A_106.d	Sample	12/1/2019 10:03	671110	1
21911121804	2191130A_107.d	Sample	12/1/2019 10:14	671110	1
21911121805	2191130A_108.d	Sample	12/1/2019 10:26	671110	1
1400	2191130A_109.d	QC	12/1/2019 10:37		1

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	219112207	Instrument ID:	QQQ1
Analysis Date:	11/30/2019 11:45	Lab File ID:	2191130A_10.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	672387

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomer sulfonate	ng/L	50000	56200	112	70	130	
8:2 Fluorotelomer sulfonate	ng/L	50000	61100	122	70	130	
NEtFOSAA	ng/L	50000	45700	91	70	130	
NMeFOSAA	ng/L	50000	43400	87	70	130	
Perfluorobutanoic acid	ng/L	50000	53000	106	70	130	
Perfluorobutanesulfonic acid	ng/L	50000	50500	101	70	130	
Perfluorodecanoic acid	ng/L	50000	57300	115	70	130	
Perfluorododecanoic acid	ng/L	50000	54600	109	70	130	
Perfluoroheptanoic acid	ng/L	50000	47200	94	70	130	
Perfluorohexanoic acid	ng/L	50000	54000	108	70	130	
Perfluorohexanesulfonic acid	ng/L	50000	54800	110	70	130	
Perfluorononanoic acid	ng/L	50000	56300	113	70	130	
Perfluorooctanoic acid	ng/L	50000	53700	107	70	130	
Perfluorooctane Sulfonate	ng/L	50000	51700	103	70	130	
Perfluoropentanoic acid	ng/L	50000	50100	100	70	130	
Perfluorotetradecanoic acid	ng/L	50000	54500	109	70	130	
Perfluorotridecanoic acid	ng/L	50000	46300	93	70	130	
Perfluoroundecanoic acid	ng/L	50000	53200	106	70	130	

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	219112207	Instrument ID:	QQQ1
Analysis Date:	11/30/2019 11:56	Lab File ID:	2191130A_11.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	672387

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomer sulfonate	ng/L	7.93	7.73	98	70	130	
8:2 Fluorotelomer sulfonate	ng/L	8.00	9.47	118	70	130	
NEtFOSAA	ng/L	8.33	8.87	106	70	130	
NMeFOSAA	ng/L	8.33	8.67	104	70	130	
Perfluorobutanoic acid	ng/L	8.33	7.53	90	70	130	
Perfluorobutanesulfonic acid	ng/L	7.40	6.23	84	70	130	
Perfluorodecanoic acid	ng/L	8.33	7.40	89	70	130	
Perfluorododecanoic acid	ng/L	8.33	7.53	91	70	130	
Perfluoroheptanoic acid	ng/L	8.33	6.73	81	70	130	
Perfluorohexanoic acid	ng/L	8.33	7.33	88	70	130	
Perfluorohexanesulfonic acid	ng/L	7.60	6.87	90	70	130	
Perfluorononanoic acid	ng/L	8.33	7.20	86	70	130	
Perfluorooctanoic acid	ng/L	8.33	7.33	88	70	130	
Perfluorooctane Sulfonate	ng/L	7.73	9.53	124	70	130	
Perfluoropentanoic acid	ng/L	8.33	6.25	75	70	130	
Perfluorotetradecanoic acid	ng/L	8.33	8.33	100	70	130	
Perfluorotridecanoic acid	ng/L	8.33	7.27	87	70	130	
Perfluoroundecanoic acid	ng/L	8.33	7.67	92	70	130	

4I

ORGANICS INSTRUMENT BLANK

Report No:	219112207	Instrument ID:	QQQ1
Analysis Date:	11/30/2019 12:08	Lab File ID:	2191130A_12.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	672387

ANALYTE	*UNITS*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*	*#*
6:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.79	4.00	10.0	
8:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.63	4.00	10.0	
NEtFOSAA	ng/L	8.00	U	5.38	8.00	10.0	
NMeFOSAA	ng/L	8.00	U	4.60	8.00	10.0	
Perfluorobutanesulfonic acid	ng/L	4.00	U	1.47	4.00	10.0	
Perfluorobutanoic acid	ng/L	4.00	U	2.13	4.00	10.0	
Perfluorodecanoic acid	ng/L	4.00	U	1.65	4.00	10.0	
Perfluorododecanoic acid	ng/L	4.00	U	2.45	4.00	10.0	
Perfluoroheptanoic acid	ng/L	4.00	U	1.85	4.00	10.0	
Perfluorohexanesulfonic acid	ng/L	4.00	U	1.64	4.00	10.0	
Perfluorohexanoic acid	ng/L	4.00	U	1.94	4.00	10.0	
Perfluorononanoic acid	ng/L	4.00	U	1.68	4.00	10.0	
Perfluorooctane Sulfonate	ng/L	2.16	J	1.70	4.00	10.0	
Perfluorooctanoic acid	ng/L	4.00	U	1.80	4.00	10.0	
Perfluoropentanoic acid	ng/L	4.00	U	2.35	4.00	10.0	
Perfluorotetradecanoic acid	ng/L	4.00	U	2.76	4.00	10.0	
Perfluorotridecanoic acid	ng/L	4.00	U	2.56	4.00	10.0	
Perfluoroundecanoic acid	ng/L	4.00	U	1.86	4.00	10.0	

* - Result greater than 1/2 LOQ

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219112207	Instrument ID:	QQQ1
Analysis Date:	11/30/2019 15:08	Lab File ID:	2191130A_26.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	672387

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomer sulfonate	ng/L	47500	51600	109	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	60500	126	70	130	
NEtFOSAA	ng/L	50000	53900	108	70	130	
NMeFOSAA	ng/L	50000	53100	106	70	130	
Perfluorobutanoic acid	ng/L	50000	49500	99	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	43100	97	70	130	
Perfluorodecanoic acid	ng/L	50000	54100	108	70	130	
Perfluorododecanoic acid	ng/L	50000	51400	103	70	130	
Perfluoroheptanoic acid	ng/L	50000	47600	95	70	130	
Perfluorohexanoic acid	ng/L	50000	49200	98	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	49800	109	70	130	
Perfluorononanoic acid	ng/L	50000	51700	103	70	130	
Perfluorooctanoic acid	ng/L	50000	53800	108	70	130	
Perfluorooctane Sulfonate	ng/L	46300	57900	125	70	130	
Perfluoropentanoic acid	ng/L	50000	46600	93	70	130	
Perfluorotetradecanoic acid	ng/L	50000	50900	102	70	130	
Perfluorotridecanoic acid	ng/L	50000	49800	100	70	130	
Perfluoroundecanoic acid	ng/L	50000	50200	100	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219112207	Instrument ID:	QQQ1
Analysis Date:	11/30/2019 17:35	Lab File ID:	2191130A_39.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	672387

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomer sulfonate	ng/L	47500	49900	105	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	56800	118	70	130	
NEtFOSAA	ng/L	50000	54100	108	70	130	
NMeFOSAA	ng/L	50000	48600	97	70	130	
Perfluorobutanoic acid	ng/L	50000	49000	98	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	42700	96	70	130	
Perfluorodecanoic acid	ng/L	50000	54800	110	70	130	
Perfluorododecanoic acid	ng/L	50000	51300	103	70	130	
Perfluoroheptanoic acid	ng/L	50000	47600	95	70	130	
Perfluorohexanoic acid	ng/L	50000	49200	98	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	47100	103	70	130	
Perfluorononanoic acid	ng/L	50000	51900	104	70	130	
Perfluorooctanoic acid	ng/L	50000	50200	100	70	130	
Perfluorooctane Sulfonate	ng/L	46300	53100	115	70	130	
Perfluoropentanoic acid	ng/L	50000	51800	104	70	130	
Perfluorotetradecanoic acid	ng/L	50000	50100	100	70	130	
Perfluorotridecanoic acid	ng/L	50000	51100	102	70	130	
Perfluoroundecanoic acid	ng/L	50000	54200	108	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219112207	Instrument ID:	QQQ1
Analysis Date:	11/30/2019 18:59	Lab File ID:	2191130A_46.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	672387

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomer sulfonate	ng/L	47500	52300	110	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	55700	116	70	130	
NEtFOSAA	ng/L	50000	50600	101	70	130	
NMeFOSAA	ng/L	50000	50600	101	70	130	
Perfluorobutanoic acid	ng/L	50000	49500	99	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	42200	95	70	130	
Perfluorodecanoic acid	ng/L	50000	52600	105	70	130	
Perfluorododecanoic acid	ng/L	50000	53700	107	70	130	
Perfluoroheptanoic acid	ng/L	50000	48400	97	70	130	
Perfluorohexanoic acid	ng/L	50000	48600	97	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	45000	99	70	130	
Perfluorononanoic acid	ng/L	50000	49600	99	70	130	
Perfluorooctanoic acid	ng/L	50000	53600	107	70	130	
Perfluorooctane Sulfonate	ng/L	46300	54900	119	70	130	
Perfluoropentanoic acid	ng/L	50000	52100	104	70	130	
Perfluorotetradecanoic acid	ng/L	50000	51900	104	70	130	
Perfluorotridecanoic acid	ng/L	50000	53200	106	70	130	
Perfluoroundecanoic acid	ng/L	50000	54800	110	70	130	

FORM 7E - ORG

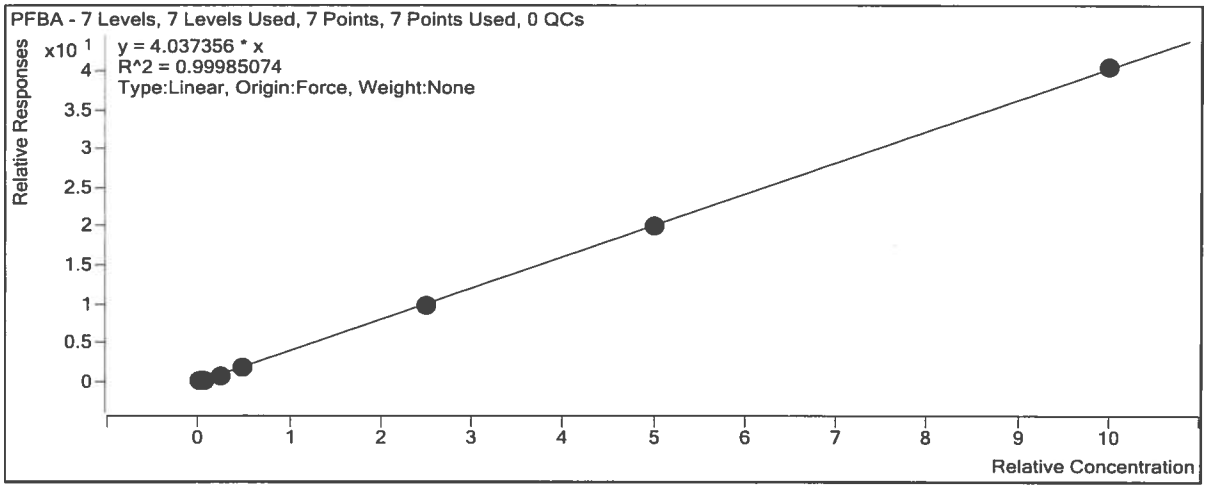
Quantitative Analysis Calibration Report

Batch Data Path	D:\MassHunter\Data\2191130ACAL\QuantResults\2191130A.batch.bin		
Analysis Time	12/13/2019 10:47 AM	**Analyst Name**	GCAL\lcms
Report Time	12/13/2019 11:13 AM	**Reporter Name**	GCAL\lcms
Last Calib Update	11/30/2019 11:33 AM	**Batch State**	ResultsCleaned

Calibration Info

Target Compound *PFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	2647	0.5000	3.9028
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	6015	1.2500	3.5767
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	24937	5.0000	3.6061
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	50697	10.0000	3.6486
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	280793	50.0000	3.9145
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	566930	100.0000	4.0028
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	1128042	200.0000	4.0549



Extracted ISTD *MPFBA*

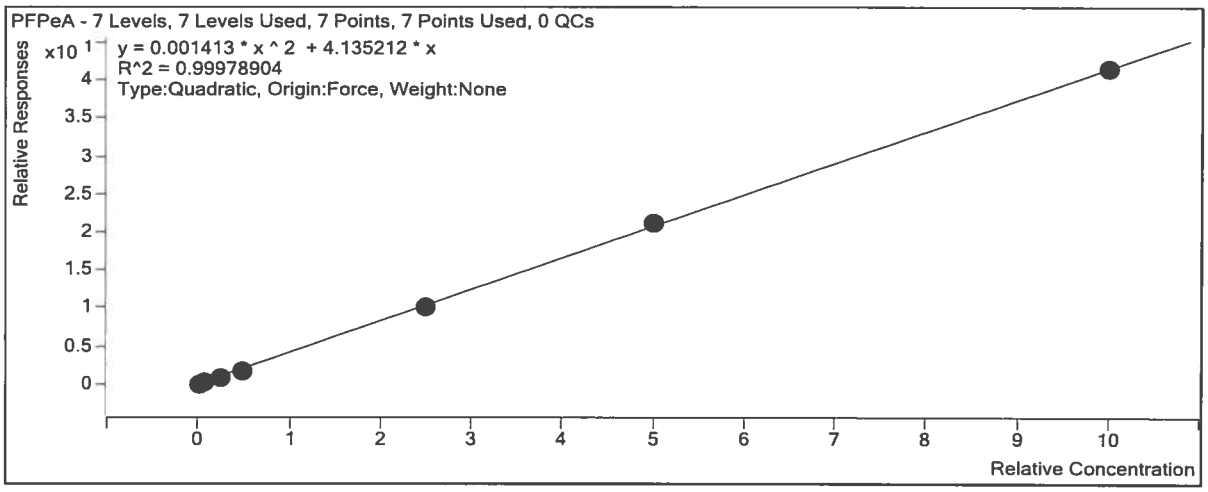
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	27134	20.0000	1356.6856
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	26909	20.0000	1345.4700
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	27661	20.0000	1383.0353
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	27790	20.0000	1389.5041
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	28693	20.0000	1434.6352
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	28326	20.0000	1416.3189
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	27819	20.0000	1390.9531

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
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D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	19589	20.0000	979.4727
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	18521	20.0000	926.0321

Target Compound *PFPeA*

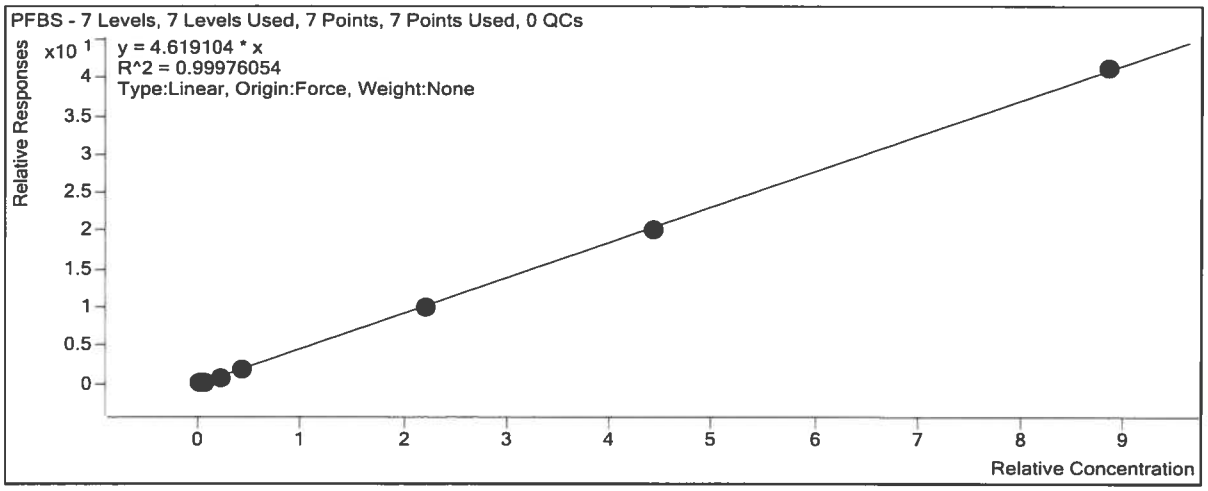
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
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D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	193525	50.0000	4.0095
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	411808	100.0000	4.2044
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	767435	200.0000	4.1437



Target Compound *PFBS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	1578	0.4425	3.6535
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	4152	1.1100	3.8467
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	17891	4.4250	4.0978
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	36714	8.8500	4.1376

D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	205315	44.2500	4.5483
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	410916	88.5000	4.5228
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	818636	177.0000	4.6492



Extracted ISTD *M3PFBS*

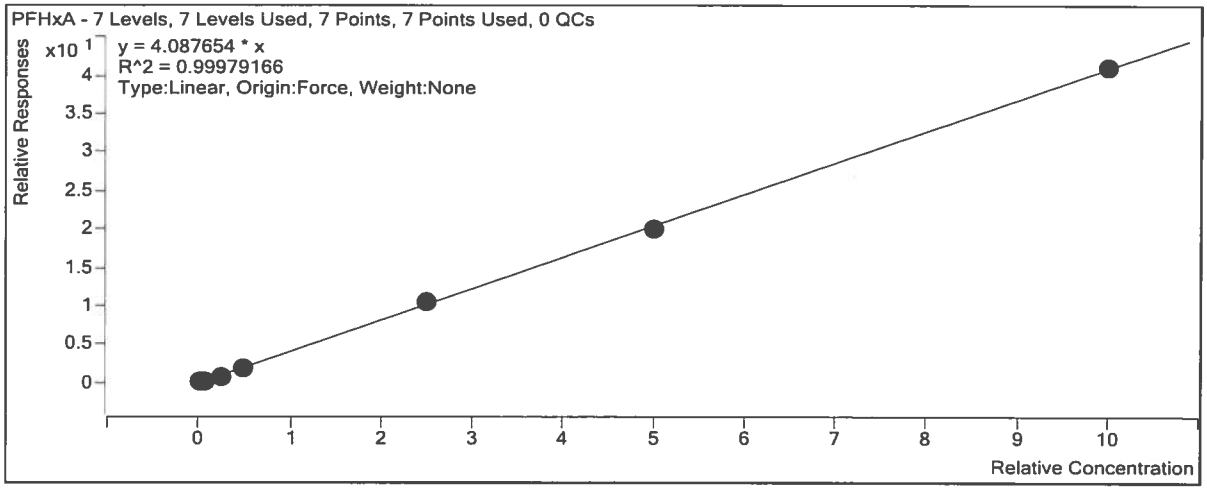
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	19519	20.0000	975.9298
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	19450	20.0000	972.4878
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	19733	20.0000	986.6611
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	20052	20.0000	1002.6135
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	20403	20.0000	1020.1266
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	20532	20.0000	1026.6056
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	19896	20.0000	994.8139

Extracted ISTD *M2 4:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	9214	20.0000	460.6954
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	9225	20.0000	461.2690
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	9464	20.0000	473.2168
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	9603	20.0000	480.1667
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	9229	20.0000	461.4695
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	8730	20.0000	436.5144
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	7774	20.0000	388.7106

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	66119	10.0000	3.7002
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	352913	50.0000	4.2057
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	696563	100.0000	4.0123
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	1375779	200.0000	4.1003



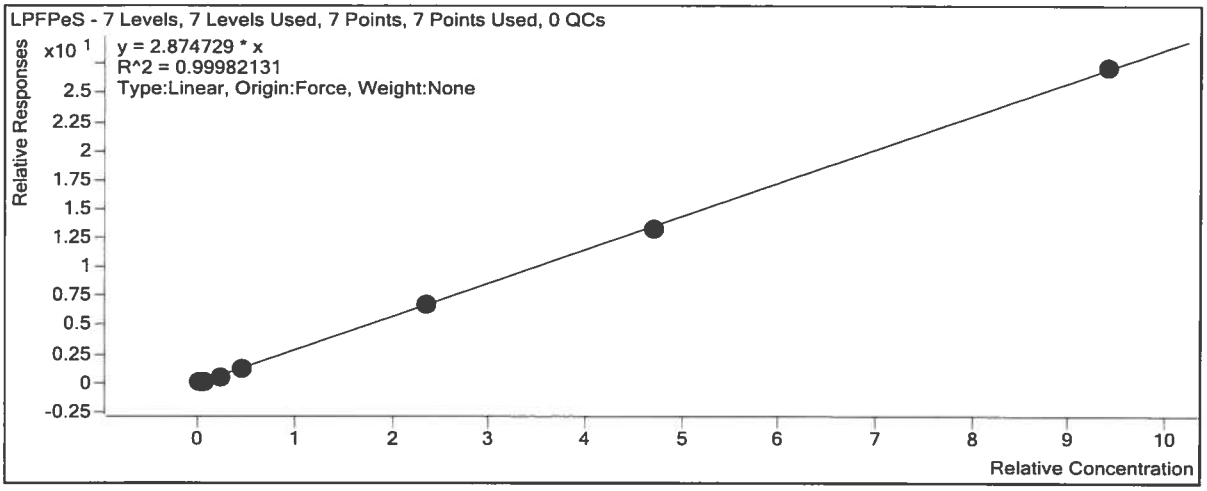
Extracted ISTD *M5PFHxA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	35153	20.0000	1757.6545
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	36405	20.0000	1820.2655
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	35204	20.0000	1760.2245
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	35738	20.0000	1786.9005
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	33565	20.0000	1678.2607
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	34721	20.0000	1736.0620
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	33553	20.0000	1677.6481

Target Compound *LPFPeS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	1931	0.4700	2.3373
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	4859	1.1800	2.2623
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	20187	4.7000	2.4401
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	43131	9.4000	2.5678

D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	229341	47.0000	2.9075
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	460713	94.0000	2.8232
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	910438	188.0000	2.8866



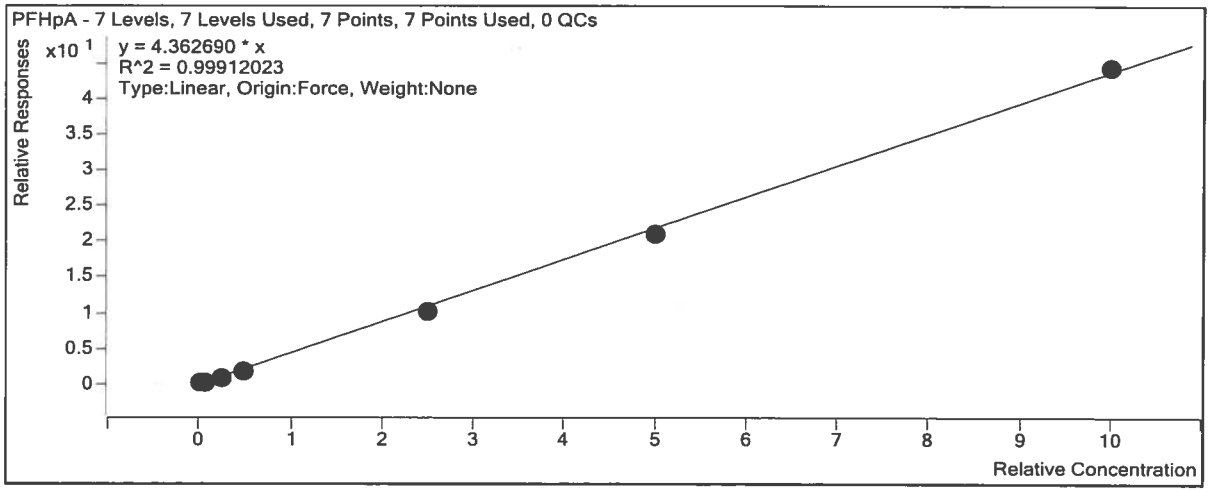
Extracted ISTD *M3HFPODA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	1911	20.0000	95.5614
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	1960	20.0000	97.9841
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	1768	20.0000	88.4064
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	1639	20.0000	81.9477
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	2017	20.0000	100.8528
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	1822	20.0000	91.1146
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	1864	20.0000	93.2129

Target Compound *HFPO-DA*

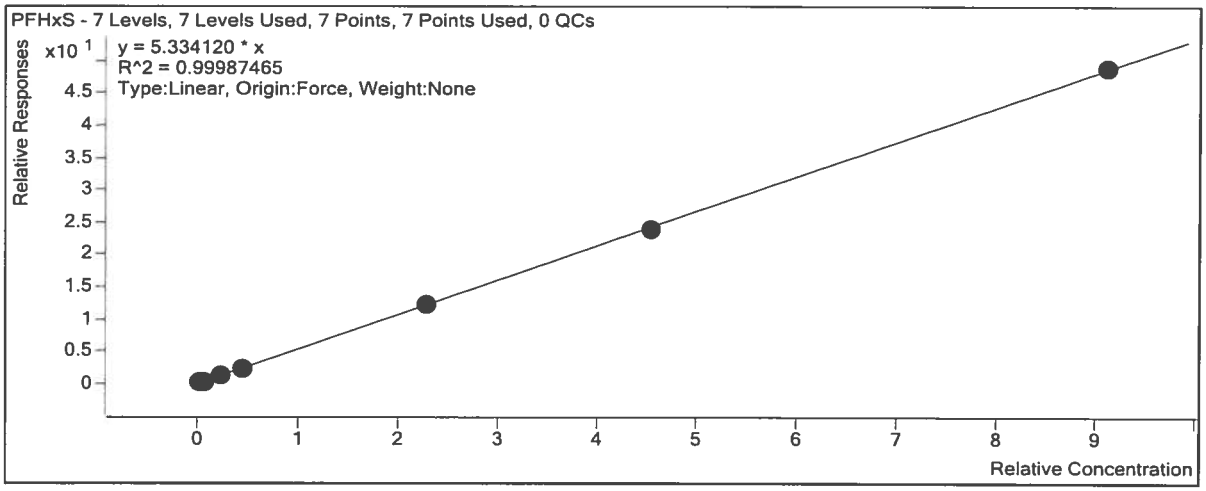
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	168	0.5000	3.5250
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	462	1.2500	3.7699
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	1689	5.0000	3.8203
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	3412	10.0000	4.1637
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	19269	50.0000	3.8212
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	38930	100.0000	4.2726
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	76861	200.0000	4.1229

Quantitative Analysis Calibration Report



Target Compound *PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	2123	0.4560	4.8241
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	5491	1.1400	4.6765
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	22582	4.5600	5.1408
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	47036	9.1200	5.1291
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	256084	45.6000	5.4349
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	506178	91.2000	5.2461
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	1003788	182.4000	5.3505

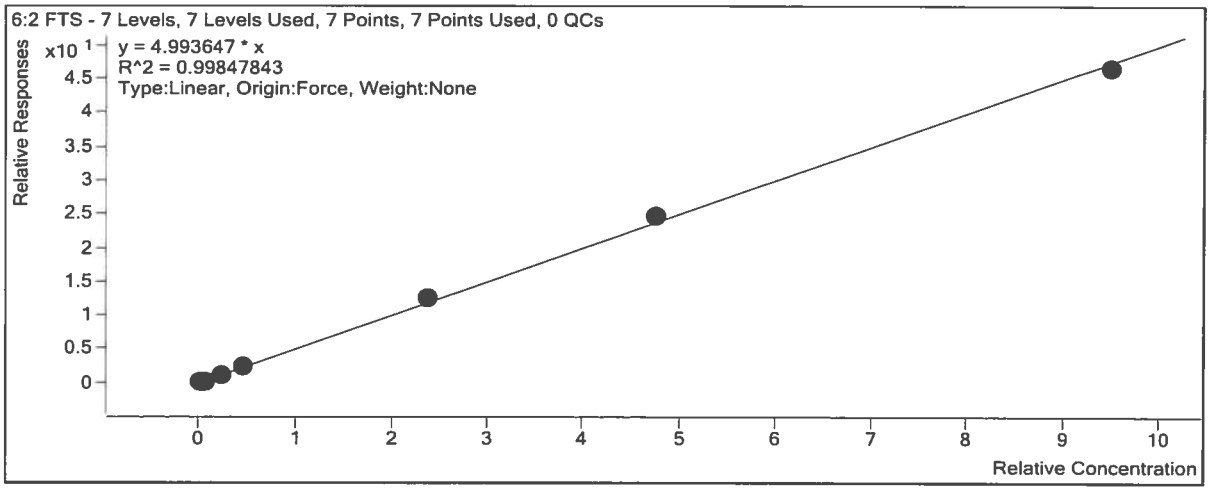


Extracted ISTD *M3PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	53707	9.5000	5.2328
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	271819	47.5000	5.3313
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	511875	95.0000	5.2492
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	903811	190.0000	4.9077



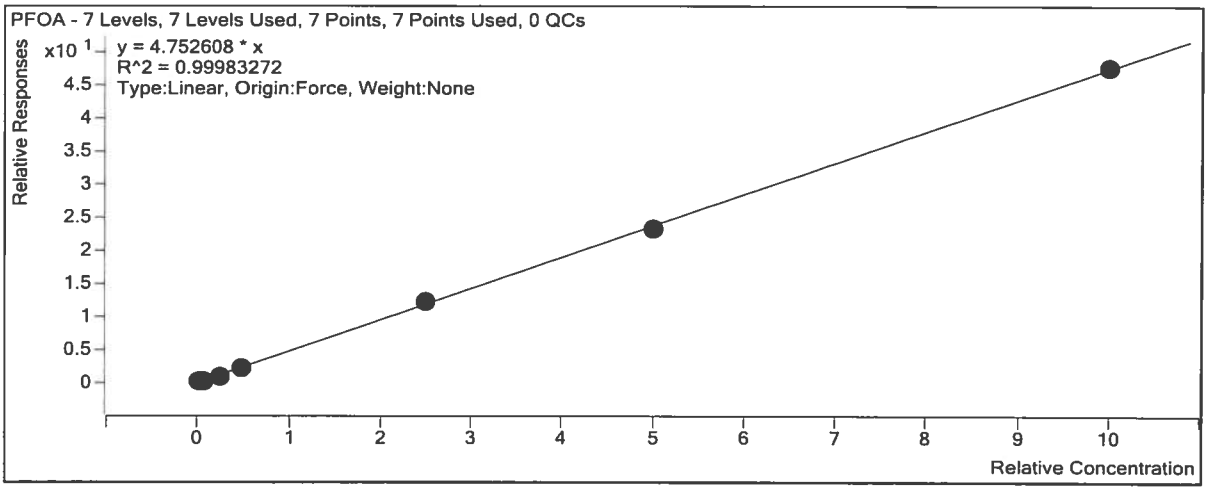
Instrument ISTD *M2PFOA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	166048	20.0000	8302.3759
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	163502	20.0000	8175.1169
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	165864	20.0000	8293.2013
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	160669	20.0000	8033.4303
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	161782	20.0000	8089.0952
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	156751	20.0000	7837.5297
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	146850	20.0000	7342.4899

Quantitative Analysis Calibration Report

Target Compound *PFOA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	2730	0.5000	3.9490
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	6715	1.2500	4.0934
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	28896	5.0000	4.2973
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	59222	10.0000	4.4334
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	313332	50.0000	4.8753
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	617109	100.0000	4.6717
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	1171572	200.0000	4.7663



Extracted ISTD *M8PFOA*

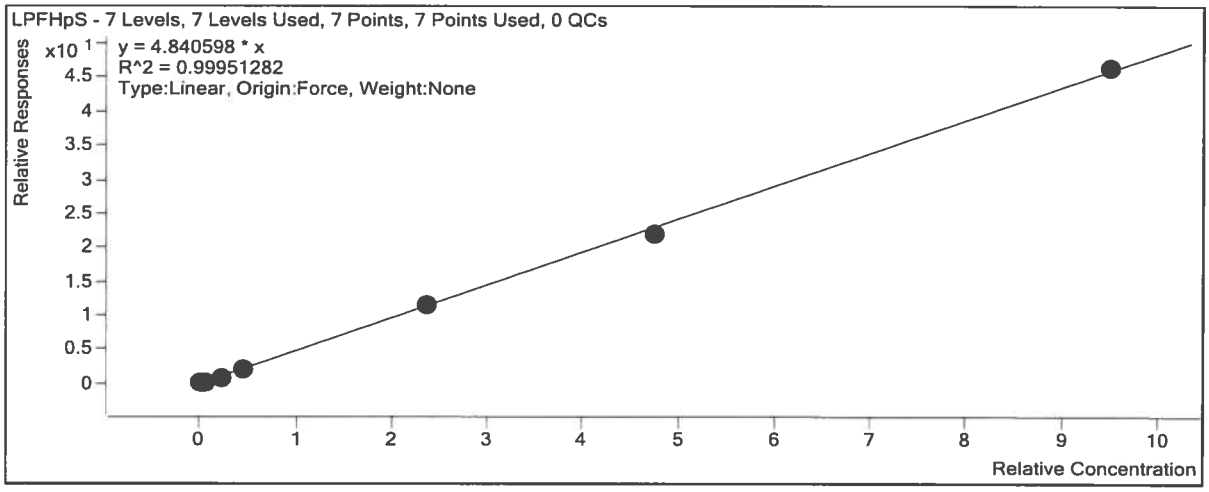
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	27652	20.0000	1382.5978
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	26246	20.0000	1312.3198
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	26897	20.0000	1344.8486
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	26716	20.0000	1335.7903
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	25708	20.0000	1285.3767
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	26419	20.0000	1320.9459
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	24580	20.0000	1229.0230

Target Compound *LPFHpS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

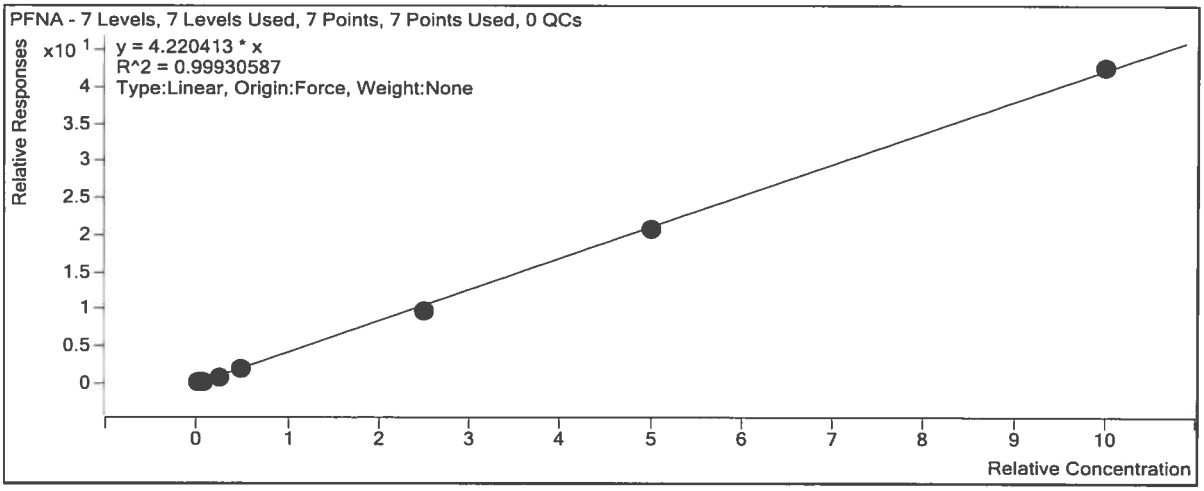
Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF



Target Compound *PFNA*

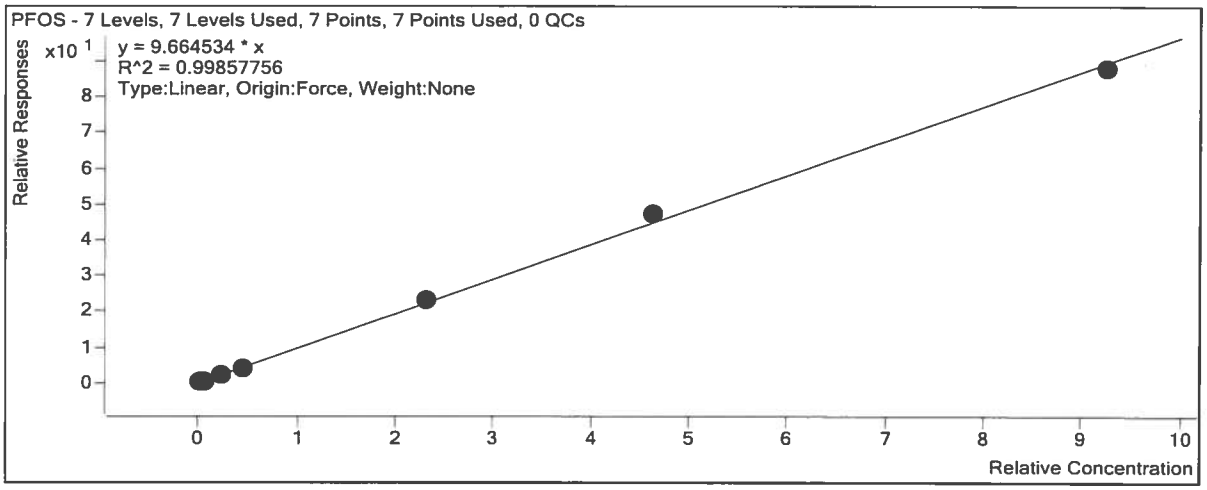
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	2427	0.5000	3.0912
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	7411	1.2500	3.8778
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	29153	5.0000	3.6515
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	58344	10.0000	3.8118
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	314410	50.0000	3.8718
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	626673	100.0000	4.1619
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	1183251	200.0000	4.2582



Extracted ISTD *M9PFNA*

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	6490	1.1600	10.7808
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	25126	4.6280	10.3631
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	48615	9.2550	9.4180
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	255331	46.2800	10.0367
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	522862	92.5500	10.2111
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	1027215	185.1000	9.5047



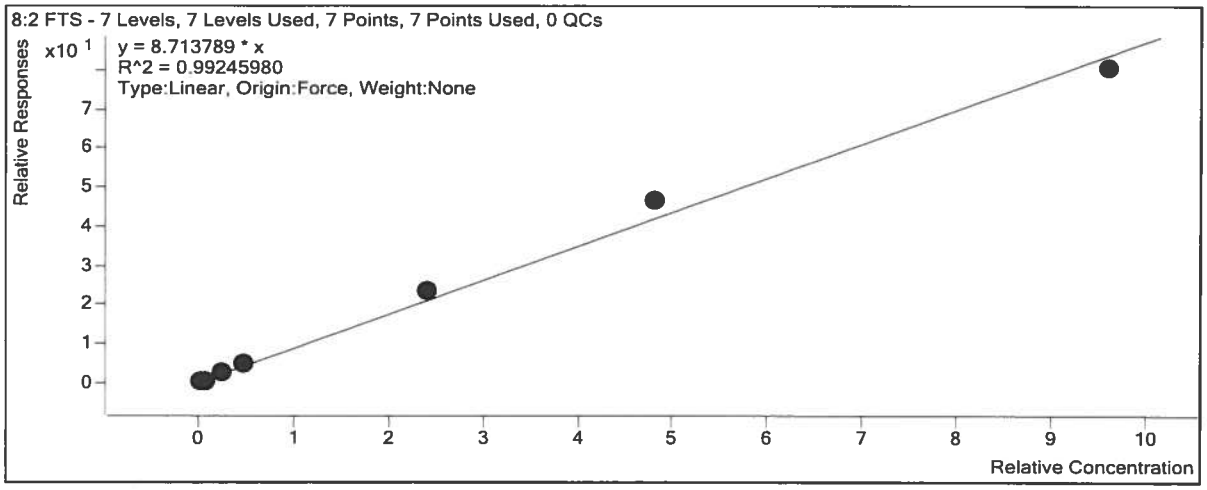
Target Compound *9Cl-PF3ONS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	9733	0.5000	36.8918
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	25972	1.2500	40.0345
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	114939	5.0000	43.8795
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	235375	10.0000	42.2011
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	1250120	50.0000	45.4842
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	2474314	100.0000	44.7216
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	4822519	200.0000	41.2980

Quantitative Analysis Calibration Report

Target Compound *8:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	3337	0.4800	9.2057
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	8742	1.2000	9.7973
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	37082	4.8000	10.6633
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	71959	9.6000	10.1649
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	365102	48.0000	9.7255
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	666644	96.0000	9.7708
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	1155449	192.0000	8.3814



Extracted ISTD *M2 8:2 FTS*

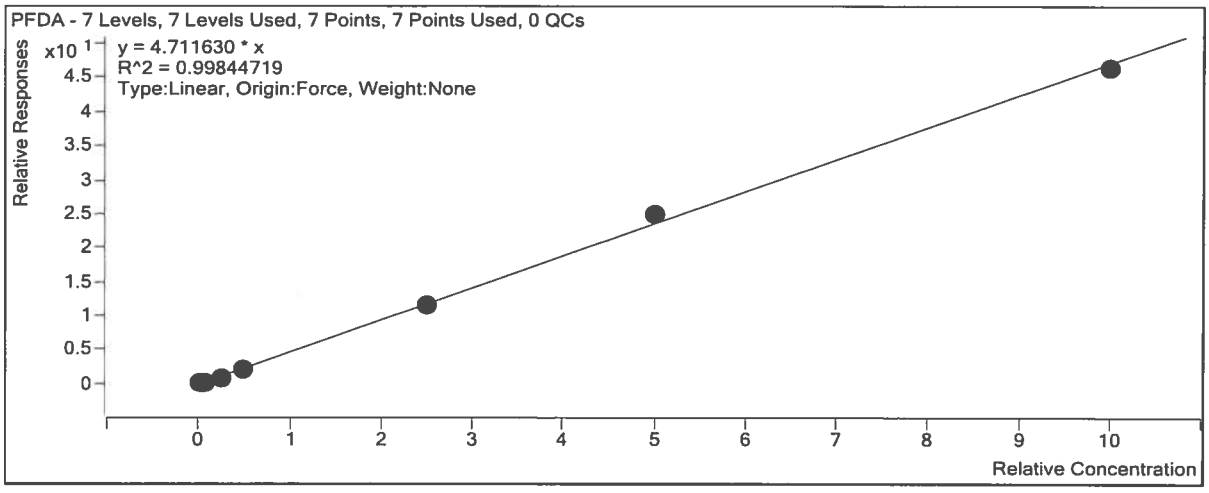
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	15103	20.0000	755.1433
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	14872	20.0000	743.6035
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	14490	20.0000	724.4842
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	14748	20.0000	737.4119
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	15642	20.0000	782.1023
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	14214	20.0000	710.7105
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	14360	20.0000	718.0128

Target Compound *PFDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF



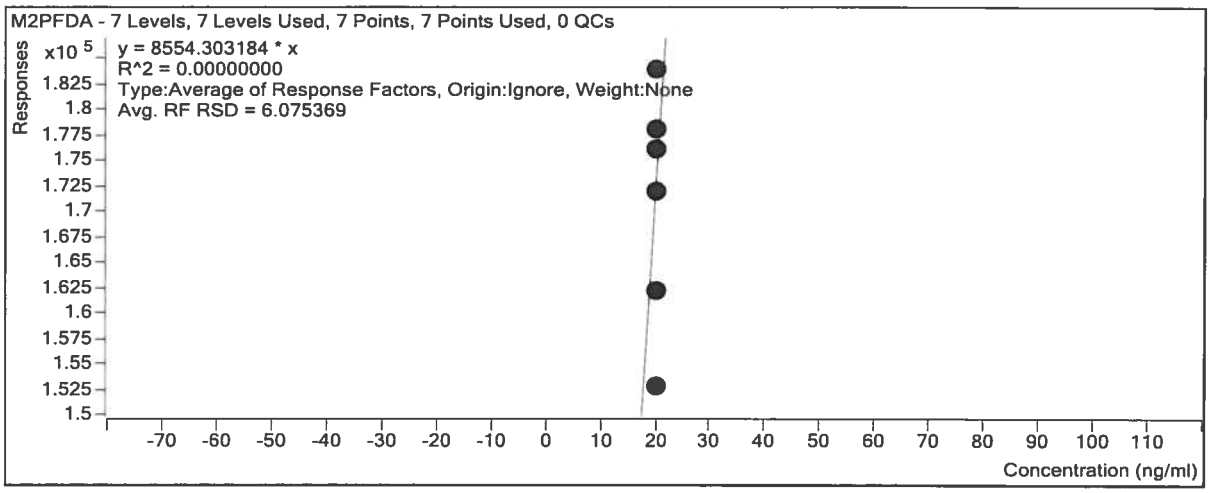
Extracted ISTD *M6PFDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	29791	20.0000	1489.5408
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	28550	20.0000	1427.4948
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	28486	20.0000	1424.2973
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	25874	20.0000	1293.6753
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	27357	20.0000	1367.8346
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	24358	20.0000	1217.8785
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	24579	20.0000	1228.9440

Instrument ISTD *M2PFDA*

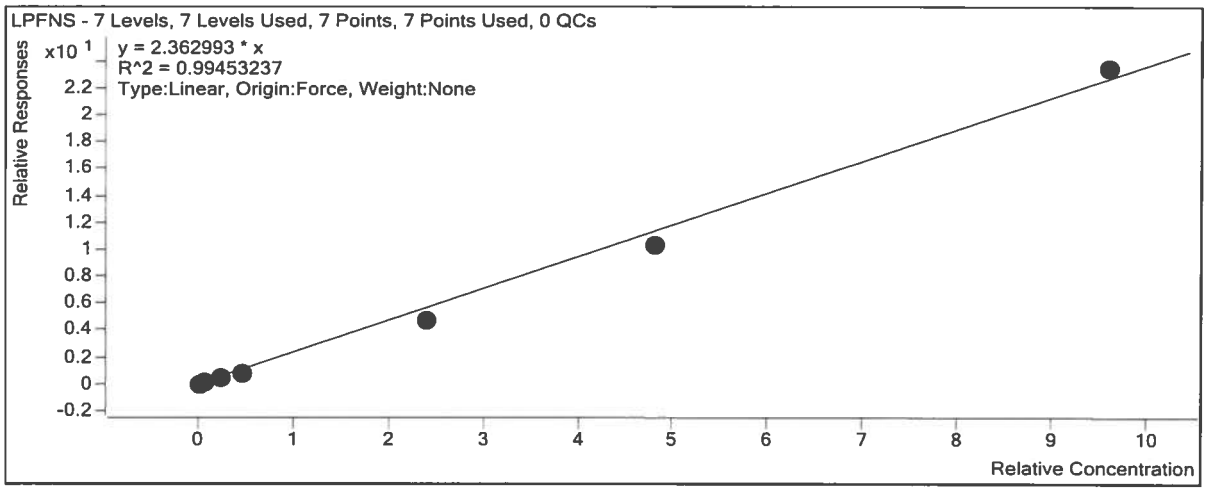
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	183953	20.0000	9197.6292
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	178133	20.0000	8906.6744
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	176177	20.0000	8808.8588
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	172024	20.0000	8601.1911
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	172051	20.0000	8602.5544
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	162283	20.0000	8114.1622
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	152981	20.0000	7649.0521

Quantitative Analysis Calibration Report



Target Compound *LPFNS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	1251	0.4800	1.6594
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	3098	1.2000	1.6887
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	13466	4.8000	1.7570
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	26263	9.6000	1.7874
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	153100	48.0000	1.9639
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	312808	96.0000	2.1640
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	650768	192.0000	2.4395



Extracted ISTD *d3-NMeFOSAA*

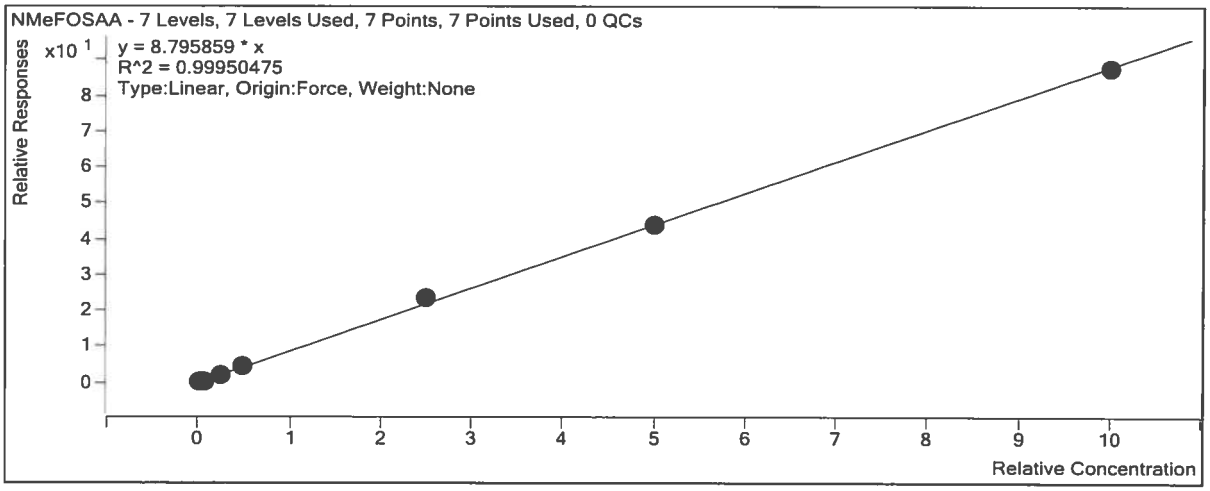
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	5497	20.0000	274.8702

Target Compound *NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	1449	0.5000	10.9763
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	2416	1.2500	7.0474
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	11439	5.0000	8.3886
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	21879	10.0000	9.0323
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	126314	50.0000	9.4827
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	246592	100.0000	8.7955
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	481173	200.0000	8.7527

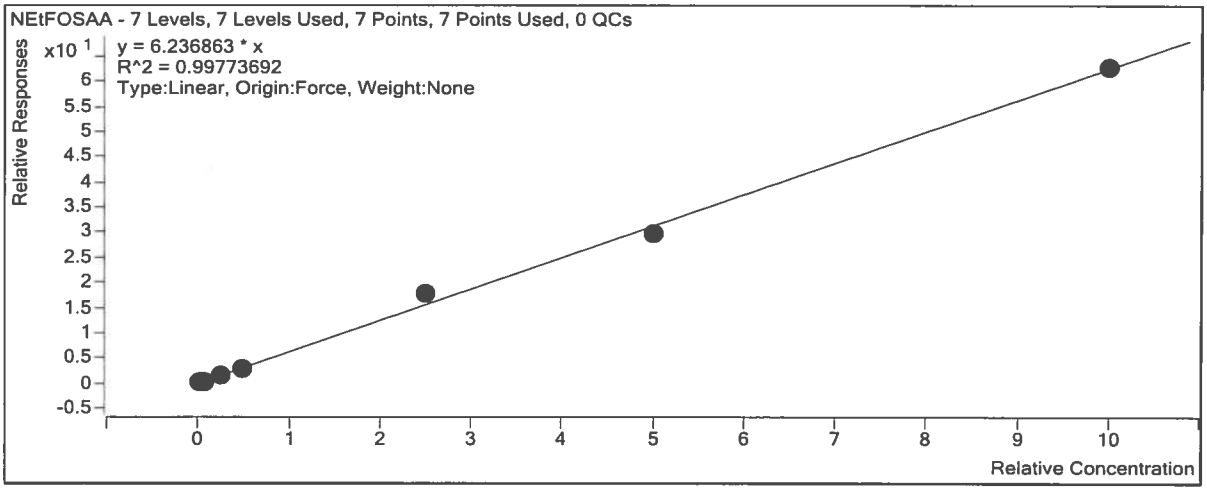


Target Compound *FOSA-I*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	3305	0.5000	4.4049
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	7613	1.2500	4.1810
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	33569	5.0000	4.6370
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	69389	10.0000	4.8572
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	385483	50.0000	5.1014
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	764938	100.0000	5.0948
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	1516190	200.0000	4.9947

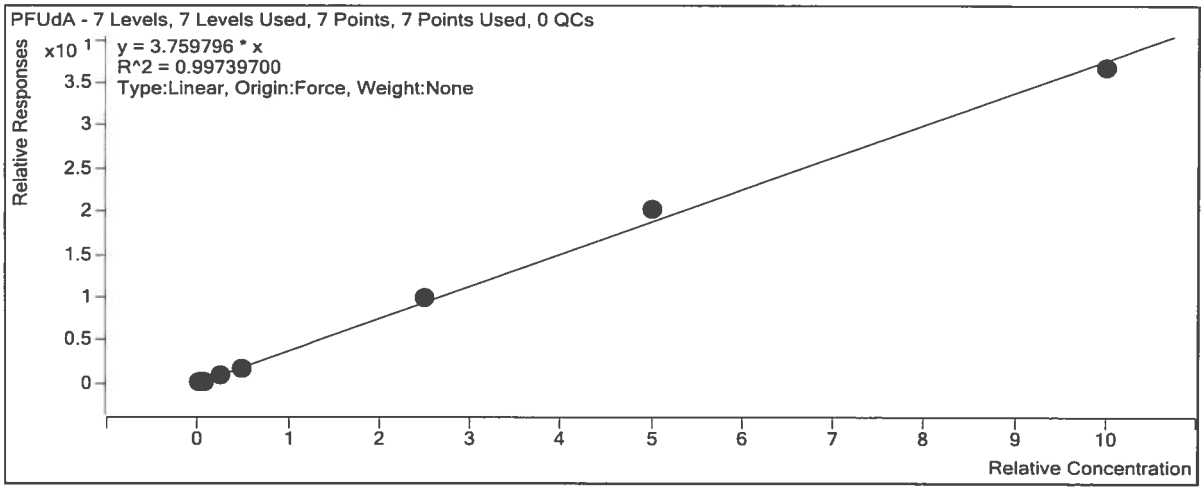
Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	410632	200.0000	6.2583



Target Compound *PFUdA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	2283	0.5000	2.8641
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	6153	1.2500	3.4084
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	26459	5.0000	3.5297
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	52978	10.0000	3.4046
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	288344	50.0000	3.9775
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	569787	100.0000	4.0433
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	1008130	200.0000	3.6764

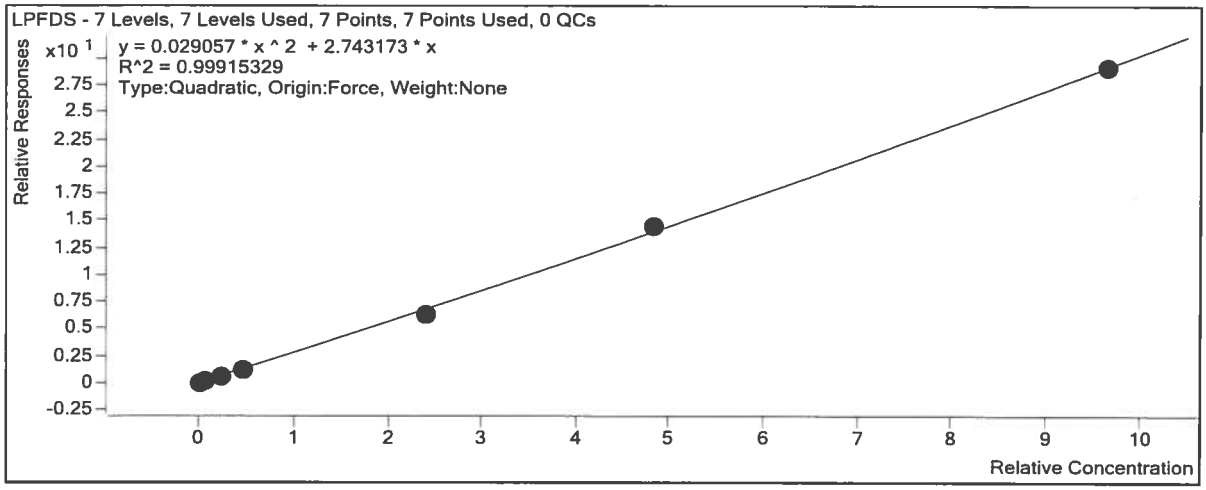


Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	31121	20.0000	1556.0606
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	28998	20.0000	1449.8803
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	28184	20.0000	1409.2078
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	27422	20.0000	1371.0981

Target Compound *LPFDS*

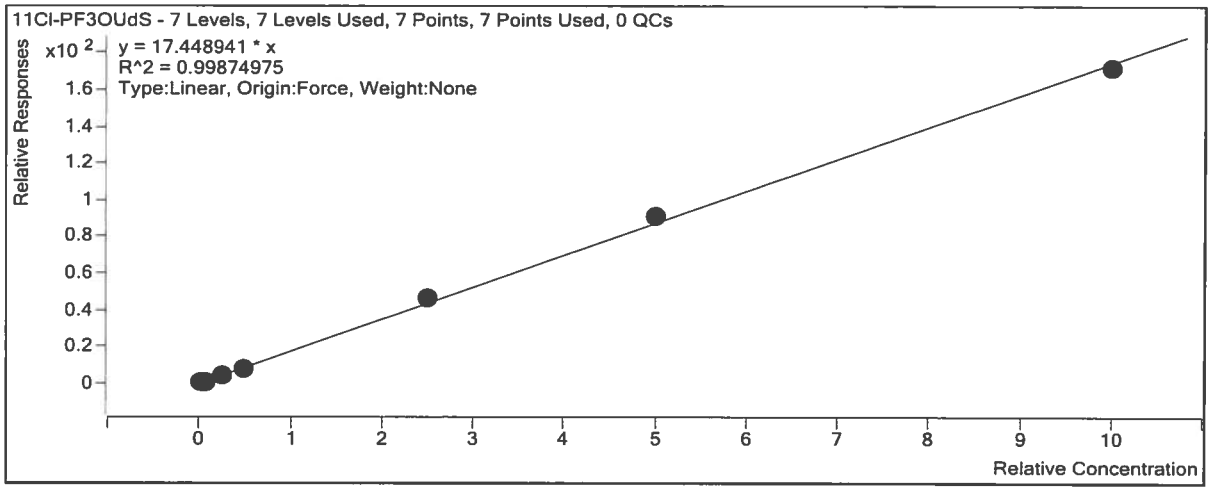
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	1358	0.4825	1.8893
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	3671	1.2100	2.1251
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	15286	4.8250	2.2243
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	31048	9.6500	2.4870
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	169773	48.2500	2.5724
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	350418	96.5000	2.9816
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	715140	193.0000	3.0151



Target Compound *11Cl-PF3OUdS*

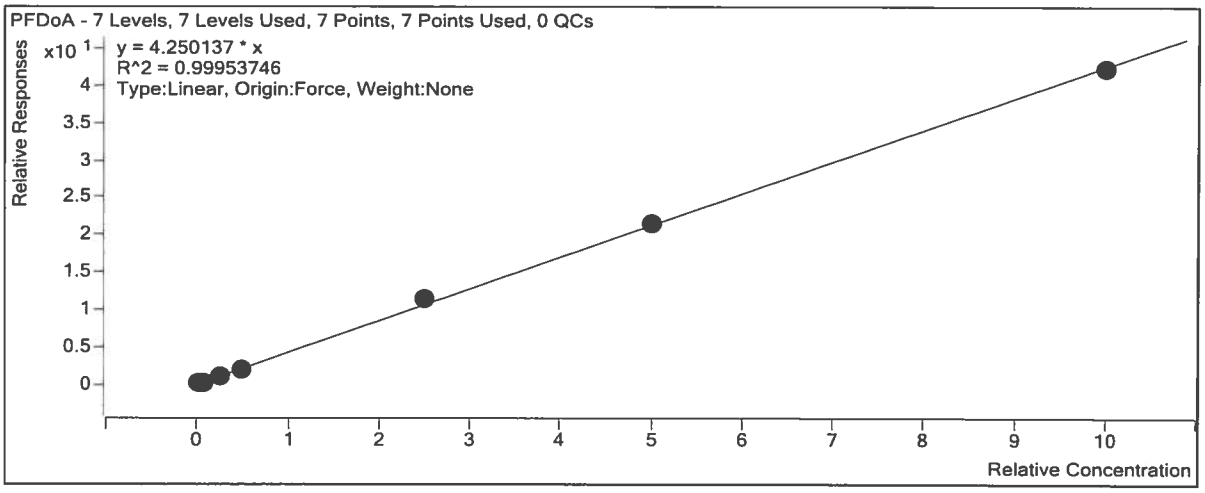
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	3779	0.5000	14.3222
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	9976	1.2500	15.3772
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	46314	5.0000	17.6808
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	95537	10.0000	17.1291

D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	507573	50.0000	18.4675
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	1011660	100.0000	18.2851
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	2005820	200.0000	17.1770



Target Compound *PFDoA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	2544	0.5000	4.6955
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	4820	1.2500	3.5348
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	21076	5.0000	4.0733
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	41854	10.0000	4.0950
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	241566	50.0000	4.5528
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	456199	100.0000	4.2871
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	896514	200.0000	4.2225

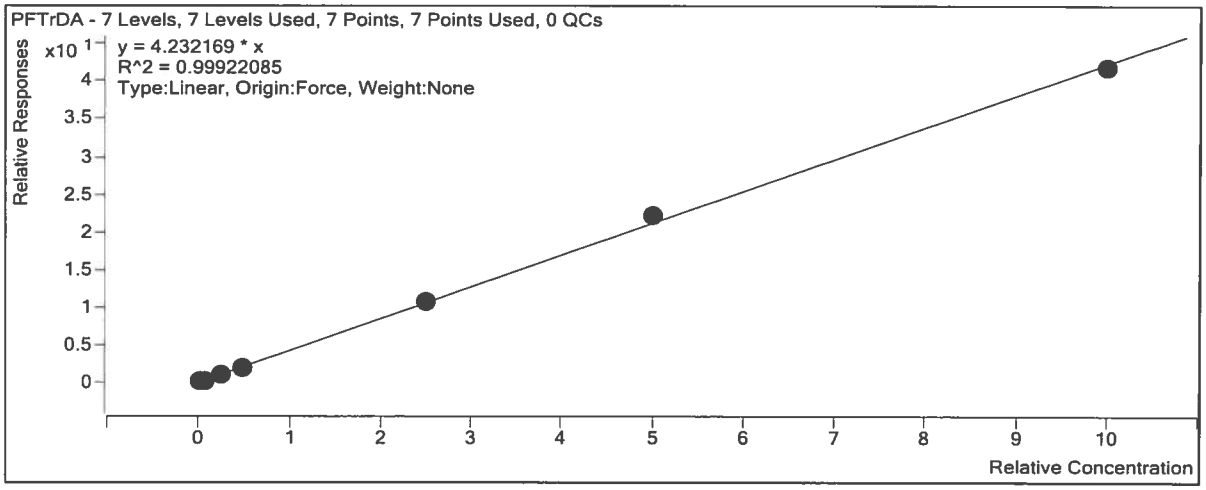


Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	21232	20.0000	1061.5881

Target Compound *PFTrDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	1665	0.5000	3.8941
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	4125	1.2500	3.9184
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	16871	5.0000	3.8777
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	35121	10.0000	4.2486
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	183641	50.0000	4.2911
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	368523	100.0000	4.4193
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	733303	200.0000	4.1819

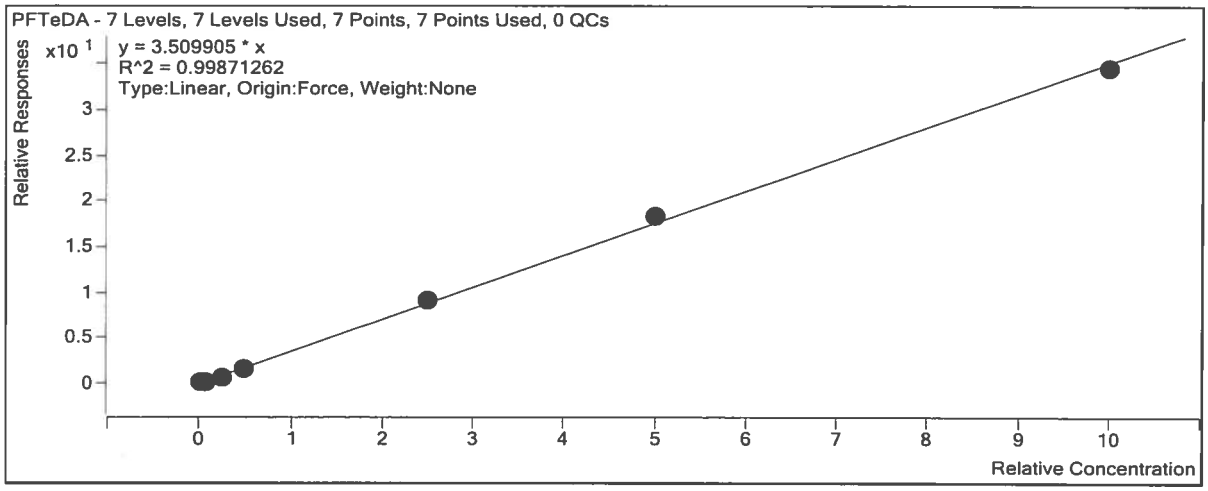


Extracted ISTD *M2PFTeDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_02.d	Calibration	1	☑	17105	20.0000	855.2269
D:\MassHunter\Data\2191130ACAL\2191130A_03.d	Calibration	2	☑	16842	20.0000	842.0893
D:\MassHunter\Data\2191130ACAL\2191130A_04.d	Calibration	3	☑	17403	20.0000	870.1684
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	16533	20.0000	826.6550
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	17118	20.0000	855.9190
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	16678	20.0000	833.8920
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	17535	20.0000	876.7588

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2191130ACAL\2191130A_05.d	Calibration	4	☑	27626	10.0000	3.3419
D:\MassHunter\Data\2191130ACAL\2191130A_06.d	Calibration	5	☑	156360	50.0000	3.6536
D:\MassHunter\Data\2191130ACAL\2191130A_07.d	Calibration	6	☑	308215	100.0000	3.6961
D:\MassHunter\Data\2191130ACAL\2191130A_08.d	Calibration	7	☑	605849	200.0000	3.4550



8I

INJECTION INTERNAL STANDARD AREA SUMMARY

Report No:	219112207	Standard ID:	1205 (ICAL Midpoint)
Analyst:	BMH	Instrument ID:	QQQ1
Analysis Date:	11/30/19 10:38	Lab File ID:	2191130A_06.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	672387

	M2PFDA	M2PFHxA	M2PFOA	M4PFOS
	Area	*Area*	*Area*	*Area*
STANDARD	172051	402708	161782	129901

CLIENT SAMPLE ID	*GCAL SAMP ID*		*#*		*#*		*#*		*#*
MB1985361	1985361	121898		290847		108577		75293	
LCS1985362	1985362	124073		298264		113335		80447	
LCSD1985363	1985363	131095		302023		119530		82713	
CASCADE-DECONWATER 11/21	21911220701	136764		337072		130637		96483	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

LCMS1 Run Log

Analyst:	BMH	Expiration
Batch:	2200102A	Date
Current ICAL Bath:	2200102ACAL/2200102ACALDW	Date
20mM Amm Acetate	010-28-5	1/4/2020
Methanol	2128663	11/1/2023
Calibration Std	010-27-8	6/30/2020
ICV Std	010-19-7	6/3/2020
EIS Mix	010-27-7	6/30/2020

Name	Data File	Type	Acq. Date-Time	Comment	Dil.
MeOH Shot	2200102A_01.d	MeOH Shot	1/2/2020 10:17		1
1500	2200102A_02.d	Sample	1/2/2020 10:28		1
MeOH Shot	2200102A_03.d	MeOH Shot	1/2/2020 10:39		1
1201	2200102A_04.d	Cal	1/2/2020 10:50		1
1202	2200102A_05.d	Cal	1/2/2020 11:01		1
1203	2200102A_06.d	Cal	1/2/2020 11:13		1
1204	2200102A_07.d	Cal	1/2/2020 11:24		1
1205	2200102A_08.d	Cal	1/2/2020 11:35		1
1206	2200102A_09.d	Cal	1/2/2020 11:47		1
1207	2200102A_10.d	Cal	1/2/2020 11:58		1
MeOH shot	2200102A_11.d	MeOH Shot	1/2/2020 12:09		1
MeOH shot	2200102A_12.d	MeOH Shot	1/2/2020 12:20		1
1600	2200102A_13.d	QC	1/2/2020 12:31		1
1450	2200102A_14.d	QC	1/2/2020 12:42		1
1500	2200102A_15.d	Sample	1/2/2020 12:54		1
MeOH shot	2200102A_16.d	MeOH Shot	1/2/2020 13:51		1
1997485	2200102A_17.d	Sample	1/2/2020 14:02	674536	1
1997486	2200102A_18.d	QC	1/2/2020 14:13	674536	1
1997487	2200102A_19.d	QC	1/2/2020 14:25	674536	1
21912310901	2200102A_20.d	Sample	1/2/2020 14:36	674536	1
21912310902	2200102A_21.d	Sample	1/2/2020 14:47	674536	1
21912310903	2200102A_22.d	Sample	1/2/2020 14:59	674536	1

21912310904	2200102A_23.d	Sample	1/2/2020 15:10	674536	1
21912310905	2200102A_24.d	Sample	1/2/2020 15:21	674536	1
1400	2200102A_25.d	QC	1/2/2020 15:33	674536	1
1992871	2200102A_26.d	Sample	1/2/2020 15:44	673519 IIS-5X	1
1992872	2200102A_27.d	QC	1/2/2020 15:55	673519 IIS-5X	1
1992873	2200102A_28.d	QC	1/2/2020 16:06	673519 IIS-5X	1
21912135139	2200102A_29.d	Sample	1/2/2020 16:18	673519 IIS-5X	1
21912135140	2200102A_30.d	Sample	1/2/2020 16:29	673519 IIS-5X	1
21912135141	2200102A_31.d	Sample	1/2/2020 16:40	673519 IIS-5X	1
21912135142	2200102A_32.d	Sample	1/2/2020 16:52	673519 IIS-5X	1
21911270712	2200102A_33.d	Sample	1/2/2020 17:03	672851	1
21911270713	2200102A_34.d	Sample	1/2/2020 17:14	672851	1
21911270719	2200102A_35.d	Sample	1/2/2020 17:26	672851	1
21911270313	2200102A_36.d	Sample	1/2/2020 17:37	672851	1
21911270314	2200102A_37.d	Sample	1/2/2020 17:49	672851	1
21911270322	2200102A_38.d	QC	1/2/2020 18:00	672851	1
21911270323	2200102A_39.d	QC	1/2/2020 18:11	672851	1
21911270318	2200102A_40.d	Sample	1/2/2020 18:22	672851 IIS-3X	1
1400	2200102A_41.d	QC	1/2/2020 18:34		1
21911270319	2200102A_42.d	Sample	1/2/2020 18:45	672851	1
21911270320	2200102A_43.d	Sample	1/2/2020 18:56	672851	1
MeOH shot	2200102A_44.d	MeOH Shot	1/2/2020 19:08		1
1992868	2200102A_45.d	Sample	1/2/2020 19:19		1
1992869	2200102A_46.d	QC	1/2/2020 19:30		1
1992870	2200102A_47.d	QC	1/2/2020 19:41		1
21912135103	2200102A_48.d	Sample	1/2/2020 19:53		1
21912135104	2200102A_49.d	Sample	1/2/2020 20:04		1
21912135105	2200102A_50.d	Sample	1/2/2020 20:15		1
21912135106	2200102A_51.d	Sample	1/2/2020 20:27		1
21912135109	2200102A_52.d	Sample	1/2/2020 20:38		1
21912135110	2200102A_53.d	Sample	1/2/2020 20:49		1
21912135112	2200102A_54.d	Sample	1/2/2020 21:01		1
21912135113	2200102A_55.d	Sample	1/2/2020 21:12		1
1400	2200102A_56.d	QC	1/2/2020 21:23		1

21912135114	2200102A_57.d	Sample	1/2/2020 21:35	1
21912135115	2200102A_58.d	Sample	1/2/2020 21:46	1
21912135116	2200102A_59.d	QC	1/2/2020 21:57	1
21912135117	2200102A_60.d	QC	1/2/2020 22:09	1
21912135118	2200102A_61.d	Sample	1/2/2020 22:20	1
21912135119	2200102A_62.d	Sample	1/2/2020 22:31	1
21912135120	2200102A_63.d	Sample	1/2/2020 22:43	1
21912135121	2200102A_64.d	Sample	1/2/2020 22:54	1
21912135122	2200102A_65.d	Sample	1/2/2020 23:06	1
21912135123	2200102A_66.d	Sample	1/2/2020 23:17	1
21912135133	2200102A_67.d	Sample	1/2/2020 23:28	1
21912135135	2200102A_68.d	Sample	1/2/2020 23:40	1
1400	2200102A_69.d	QC	1/2/2020 23:51	1
21912135137	2200102A_70.d	Sample	1/3/2020 0:02	10
MeOH Shot	2200102A_71.d	MeOH Shot	1/3/2020 0:14	1
1996430	2200102A_72.d	Sample	1/3/2020 0:25	1
1996431	2200102A_73.d	QC	1/3/2020 0:36	1
1996432	2200102A_74.d	QC	1/3/2020 0:48	1
21911262914	2200102A_75.d	Sample	1/3/2020 0:59	1
21912031202	2200102A_76.d	Sample	1/3/2020 1:10	1
21911262801	2200102A_77.d	Sample	1/3/2020 1:22	1
21911272201	2200102A_78.d	Sample	1/3/2020 1:33	1
21911270315	2200102A_79.d	Sample	1/3/2020 1:44	1
21911270316	2200102A_80.d	Sample	1/3/2020 1:56	1
21911270317	2200102A_81.d	Sample	1/3/2020 2:07	1
21911270321	2200102A_82.d	Sample	1/3/2020 2:18	1
21911270814	2200102A_83.d	Sample	1/3/2020 2:30	1
1400	2200102A_84.d	QC	1/3/2020 2:41	1
21911262901	2200102A_85.d	Sample	1/3/2020 2:52	1
21911262902	2200102A_86.d	Sample	1/3/2020 3:04	1
21911262903	2200102A_87.d	Sample	1/3/2020 3:15	1
21911262904	2200102A_88.d	Sample	1/3/2020 3:27	1
21911262908	2200102A_89.d	Sample	1/3/2020 3:38	1
21911262910	2200102A_90.d	Sample	1/3/2020 3:49	1

21911262911	2200102A_91.d	Sample	1/3/2020 4:00		1
21911272303	2200102A_92.d	Sample	1/3/2020 4:11		1
21911272304	2200102A_93.d	Sample	1/3/2020 4:23		1
21912031201	2200102A_94.d	Sample	1/3/2020 4:34		1
1400	2200102A_95.d	QC	1/3/2020 4:45		1
21912243501	2200102A_96.d	Sample	1/3/2020 4:56		1
21911212926	2200102A_97.d	Sample	1/3/2020 5:08		1
21911212927	2200102A_98.d	Sample	1/3/2020 5:19		1
MeOH Shot	2200102A_99.d	MeOH Shot	1/3/2020 5:31		1
1997164	2200102A_100.d	Sample	1/3/2020 5:41		1
1997165	2200102A_101.d	QC	1/3/2020 5:53		1
1997166	2200102A_102.d	QC	1/3/2020 6:04		1
21911270901	2200102A_103.d	Sample	1/3/2020 6:15		1
21911196618	2200102A_104.d	Sample	1/3/2020 6:27	671750	1
21911196626	2200102A_105.d	Sample	1/3/2020 6:38	671750	1
21911196644	2200102A_106.d	Sample	1/3/2020 6:49	671750	1
21911196645	2200102A_107.d	Sample	1/3/2020 7:01	671750	1
21911196646	2200102A_108.d	Sample	1/3/2020 7:12	671750	1
21912060705	2200102A_109.d	Sample	1/3/2020 7:23	673704 DW	1
1400	2200102A_110.d	QC	1/3/2020 7:35		1
1994653	2200102A_111.d	Sample	1/3/2020 7:46	673872	1
1994654	2200102A_112.d	QC	1/3/2020 7:57	673872	1
1994655	2200102A_113.d	QC	1/3/2020 8:09	673872	1
21912189403	2200102A_114.d	Sample	1/3/2020 8:20	673872	1
21912203902	2200102A_115.d	Sample	1/3/2020 8:31	673872	1
MeOH Shot	2200102A_116.d	MeOH Shot	1/3/2020 8:43		1
21912041705	2200102A_117.d	Sample	1/3/2020 8:53	673025 DW	1
21912041706	2200102A_118.d	Sample	1/3/2020 9:05	673025 DW	1
21912041707	2200102A_119.d	Sample	1/3/2020 9:16	673025 DW	1
1400	2200102A_120.d	QC	1/3/2020 9:27		1
MeOH Shot	2200102A_121.d	MeOH Shot	1/3/2020 10:55		1
21912031203x10	2200102A_122.d	Sample	1/3/2020 11:05		1
21912031203	2200102A_123.d	Sample	1/3/2020 11:17		1
1400	2200102A_124.d	QC	1/3/2020 11:28		1

Quantitative Analysis Calibration Report

Batch Data Path	D:\MassHunter\Data\2200102ACAL\QuantResults\2200102A.batch.bin		
Analysis Time	1/6/2020 10:11 AM	**Analyst Name**	GCAL\lcms
Report Time	1/6/2020 10:15 AM	**Reporter Name**	GCAL\lcms
Last Calib Update	1/2/2020 1:13 PM	**Batch State**	Processed

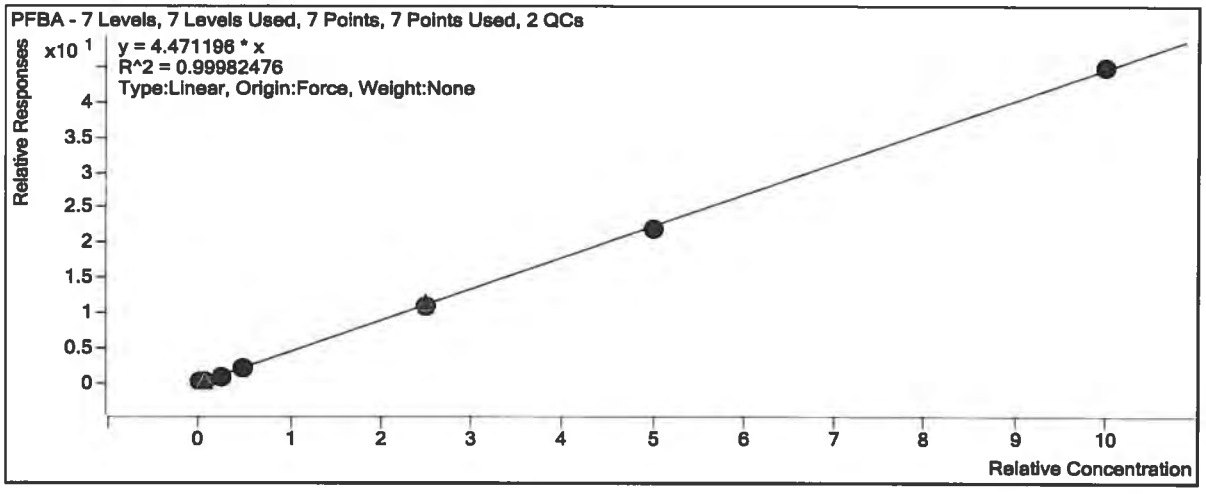
Calibration Info

Extracted ISTD ***MPFBA***

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	27117	20.0000	1355.8565
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	27436	20.0000	1371.8219
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	27335	20.0000	1366.7548
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	27673	20.0000	1383.6718
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	26105	20.0000	1305.2654
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	26173	20.0000	1308.6497
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	25308	20.0000	1265.3894

Target Compound ***PFBA***

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	3357	0.5000	4.9512
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	7285	1.2500	4.2486
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	27442	5.0000	4.0156
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	54710	10.0000	3.9540
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	288569	50.0000	4.4216
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	575197	100.0000	4.3953
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	1137545	200.0000	4.4948

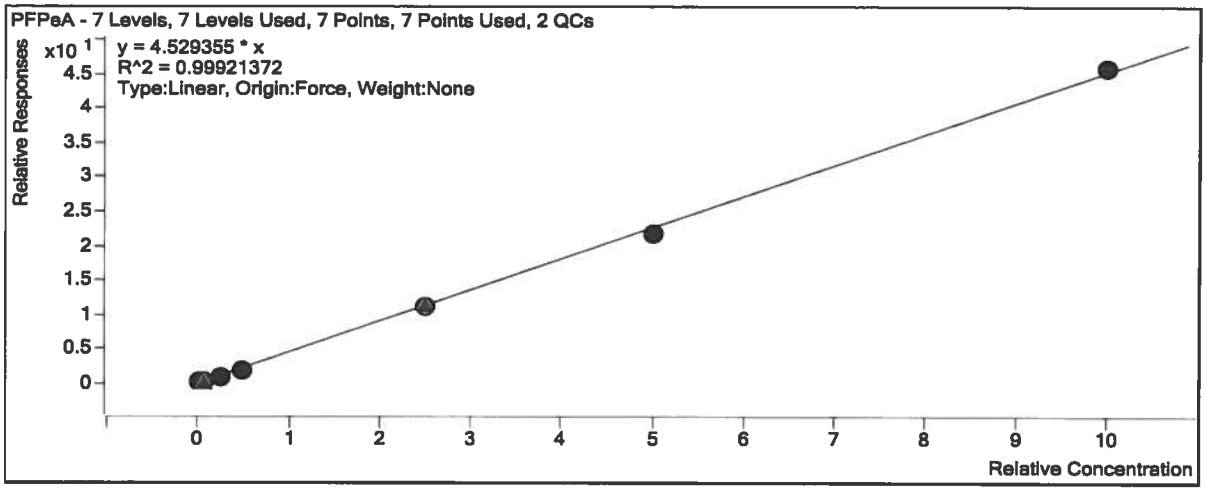


Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	20134	20.0000	1006.7224
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	18704	20.0000	935.1927
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	18760	20.0000	937.9888
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	18458	20.0000	922.8836

Target Compound ***PFPeA***

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	1566	0.5000	3.3322
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	4177	1.2500	3.3094
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	18259	5.0000	3.7839
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	37542	10.0000	3.7292
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	208766	50.0000	4.4647
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	407421	100.0000	4.3436
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	845798	200.0000	4.5824



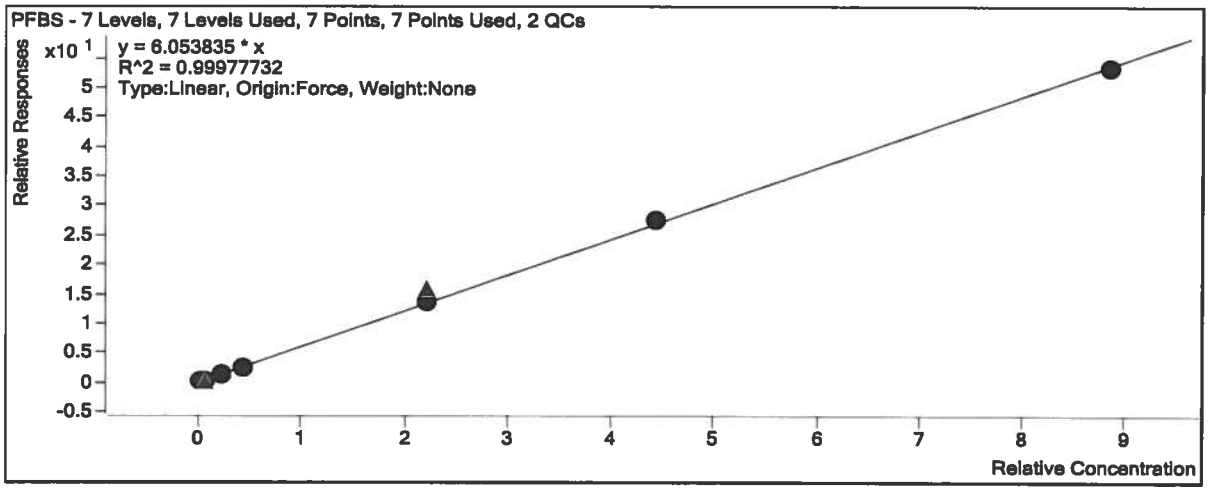
Extracted ISTD ***M3PFBS***

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	15306	20.0000	765.3056
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	17203	20.0000	860.1255
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	16766	20.0000	838.3103
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	16869	20.0000	843.4313

Quantitative Analysis Calibration Report

Target Compound *PFBS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	1879	0.4425	5.5492
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	4825	1.1100	5.0542
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	20682	4.4250	5.5753
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	43978	8.8500	5.8917
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	229458	44.2500	6.1416
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	457760	88.5000	6.1892
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	902252	177.0000	6.0153



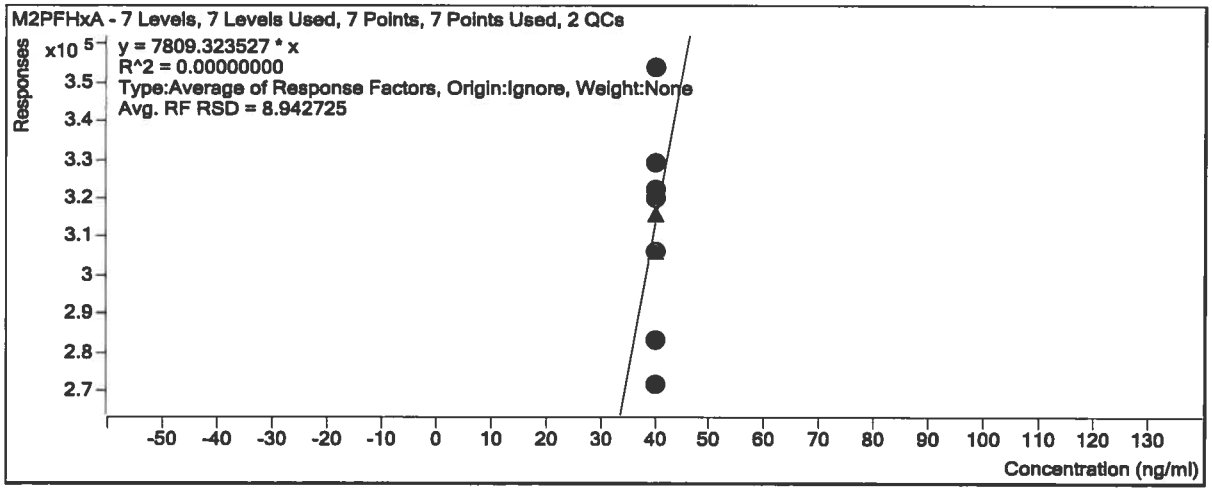
Extracted ISTD *M2 4:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	12982	20.0000	649.1078
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	12852	20.0000	642.6250
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	13121	20.0000	656.0320
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	13180	20.0000	658.9795
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	11806	20.0000	590.2841
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	11599	20.0000	579.9516
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	9916	20.0000	495.7808

Target Compound *4:2 FTS*

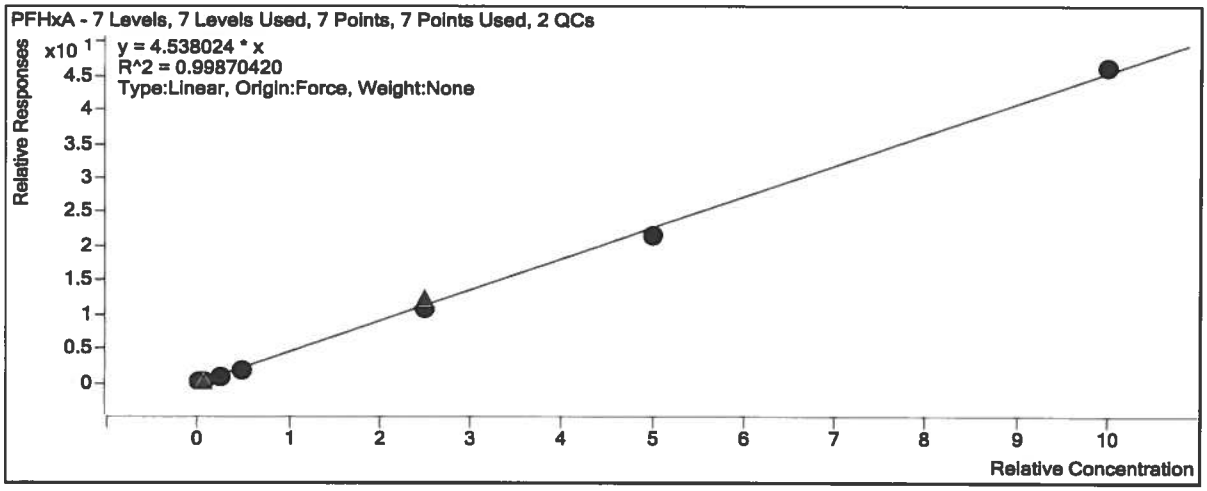
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report



Target Compound *PFHxA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	3325	0.5000	3.8629
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	8367	1.2500	3.7721
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	36674	5.0000	3.9986
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	72487	10.0000	3.9213
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	385895	50.0000	4.3253
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	757327	100.0000	4.3062
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	1528860	200.0000	4.6112

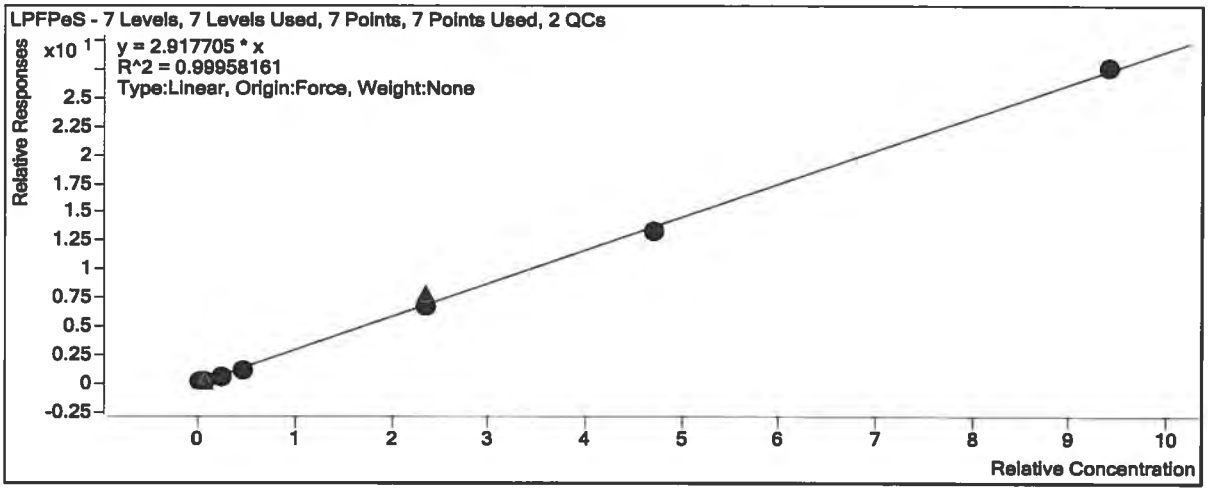


Target Compound *LPFPeS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	917404	188.0000	2.9436



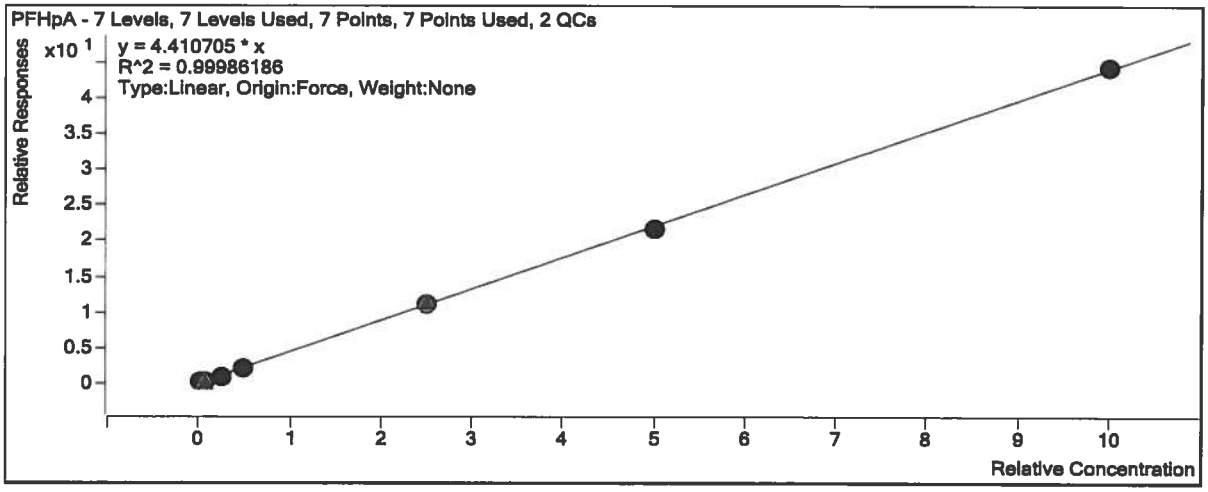
Extracted ISTD *M3HFPODA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	2198	20.0000	109.9140
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	1994	20.0000	99.6765
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	2286	20.0000	114.2786
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	2065	20.0000	103.2702
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	2398	20.0000	119.8994
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	2175	20.0000	108.7309
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	2415	20.0000	120.7314

Target Compound *HFPO-DA*

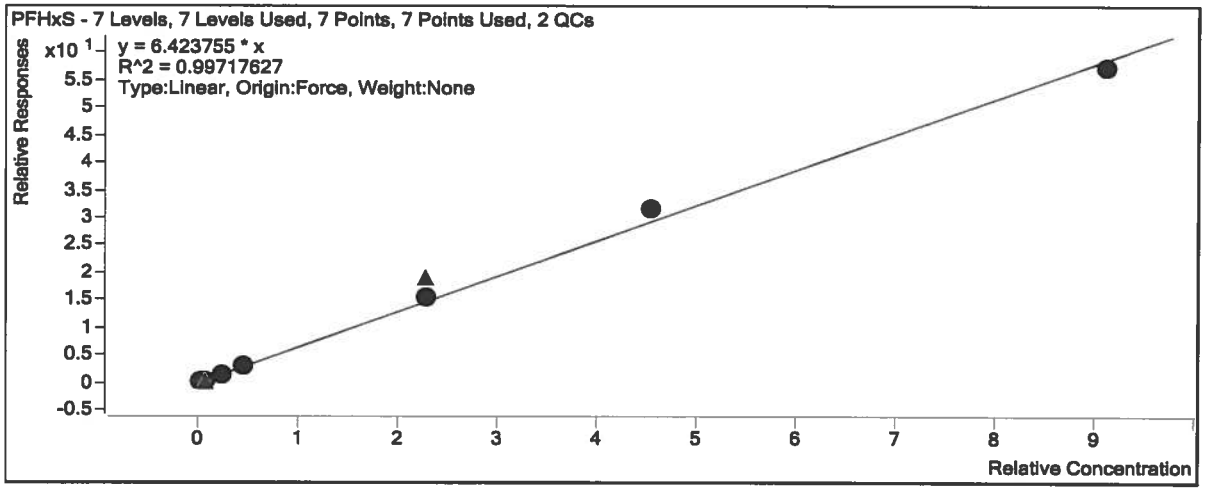
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	205	0.5000	3.7274
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	559	1.2500	4.4831
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	2328	5.0000	4.0738
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	4655	10.0000	4.5071
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	24098	50.0000	4.0197
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	50433	100.0000	4.6383
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	102973	200.0000	4.2645

Quantitative Analysis Calibration Report



Target Compound *PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	1891	0.4560	5.4628
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	6160	1.1400	6.9469
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	23457	4.5600	6.4840
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	46118	9.1200	6.6732
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	244091	45.6000	6.7831
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	491410	91.2000	6.9326
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	946815	182.4000	6.2734

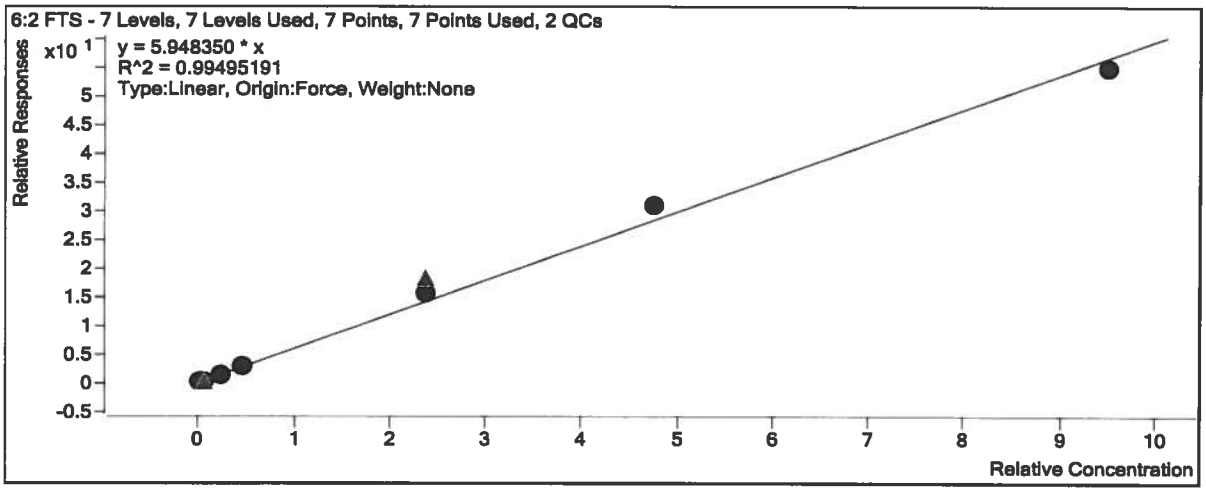


Extracted ISTD *M3PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

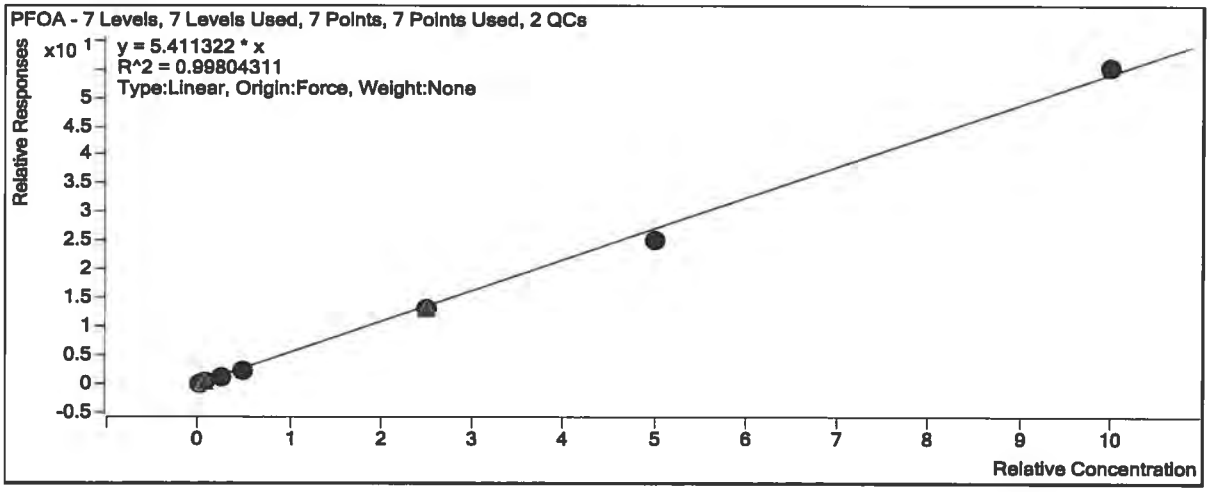
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	72723	9.5000	6.3484
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	364810	47.5000	6.5687
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	686780	95.0000	6.5345
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	1226564	190.0000	5.7618



Target Compound *PFOA*

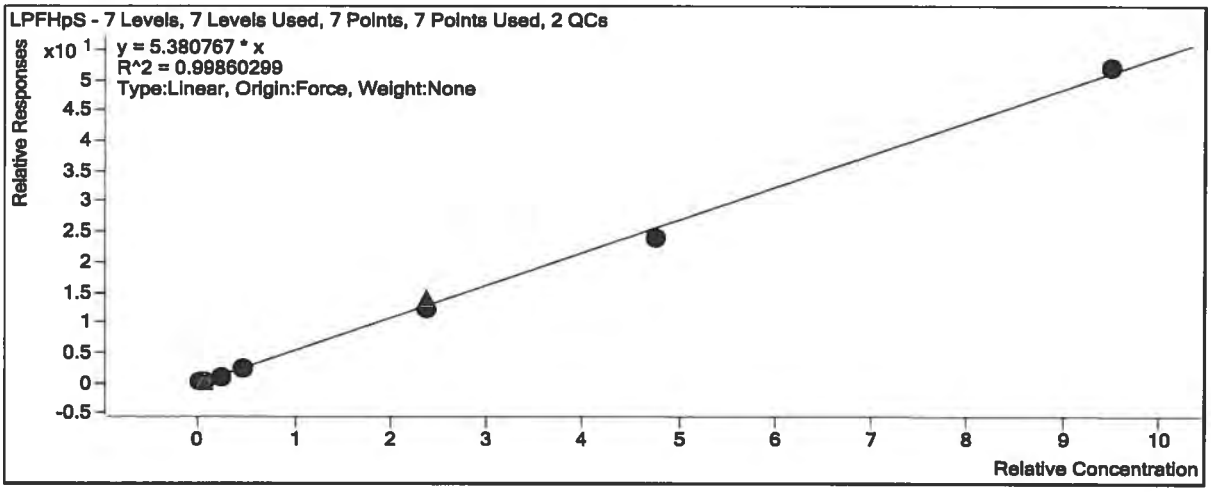
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	2246	0.5000	3.8698
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	6532	1.2500	4.1165
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	29643	5.0000	4.6504
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	58939	10.0000	4.8291
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	304653	50.0000	5.2009
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	609417	100.0000	5.0450
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	1188080	200.0000	5.5181

Quantitative Analysis Calibration Report



Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF



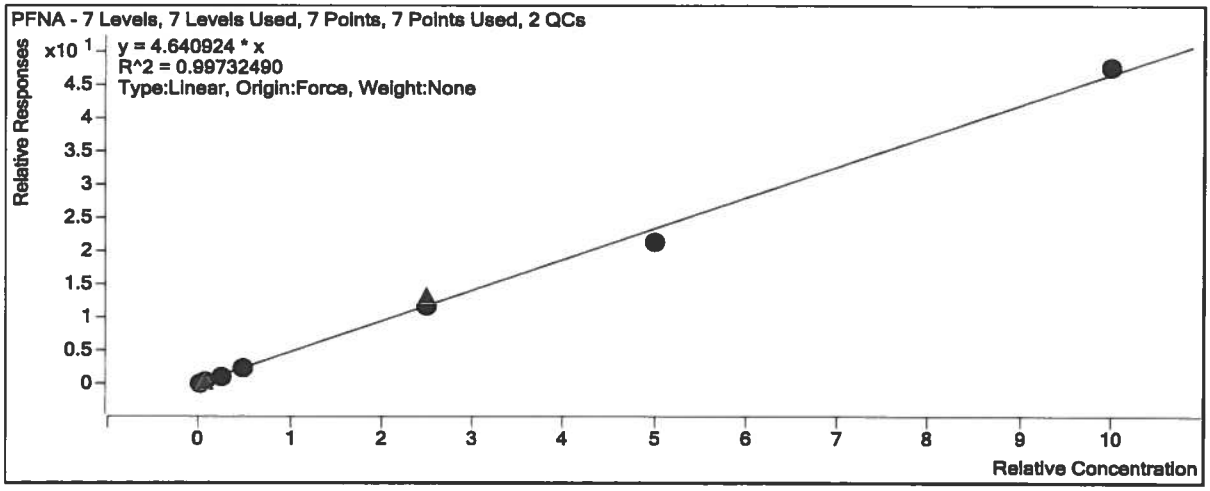
Extracted ISTD ***M9PFNA***

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	29082	20.0000	1454.0855
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	30602	20.0000	1530.1030
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	31241	20.0000	1562.0358
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	29627	20.0000	1481.3665
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	28670	20.0000	1433.5184
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	28975	20.0000	1448.7479
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	25686	20.0000	1284.2960

Target Compound ***PFNA***

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	2398	0.5000	3.2978
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	7329	1.2500	3.8321
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	30389	5.0000	3.8909
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	61864	10.0000	4.1761
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	328687	50.0000	4.5857
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	616093	100.0000	4.2526
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	1218316	200.0000	4.7431

Quantitative Analysis Calibration Report



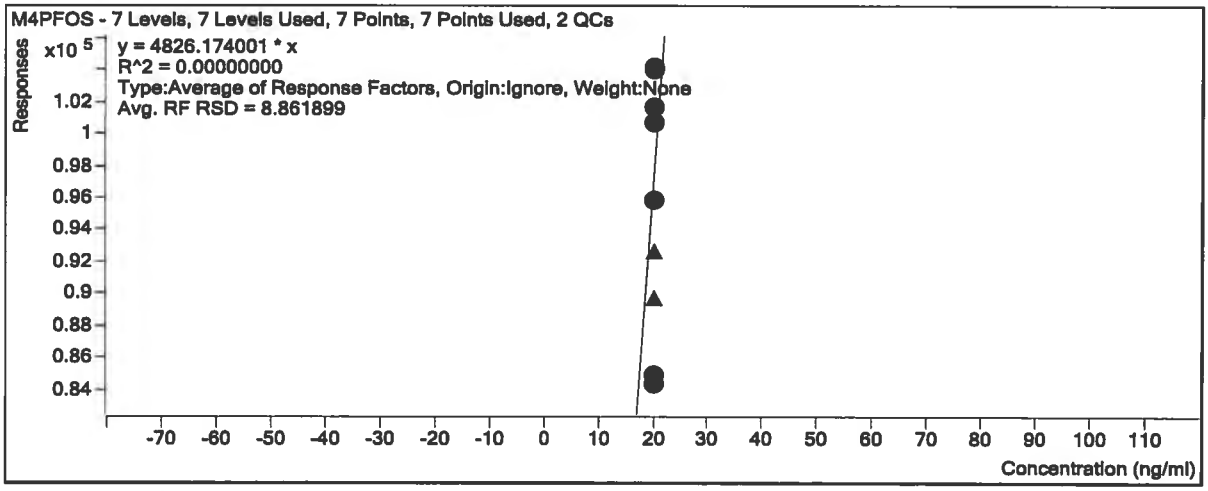
Extracted ISTD *M8PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	11878	20.0000	593.8816
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	11057	20.0000	552.8321
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	11342	20.0000	567.1088
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	10875	20.0000	543.7250
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	10873	20.0000	543.6495
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	11383	20.0000	569.1588
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	11511	20.0000	575.5471

Instrument ISTD *M4PFOS*

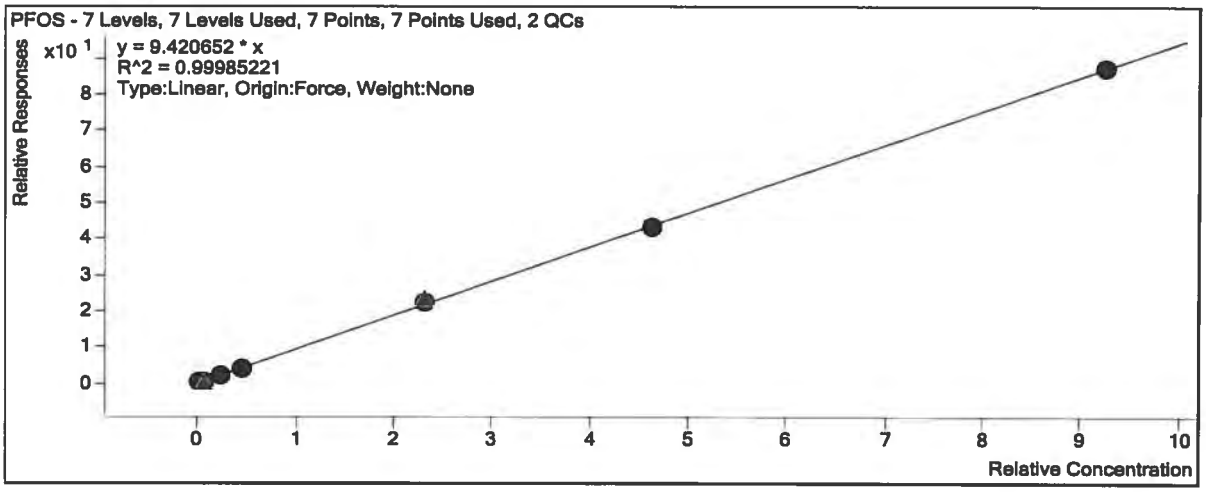
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	84390	20.0000	4219.4888
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	95901	20.0000	4795.0298
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	84941	20.0000	4247.0675
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	104032	20.0000	5201.5782
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	100659	20.0000	5032.9481
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	101608	20.0000	5080.4170
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	104134	20.0000	5206.6887

Quantitative Analysis Calibration Report



Target Compound *PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	2711	0.4628	9.8665
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	5886	1.1600	9.1779
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	24646	4.6280	9.3906
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	47361	9.2550	9.4116
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	246418	46.2800	9.7940
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	491291	92.5500	9.3267
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	1003638	185.1000	9.4208

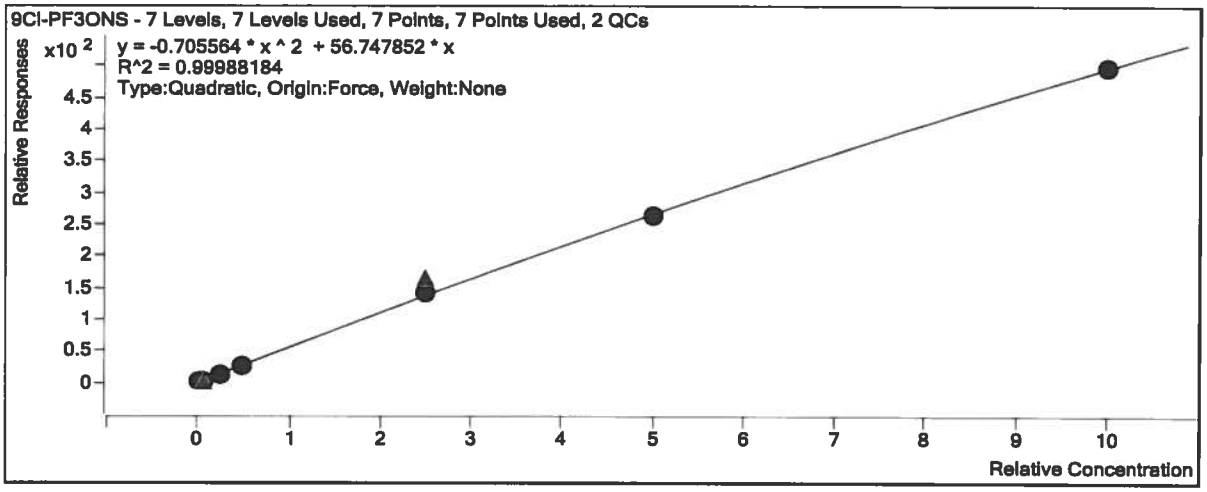


Target Compound *9Cl-PF3ONS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

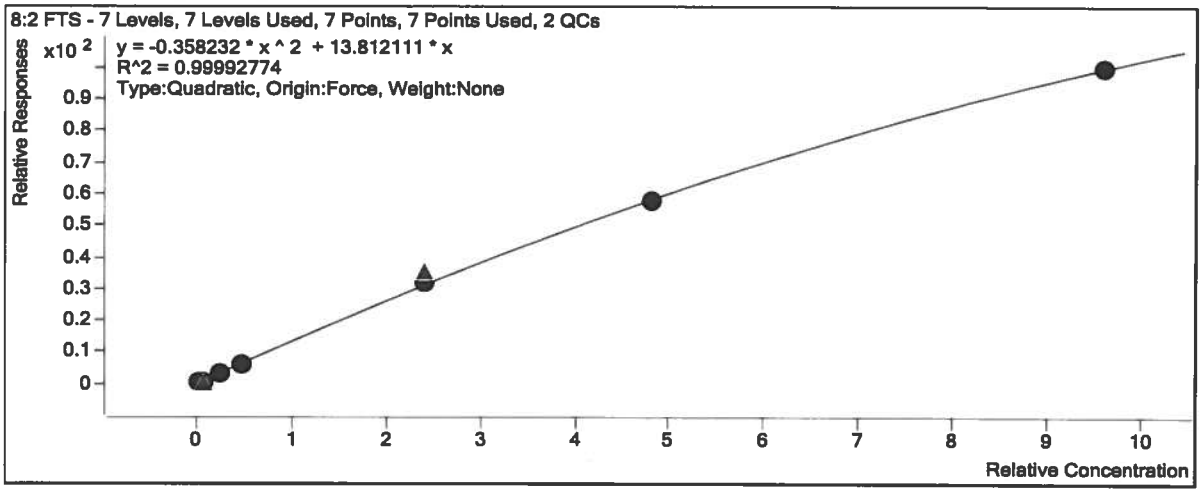
Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	5725319	200.0000	49.7381



Target Compound ***8:2 FTS***

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	3135	0.4800	10.2917
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	9166	1.2000	11.5630
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	39994	4.8000	12.6790
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	80991	9.6000	13.0360
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	409474	48.0000	13.1914
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	768569	96.0000	12.0204
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	1401511	192.0000	10.3785

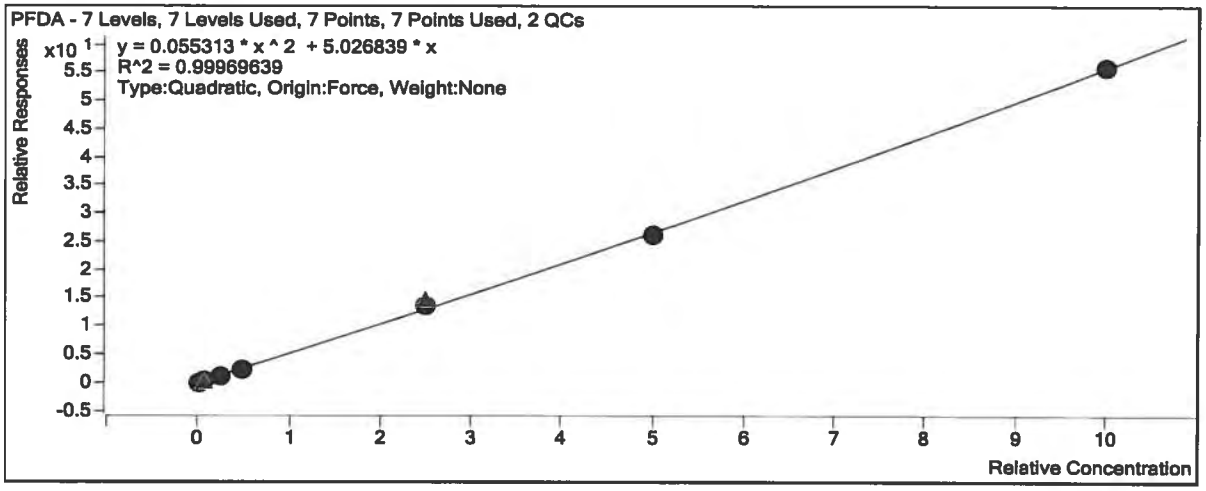


Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	12943	20.0000	647.1710
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	12934	20.0000	646.6874
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	13321	20.0000	666.0279
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	14067	20.0000	703.3350

Target Compound *PFDA*

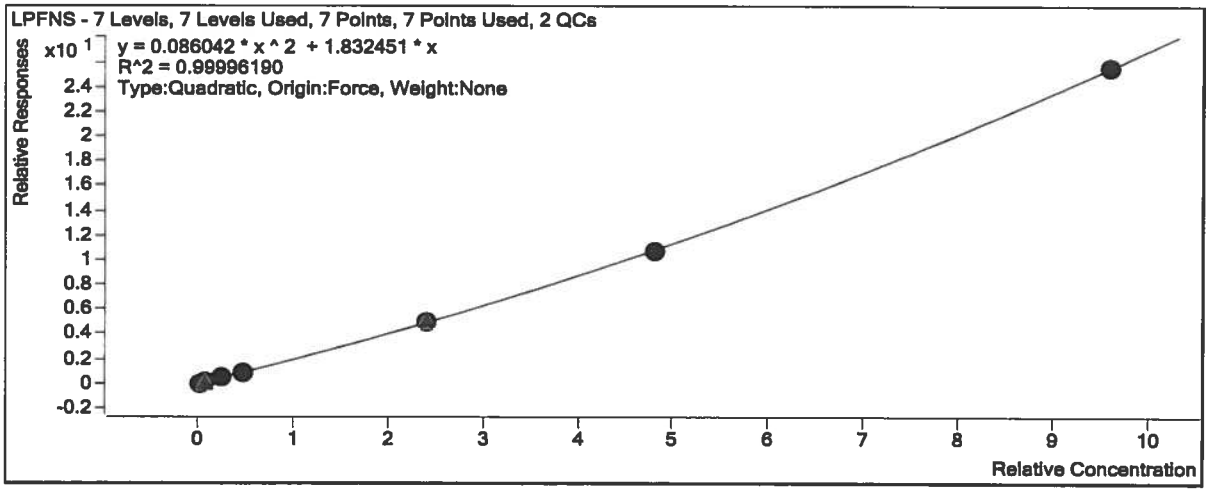
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	2515	0.5000	3.7856
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	8060	1.2500	5.0412
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	30274	5.0000	4.8438
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	59059	10.0000	4.6512
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	326152	50.0000	5.4472
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	611586	100.0000	5.2063
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	1168936	200.0000	5.5878



Instrument ISTD *M2PFDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	117506	20.0000	5875.2864
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	136707	20.0000	6835.3602
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	117581	20.0000	5879.0736
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	140476	20.0000	7023.7942

Quantitative Analysis Calibration Report



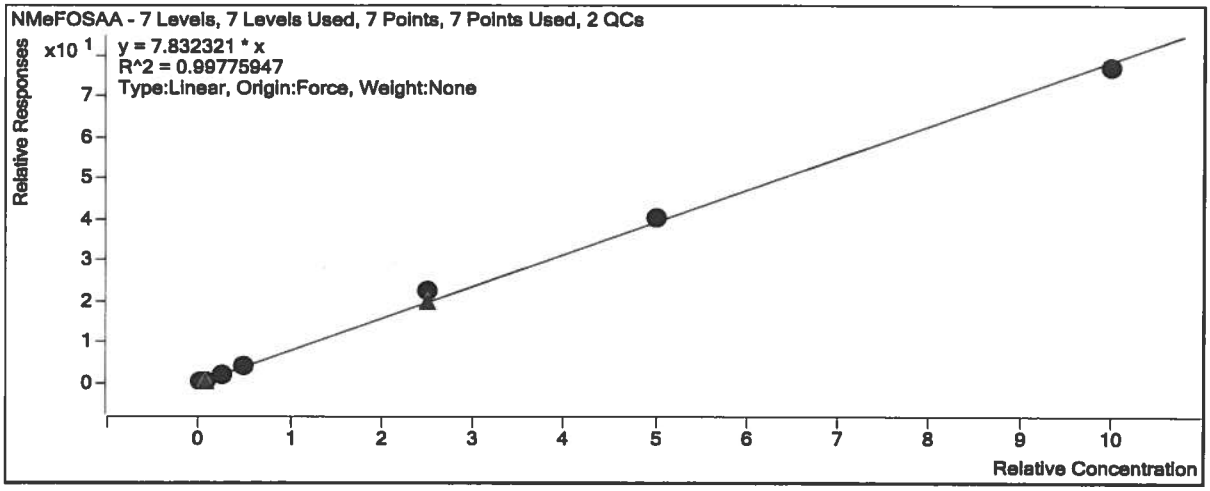
Extracted ISTD *d3-NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	4416	20.0000	220.7808
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	4631	20.0000	231.5656
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	4214	20.0000	210.7048
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	4463	20.0000	223.1598
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	4675	20.0000	233.7495
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	5074	20.0000	253.6837
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	5309	20.0000	265.4646

Target Compound *NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	829	0.5000	7.5117
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	2295	1.2500	7.9282
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	8968	5.0000	8.5125
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	18785	10.0000	8.4177
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	104252	50.0000	8.9200
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	205536	100.0000	8.1020
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	408551	200.0000	7.6950

Quantitative Analysis Calibration Report



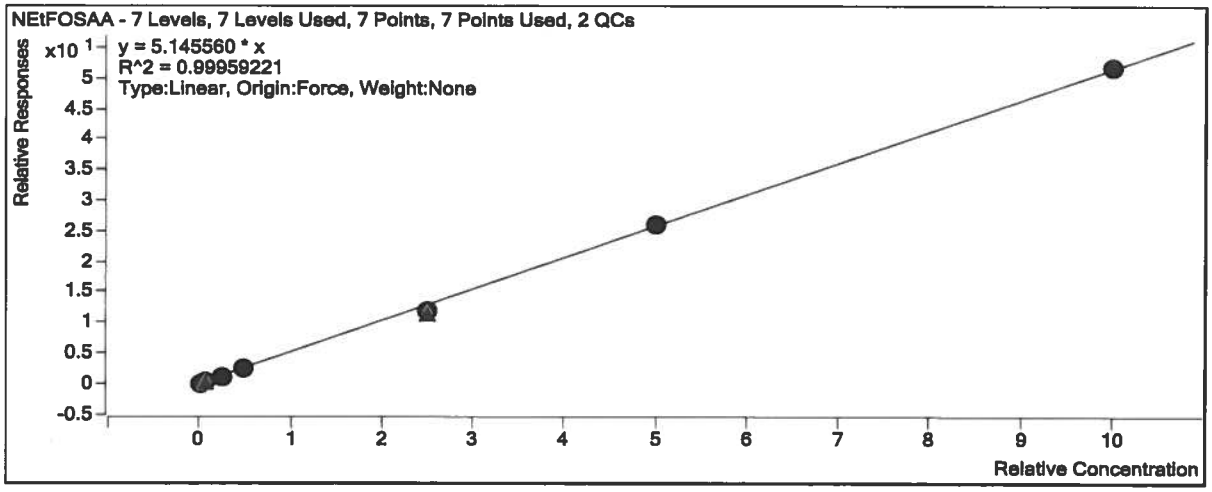
Extracted ISTD *M8FOSA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	21051	20.0000	1052.5558
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	22866	20.0000	1143.3142
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	22769	20.0000	1138.4257
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	19383	20.0000	969.1517
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	21638	20.0000	1081.9049
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	22016	20.0000	1100.7847
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	23253	20.0000	1162.6555

Target Compound *FOSA-I*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	2645	0.5000	5.0251
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	8603	1.2500	6.0199
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	33545	5.0000	5.8932
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	54734	10.0000	5.6476
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	347307	50.0000	6.4203
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	714348	100.0000	6.4894
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Quantitative Analysis Calibration Report



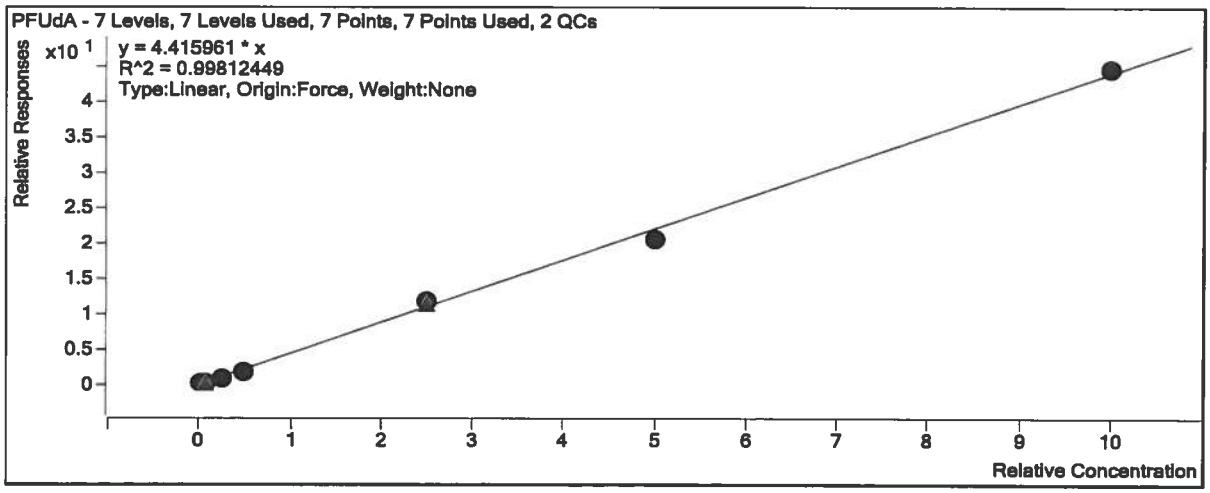
Extracted ISTD *M7PFUdA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	28662	20.0000	1433.1049
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	29555	20.0000	1477.7310
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	30834	20.0000	1541.7027
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	31143	20.0000	1557.1479
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	25662	20.0000	1283.0913
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	28447	20.0000	1422.3524
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	24857	20.0000	1242.8450

Target Compound *PFUdA*

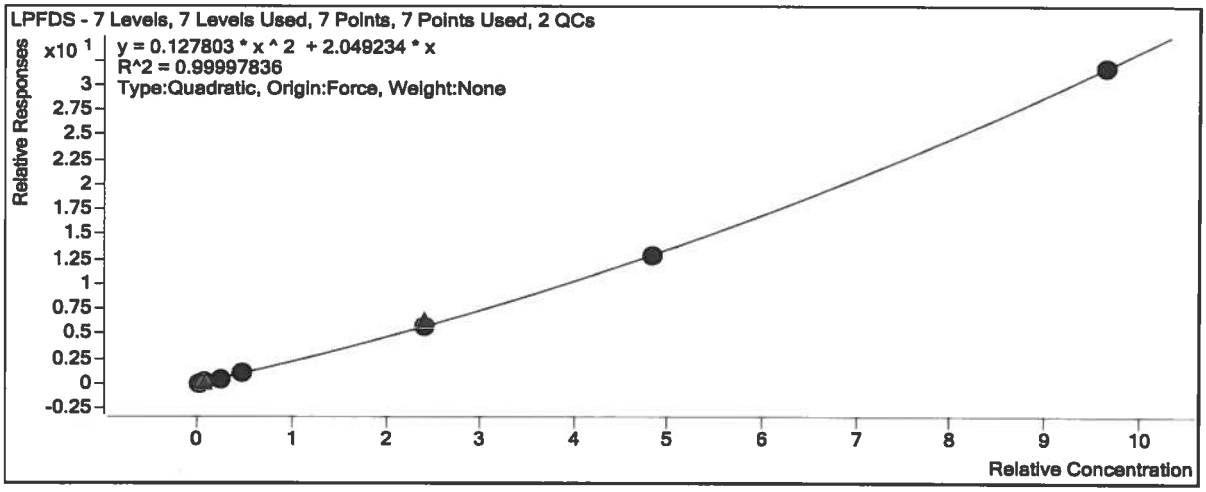
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	2323	0.5000	3.2417
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	6706	1.2500	3.6306
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	28307	5.0000	3.6721
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	60876	10.0000	3.9095
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	301571	50.0000	4.7007
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	586360	100.0000	4.1225
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	1111925	200.0000	4.4733

Quantitative Analysis Calibration Report



Target Compound *LPFDS*

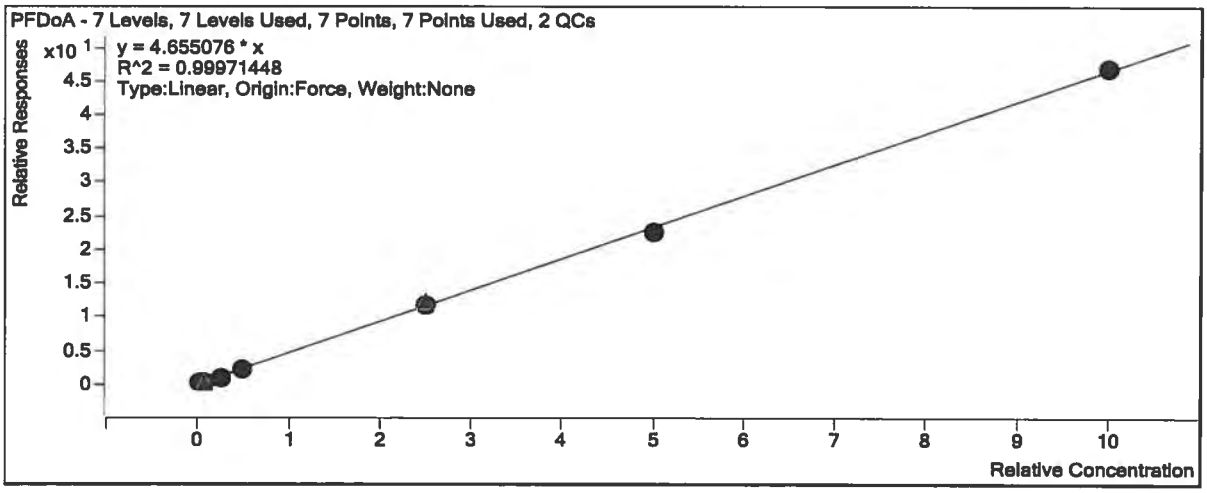
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	1169	0.4825	1.8229
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	2741	1.2100	1.7711
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	11683	4.8250	1.9370
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	24556	9.6500	2.0041
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	138588	48.2500	2.3986
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	300778	96.5000	2.6533
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	662849	193.0000	3.2835



Target Compound *11Cl-PF3OUdS*

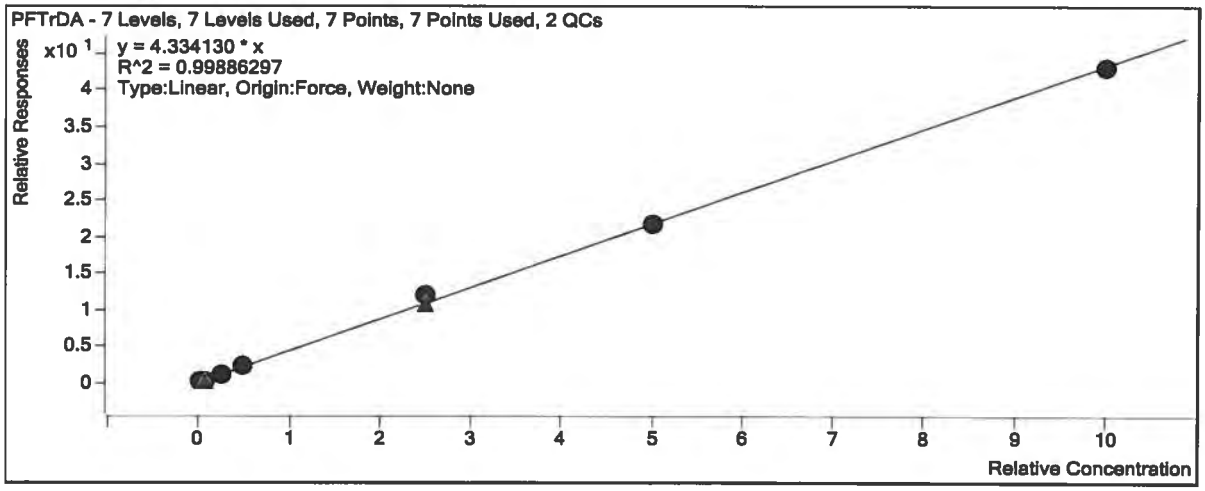
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report



Target Compound *PFTrDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	1614	0.5000	3.6751
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	4946	1.2500	4.4424
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	18479	5.0000	4.1860
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	38660	10.0000	4.4144
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	216363	50.0000	4.8518
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	409261	100.0000	4.3108
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	817765	200.0000	4.3075

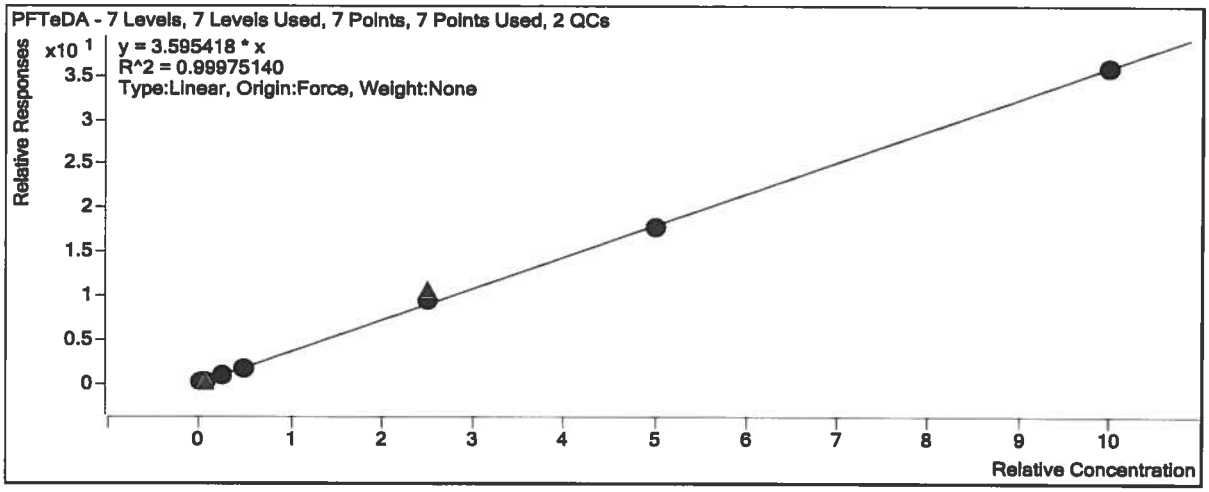


Target Compound *PFTeDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	681102	200.0000	3.5877



Extracted ISTD *M2PFTeDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200102ACAL\2200102A_04.d	Calibration	1	☑	17567	20.0000	878.3348
D:\MassHunter\Data\2200102ACAL\2200102A_05.d	Calibration	2	☑	17813	20.0000	890.6295
D:\MassHunter\Data\2200102ACAL\2200102A_06.d	Calibration	3	☑	17658	20.0000	882.9123
D:\MassHunter\Data\2200102ACAL\2200102A_07.d	Calibration	4	☑	17515	20.0000	875.7731
D:\MassHunter\Data\2200102ACAL\2200102A_08.d	Calibration	5	☑	17838	20.0000	891.8892
D:\MassHunter\Data\2200102ACAL\2200102A_09.d	Calibration	6	☑	18988	20.0000	949.3930
D:\MassHunter\Data\2200102ACAL\2200102A_10.d	Calibration	7	☑	18985	20.0000	949.2320

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/02/2020 12:31	Lab File ID:	2200102A_13.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674518

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomer sulfonate	ng/L	50000	61500	123	70	130	
8:2 Fluorotelomer sulfonate	ng/L	50000	54800	110	70	130	
NEtFOSAA	ng/L	50000	49800	100	70	130	
NMeFOSAA	ng/L	50000	56000	112	70	130	
Perfluorobutanoic acid	ng/L	50000	52000	104	70	130	
Perfluorobutanesulfonic acid	ng/L	50000	53300	107	70	130	
Perfluorodecanoic acid	ng/L	50000	57600	115	70	130	
Perfluorododecanoic acid	ng/L	50000	53900	108	70	130	
Perfluoroheptanoic acid	ng/L	50000	51800	104	70	130	
Perfluorohexanoic acid	ng/L	50000	54900	110	70	130	
Perfluorohexanesulfonic acid	ng/L	50000	59200	118	70	130	
Perfluorononanoic acid	ng/L	50000	57200	114	70	130	
Perfluorooctanoic acid	ng/L	50000	49000	98	70	130	
Perfluorooctane Sulfonate	ng/L	50000	50700	101	70	130	
Perfluoropentanoic acid	ng/L	50000	50300	101	70	130	
Perfluorotetradecanoic acid	ng/L	50000	60300	121	70	130	
Perfluorotridecanoic acid	ng/L	50000	50500	101	70	130	
Perfluoroundecanoic acid	ng/L	50000	52700	105	70	130	

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/02/2020 12:42	Lab File ID:	2200102A_14.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674518

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomer sulfonate	ng/L	7.93	9.60	121	70	130	
8:2 Fluorotelomer sulfonate	ng/L	8.00	7.60	95	70	130	
NEtFOSAA	ng/L	8.33	8.07	97	70	130	
NMeFOSAA	ng/L	8.33	8.40	101	70	130	
Perfluorobutanoic acid	ng/L	8.33	8.53	103	70	130	
Perfluorobutanesulfonic acid	ng/L	7.40	6.67	91	70	130	
Perfluorodecanoic acid	ng/L	8.33	7.87	94	70	130	
Perfluorododecanoic acid	ng/L	8.33	7.93	96	70	130	
Perfluoroheptanoic acid	ng/L	8.33	7.73	93	70	130	
Perfluorohexanoic acid	ng/L	8.33	7.20	86	70	130	
Perfluorohexanesulfonic acid	ng/L	7.60	8.27	108	70	130	
Perfluorononanoic acid	ng/L	8.33	7.33	88	70	130	
Perfluorooctanoic acid	ng/L	8.33	7.40	89	70	130	
Perfluorooctane Sulfonate	ng/L	7.73	8.73	113	70	130	
Perfluoropentanoic acid	ng/L	8.33	6.65	80	70	130	
Perfluorotetradecanoic acid	ng/L	8.33	8.60	103	70	130	
Perfluorotridecanoic acid	ng/L	8.33	8.00	96	70	130	
Perfluoroundecanoic acid	ng/L	8.33	7.07	85	70	130	

4I

ORGANICS INSTRUMENT BLANK

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/02/2020 12:54	Lab File ID:	2200102A_15.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674518

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
6:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.79	4.00	10.0	
8:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.63	4.00	10.0	
NEtFOSAA	ng/L	8.00	U	5.38	8.00	10.0	
NMeFOSAA	ng/L	8.00	U	4.60	8.00	10.0	
Perfluorobutanesulfonic acid	ng/L	4.00	U	1.47	4.00	10.0	
Perfluorobutanoic acid	ng/L	4.00	U	2.13	4.00	10.0	
Perfluorodecanoic acid	ng/L	4.00	U	1.65	4.00	10.0	
Perfluorododecanoic acid	ng/L	4.00	U	2.45	4.00	10.0	
Perfluoroheptanoic acid	ng/L	4.00	U	1.85	4.00	10.0	
Perfluorohexanesulfonic acid	ng/L	4.00	U	1.64	4.00	10.0	
Perfluorohexanoic acid	ng/L	4.00	U	1.94	4.00	10.0	
Perfluorononanoic acid	ng/L	4.00	U	1.68	4.00	10.0	
Perfluorooctane Sulfonate	ng/L	4.00	U	1.70	4.00	10.0	
Perfluorooctanoic acid	ng/L	4.00	U	1.80	4.00	10.0	
Perfluoropentanoic acid	ng/L	4.00	U	2.35	4.00	10.0	
Perfluorotetradecanoic acid	ng/L	4.00	U	2.76	4.00	10.0	
Perfluorotridecanoic acid	ng/L	4.00	U	2.56	4.00	10.0	
Perfluoroundecanoic acid	ng/L	4.00	U	1.86	4.00	10.0	

* - Result greater than 1/2 LOQ

FORM 4I - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/02/2020 15:33	Lab File ID:	2200102A_25.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674518

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomer sulfonate	ng/L	47500	53400	113	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	47600	99	70	130	
NEtFOSAA	ng/L	50000	53400	107	70	130	
NMeFOSAA	ng/L	50000	57400	115	70	130	
Perfluorobutanoic acid	ng/L	50000	48800	98	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	43000	97	70	130	
Perfluorodecanoic acid	ng/L	50000	53400	107	70	130	
Perfluorododecanoic acid	ng/L	50000	55100	110	70	130	
Perfluoroheptanoic acid	ng/L	50000	49500	99	70	130	
Perfluorohexanoic acid	ng/L	50000	48800	98	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	48400	106	70	130	
Perfluorononanoic acid	ng/L	50000	50500	101	70	130	
Perfluorooctanoic acid	ng/L	50000	52000	104	70	130	
Perfluorooctane Sulfonate	ng/L	46300	53500	116	70	130	
Perfluoropentanoic acid	ng/L	50000	47300	95	70	130	
Perfluorotetradecanoic acid	ng/L	50000	52900	106	70	130	
Perfluorotridecanoic acid	ng/L	50000	54200	108	70	130	
Perfluoroundecanoic acid	ng/L	50000	45800	92	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/02/2020 23:51	Lab File ID:	2200102A_69.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674518

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomer sulfonate	ng/L	47500	50900	107	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	47100	98	70	130	
NEtFOSAA	ng/L	50000	59000	118	70	130	
NMeFOSAA	ng/L	50000	56000	112	70	130	
Perfluorobutanoic acid	ng/L	50000	48900	98	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	43100	97	70	130	
Perfluorodecanoic acid	ng/L	50000	53100	106	70	130	
Perfluorododecanoic acid	ng/L	50000	51300	103	70	130	
Perfluoroheptanoic acid	ng/L	50000	49500	99	70	130	
Perfluorohexanoic acid	ng/L	50000	45900	92	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	45700	100	70	130	
Perfluorononanoic acid	ng/L	50000	50800	102	70	130	
Perfluorooctanoic acid	ng/L	50000	49900	100	70	130	
Perfluorooctane Sulfonate	ng/L	46300	51800	112	70	130	
Perfluoropentanoic acid	ng/L	50000	46900	94	70	130	
Perfluorotetradecanoic acid	ng/L	50000	53100	106	70	130	
Perfluorotridecanoic acid	ng/L	50000	54100	108	70	130	
Perfluoroundecanoic acid	ng/L	50000	49300	99	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/03/2020 02:41	Lab File ID:	2200102A_84.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674518

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomer sulfonate	ng/L	47500	50800	107	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	44400	92	70	130	
NEtFOSAA	ng/L	50000	55900	112	70	130	
NMeFOSAA	ng/L	50000	63900	128	70	130	
Perfluorobutanoic acid	ng/L	50000	48400	97	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	42300	96	70	130	
Perfluorodecanoic acid	ng/L	50000	55300	111	70	130	
Perfluorododecanoic acid	ng/L	50000	50500	101	70	130	
Perfluoroheptanoic acid	ng/L	50000	50700	101	70	130	
Perfluorohexanoic acid	ng/L	50000	46600	93	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	45300	99	70	130	
Perfluorononanoic acid	ng/L	50000	50800	102	70	130	
Perfluorooctanoic acid	ng/L	50000	49100	98	70	130	
Perfluorooctane Sulfonate	ng/L	46300	49100	106	70	130	
Perfluoropentanoic acid	ng/L	50000	45700	91	70	130	
Perfluorotetradecanoic acid	ng/L	50000	51900	104	70	130	
Perfluorotridecanoic acid	ng/L	50000	53000	106	70	130	
Perfluoroundecanoic acid	ng/L	50000	48600	97	70	130	

FORM 7E - ORG

8I

INJECTION INTERNAL STANDARD AREA SUMMARY

Report No:	219121351	Standard ID:	1205 (ICAL Midpoint)
Analyst:	BMH	Instrument ID:	QQQ1
Analysis Date:	01/02/20 11:35	Lab File ID:	2200102A_08.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674518

	M2PFDA	M2PFHxA	M2PFOA	M4PFOS
	Area	*Area*	*Area*	*Area*
STANDARD	128033	329173	114316	100659

CLIENT SAMPLE ID	*GCAL SAMP ID*		#		#		#		#
MB1992868	1992868	170417		409161		152231		118456	
LCS1992869	1992869	152296		372285		133514		108634	
LCSD1992870	1992870	153834		381856		136499		113499	
MB1992871	1992871	628544	*	1534761	*	582111	*	466032	*
LCS1992872	1992872	656535	*	1571393	*	591776	*	469727	*
LCSD1992873	1992873	627669	*	1548305	*	587593	*	468470	*
AOI 1-SB1-0.5-1	21912135103	158790		379255		138157		111065	
AOI 1-SB1-6-8	21912135104	160825		423705		153012		121410	
AOI 1-SB1-12-14	21912135105	146020		371911		107990		107071	
AOI 1-SB2-0.5-1	21912135106	143261		368529		134598		104091	
AOI 1-SB3-0.5-1	21912135109	164220		400669		149518		117839	
AOI 1-SB3-1-2	21912135110	153870		378788		140844		113840	
CS-SD05-0-1	21912135112	120990		335660		117776		92875	
AOI 2-SB1-0.5-1	21912135113	146736		379136		138239		108209	
AOI 2-SB1-11-13	21912135114	145728		361381		129758		103258	
AOI 2-SB1-21-23	21912135115	136869		355688		127914		98468	
AOI 2-SB1-21-23MS	21912135116	150818		388253		142471		118534	
AOI 2-SB1-21-23MSD	21912135117	124325		318947		117771		74306	
AOI 3-SB1-0.5-1	21912135118	129976		329149		118201		96064	
AOI 3-SB1-1-2	21912135119	125784		332581		119959		98711	
AOI 3-SB1-1-2-FD	21912135120	134237		355392		130281		107125	
AOI 3-SB2-0.5-1	21912135121	145616		363852		129846		113480	
AOI 3-SB2-7-9	21912135122	136030		338215		122185		100052	
AOI 3-SB2-15-17	21912135123	132241		336752		122210		97535	
CS-SD01-0-1	21912135133	39831	*	309826		100495		51160	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

*for monitoring only

8I

INJECTION INTERNAL STANDARD AREA SUMMARY

Report No:	219121351	Standard ID:	1205 (ICAL Midpoint)
Analyst:	BMH	Instrument ID:	QQQ1
Analysis Date:	01/02/20 11:35	Lab File ID:	2200102A_08.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674518

	M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
	Area		*Area*		*Area*		*Area*	
STANDARD	128033		329173		114316		100659	
CLIENT SAMPLE ID	***GCAL SAMP ID***	*#*		*#*		*#*		*#*
CS-SD02-0-1	21912135135	98191		280450		98646		80377	
CS-SD03-0-1	21912135137	120934		311075		110335		85523	
CS-SD04-0-1	21912135139	518988	*	1293335	*	487233	*	388079	*
CS-SD06-0-1	21912135140	595450	*	1480988	*	551006	*	454407	*
CS-SD07-0-1	21912135141	522440	*	1552406	*	553040	*	404953	*
CS-SD08-0-1	21912135142	370868	*	1486863	*	504619	*	359311	*

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

*for monitoring only

LCMS1 Run Log

Analyst:	BMH	Expiration
Batch:	2200103B	Date
Current ICAL Bath:	2200103BCAL/2200103BCALDW	Date
20mM Amm Acetate	010-28-6	1/5/2020
Methanol	2128641	7/31/2024
Calibration Std	010-27-8	6/30/2020
ICV Std	010-19-7	6/3/2020
EIS Mix	010-27-7	6/30/2020

Name	Data File	Type	Acq. Date-Time	Comment	Dil.
MeOH Shot	2200103B_01.d	MeOH Shot	1/3/2020 15:09		1
1201	2200103B_02.d	Cal	1/3/2020 15:19		1
1202	2200103B_03.d	Cal	1/3/2020 15:31		1
1203	2200103B_04.d	Cal	1/3/2020 15:42		1
1204	2200103B_05.d	Cal	1/3/2020 15:53		1
1205	2200103B_06.d	Cal	1/3/2020 16:05		1
1206	2200103B_07.d	Cal	1/3/2020 16:16		1
1207	2200103B_08.d	Cal	1/3/2020 16:27		1
1600	2200103B_11.d	QC	1/3/2020 17:00		1
1450	2200103B_12.d	QC	1/3/2020 17:11		1
1500	2200103B_13.d	Sample	1/3/2020 17:23		1
1997758	2200103B_15.d	Sample	1/3/2020 17:45	674590	1
1997759	2200103B_16.d	QC	1/3/2020 17:56	674590	1
1997760	2200103B_17.d	QC	1/3/2020 18:08	674590	1
1991132	2200103B_18.d	Sample	1/3/2020 18:19	673213	1
1991133	2200103B_19.d	QC	1/3/2020 18:30	673213	1
1991134	2200103B_20.d	QC	1/3/2020 18:42	673213	1
21912311302	2200103B_21.d	Sample	1/3/2020 18:53	674590	1
22001020201	2200103B_22.d	Sample	1/3/2020 19:04	674590	1
22001020202	2200103B_23.d	Sample	1/3/2020 19:16	674590	1
22001020203	2200103B_24.d	Sample	1/3/2020 19:27	674590	1
21912310903	2200103B_25.d	Sample	1/3/2020 19:38	674590	1

21912310904	2200103B_26.d	Sample	1/3/2020 19:50	674590	1
21912310905	2200103B_27.d	Sample	1/3/2020 20:01	674590	1
21912310902	2200103B_28.d	Sample	1/3/2020 20:12	674590	1
21912310901	2200103B_29.d	Sample	1/3/2020 20:23	674590	1
21912311301	2200103B_30.d	Sample	1/3/2020 20:35	674590	1
1400	2200103B_31.d	QC	1/3/2020 20:46		1
1998212	2200103B_32.d	Sample	1/3/2020 20:57	674681	1
1998213	2200103B_33.d	QC	1/3/2020 21:09	674681	1
1998214	2200103B_34.d	QC	1/3/2020 21:20	674681	1
22001030701	2200103B_35.d	Sample	1/3/2020 21:31	674681	1
22001030702	2200103B_36.d	Sample	1/3/2020 21:43	674681	1
22001030703	2200103B_37.d	Sample	1/3/2020 21:54	674681	1
22001030704	2200103B_38.d	Sample	1/3/2020 22:05	674681	1
22001030705	2200103B_39.d	Sample	1/3/2020 22:17	674681	1
22001030706	2200103B_40.d	Sample	1/3/2020 22:28	674681	1
22001030707	2200103B_41.d	Sample	1/3/2020 22:40	674681	1
22001030708	2200103B_42.d	Sample	1/3/2020 22:51	674681	1
22001030709	2200103B_43.d	Sample	1/3/2020 23:02	674681	1
22001030710	2200103B_44.d	Sample	1/3/2020 23:13	674681	1
1400	2200103B_45.d	QC	1/3/2020 23:24		1
21911272301	2200103B_46.d	Sample	1/3/2020 23:36	672937 IIS - 2x	1
21912051702	2200103B_47.d	Sample	1/3/2020 23:47	672937 IIS - 2x	1
21911262912	2200103B_48.d	Sample	1/3/2020 23:58	672937 IIS - 2x	1
21911262913	2200103B_49.d	Sample	1/4/2020 0:10	672937 IIS - 2x	1
21911262909	2200103B_50.d	Sample	1/4/2020 0:21	672937 IIS - 2x	1
21911272302 x10	2200103B_51.d	Sample	1/4/2020 0:32	672937 IIS - 2x	1
21911272302	2200103B_52.d	Sample	1/4/2020 0:44	672937 IIS - 2x	1
21911272305	2200103B_53.d	Sample	1/4/2020 0:55	672937 IIS - 2x	1
21911253101	2200103B_54.d	Sample	1/4/2020 1:06	672937 IIS - 2x	1
21912051601	2200103B_55.d	Sample	1/4/2020 1:18	672937 IIS - 2x	1
1400	2200103B_56.d	QC	1/4/2020 1:29		1
21912051701	2200103B_57.d	Sample	1/4/2020 1:40	672937 IIS - 2x	1
21912110701 x20	2200103B_58.d	Sample	1/4/2020 1:52	673309	20
21912110702 x5	2200103B_59.d	Sample	1/4/2020 2:03	673309	5

21912120601 x5	2200103B_60.d	Sample	1/4/2020 2:14	673396	5
MeOH shot	2200103B_61.d	MeOH Shot	1/4/2020 2:26		1
MeOH shot	2200103B_62.d	MeOH Shot	1/4/2020 2:36		1
1992874	2200103B_63.d	Sample	1/4/2020 2:47	673520	1
1992875	2200103B_64.d	QC	1/4/2020 2:59	673520	1
1992876	2200103B_65.d	QC	1/4/2020 3:10	673520	1
21912135125	2200103B_66.d	Sample	1/4/2020 3:21	673520	1
21912135101	2200103B_67.d	Sample	1/4/2020 3:33	673520	1
21912135102	2200103B_68.d	Sample	1/4/2020 3:44	673520	1
21912135107	2200103B_69.d	Sample	1/4/2020 3:55	673520	1
21912135108	2200103B_70.d	Sample	1/4/2020 4:07	673520	1
21912135111	2200103B_71.d	Sample	1/4/2020 4:18	673520	1
1400	2200103B_72.d	QC	1/4/2020 4:29		1
21912135124	2200103B_73.d	Sample	1/4/2020 4:41	673520	1
21912135126	2200103B_74.d	Sample	1/4/2020 4:52	673520	1
21912135127	2200103B_75.d	Sample	1/4/2020 5:04	673520	1
21912135128	2200103B_76.d	Sample	1/4/2020 5:15	673520	1
21912135129	2200103B_77.d	QC	1/4/2020 5:26	673520	1
21912135130	2200103B_78.d	QC	1/4/2020 5:38	673520	1
21912135131	2200103B_79.d	Sample	1/4/2020 5:49	673520	1
21912135132	2200103B_80.d	Sample	1/4/2020 6:01	673520	1
21912135134	2200103B_81.d	Sample	1/4/2020 6:12	673520	1
21912135136	2200103B_82.d	Sample	1/4/2020 6:23	673520	1
1400	2200103B_83.d	QC	1/4/2020 6:35		1
21912135138	2200103B_84.d	Sample	1/4/2020 6:46	673520	1
21912135143	2200103B_85.d	Sample	1/4/2020 6:57	673520	1
MeOH shot	2200103B_86.d	MeOH Shot	1/4/2020 7:09		1
22001020204	2200103B_87.d	Sample	1/4/2020 7:19	674594 LOD	1
22001020205	2200103B_88.d	Sample	1/4/2020 7:31	674594 LOD	1
22001020206	2200103B_89.d	Sample	1/4/2020 7:42	674594 LOQ	1
22001020207	2200103B_90.d	Sample	1/4/2020 7:53	674657 DW LOD	1
22001020208	2200103B_91.d	Sample	1/4/2020 8:05	674657 DW LOD	1
22001020209	2200103B_92.d	Sample	1/4/2020 8:16	674657 DW LOQ	1
21912189401	2200103B_93.d	Sample	1/4/2020 8:27	674085	1

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/03/2020 17:00	Lab File ID:	2200103B_11.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674727

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomer sulfonate	ng/L	50000	59300	119	70	130	
8:2 Fluorotelomer sulfonate	ng/L	50000	59400	119	70	130	
NEtFOSAA	ng/L	50000	49100	98	70	130	
NMeFOSAA	ng/L	50000	44000	88	70	130	
Perfluorobutanoic acid	ng/L	50000	52000	104	70	130	
Perfluorobutanesulfonic acid	ng/L	50000	51200	102	70	130	
Perfluorodecanoic acid	ng/L	50000	56300	113	70	130	
Perfluorododecanoic acid	ng/L	50000	51600	103	70	130	
Perfluoroheptanoic acid	ng/L	50000	49300	99	70	130	
Perfluorohexanoic acid	ng/L	50000	55800	112	70	130	
Perfluorohexanesulfonic acid	ng/L	50000	55100	110	70	130	
Perfluorononanoic acid	ng/L	50000	54000	108	70	130	
Perfluorooctanoic acid	ng/L	50000	51900	104	70	130	
Perfluorooctane Sulfonate	ng/L	50000	47900	96	70	130	
Perfluoropentanoic acid	ng/L	50000	51900	104	70	130	
Perfluorotetradecanoic acid	ng/L	50000	58800	118	70	130	
Perfluorotridecanoic acid	ng/L	50000	51400	103	70	130	
Perfluoroundecanoic acid	ng/L	50000	50500	101	70	130	

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/03/2020 17:11	Lab File ID:	2200103B_12.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674727

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomer sulfonate	ng/L	7.93	7.80	98	70	130	
8:2 Fluorotelomer sulfonate	ng/L	8.00	8.73	109	70	130	
NEtFOSAA	ng/L	8.33	7.87	95	70	130	
NMeFOSAA	ng/L	8.33	9.33	112	70	130	
Perfluorobutanoic acid	ng/L	8.33	8.93	107	70	130	
Perfluorobutanesulfonic acid	ng/L	7.40	6.65	90	70	130	
Perfluorodecanoic acid	ng/L	8.33	8.13	98	70	130	
Perfluorododecanoic acid	ng/L	8.33	8.20	98	70	130	
Perfluoroheptanoic acid	ng/L	8.33	7.33	88	70	130	
Perfluorohexanoic acid	ng/L	8.33	7.87	95	70	130	
Perfluorohexanesulfonic acid	ng/L	7.60	7.20	95	70	130	
Perfluorononanoic acid	ng/L	8.33	6.73	81	70	130	
Perfluorooctanoic acid	ng/L	8.33	7.13	86	70	130	
Perfluorooctane Sulfonate	ng/L	7.73	7.20	94	70	130	
Perfluoropentanoic acid	ng/L	8.33	10.0	120	70	130	
Perfluorotetradecanoic acid	ng/L	8.33	7.93	95	70	130	
Perfluorotridecanoic acid	ng/L	8.33	7.87	94	70	130	
Perfluoroundecanoic acid	ng/L	8.33	5.95	71	70	130	

FORM 7S - ORG

4I

ORGANICS INSTRUMENT BLANK

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/03/2020 17:23	Lab File ID:	2200103B_13.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674727

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
6:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.79	4.00	10.0	
8:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.63	4.00	10.0	
NEtFOSAA	ng/L	8.00	U	5.38	8.00	10.0	
NMeFOSAA	ng/L	8.00	U	4.60	8.00	10.0	
Perfluorobutanesulfonic acid	ng/L	4.00	U	1.47	4.00	10.0	
Perfluorobutanoic acid	ng/L	4.00	U	2.13	4.00	10.0	
Perfluorodecanoic acid	ng/L	4.00	U	1.65	4.00	10.0	
Perfluorododecanoic acid	ng/L	4.00	U	2.45	4.00	10.0	
Perfluoroheptanoic acid	ng/L	4.00	U	1.85	4.00	10.0	
Perfluorohexanesulfonic acid	ng/L	4.00	U	1.64	4.00	10.0	
Perfluorohexanoic acid	ng/L	4.00	U	1.94	4.00	10.0	
Perfluorononanoic acid	ng/L	4.00	U	1.68	4.00	10.0	
Perfluorooctane Sulfonate	ng/L	4.00	U	1.70	4.00	10.0	
Perfluorooctanoic acid	ng/L	4.00	U	1.80	4.00	10.0	
Perfluoropentanoic acid	ng/L	4.00	U	2.35	4.00	10.0	
Perfluorotetradecanoic acid	ng/L	4.00	U	2.76	4.00	10.0	
Perfluorotridecanoic acid	ng/L	4.00	U	2.56	4.00	10.0	
Perfluoroundecanoic acid	ng/L	4.00	U	1.86	4.00	10.0	

* - Result greater than 1/2 LOQ

FORM 4I - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/02/2020 18:34	Lab File ID:	2200102A_41.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674518

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomer sulfonate	ng/L	47500	50700	107	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	43100	90	70	130	
NEtFOSAA	ng/L	50000	56900	114	70	130	
NMeFOSAA	ng/L	50000	64000	128	70	130	
Perfluorobutanoic acid	ng/L	50000	48400	97	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	44000	100	70	130	
Perfluorodecanoic acid	ng/L	50000	49800	100	70	130	
Perfluorododecanoic acid	ng/L	50000	51400	103	70	130	
Perfluoroheptanoic acid	ng/L	50000	50900	102	70	130	
Perfluorohexanoic acid	ng/L	50000	47600	95	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	54100	119	70	130	
Perfluorononanoic acid	ng/L	50000	50600	101	70	130	
Perfluorooctanoic acid	ng/L	50000	47900	96	70	130	
Perfluorooctane Sulfonate	ng/L	46300	49200	106	70	130	
Perfluoropentanoic acid	ng/L	50000	46300	93	70	130	
Perfluorotetradecanoic acid	ng/L	50000	51500	103	70	130	
Perfluorotridecanoic acid	ng/L	50000	53300	107	70	130	
Perfluoroundecanoic acid	ng/L	50000	50100	100	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/02/2020 21:23	Lab File ID:	2200102A_56.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674518

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomer sulfonate	ng/L	47500	48100	101	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	46100	96	70	130	
NEtFOSAA	ng/L	50000	52900	106	70	130	
NMeFOSAA	ng/L	50000	57000	114	70	130	
Perfluorobutanoic acid	ng/L	50000	48700	97	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	42100	95	70	130	
Perfluorodecanoic acid	ng/L	50000	54600	109	70	130	
Perfluorododecanoic acid	ng/L	50000	49700	99	70	130	
Perfluoroheptanoic acid	ng/L	50000	50100	100	70	130	
Perfluorohexanoic acid	ng/L	50000	47600	95	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	44400	97	70	130	
Perfluorononanoic acid	ng/L	50000	49900	100	70	130	
Perfluorooctanoic acid	ng/L	50000	51200	102	70	130	
Perfluorooctane Sulfonate	ng/L	46300	51500	111	70	130	
Perfluoropentanoic acid	ng/L	50000	45800	92	70	130	
Perfluorotetradecanoic acid	ng/L	50000	54200	108	70	130	
Perfluorotridecanoic acid	ng/L	50000	54600	109	70	130	
Perfluoroundecanoic acid	ng/L	50000	47200	94	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/04/2020 01:29	Lab File ID:	2200103B_56.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674727

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomer sulfonate	ng/L	47500	51700	109	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	54100	113	70	130	
NEtFOSAA	ng/L	50000	52100	104	70	130	
NMeFOSAA	ng/L	50000	57800	116	70	130	
Perfluorobutanoic acid	ng/L	50000	48300	97	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	44700	101	70	130	
Perfluorodecanoic acid	ng/L	50000	55100	110	70	130	
Perfluorododecanoic acid	ng/L	50000	47600	95	70	130	
Perfluoroheptanoic acid	ng/L	50000	48300	97	70	130	
Perfluorohexanoic acid	ng/L	50000	50600	101	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	47200	103	70	130	
Perfluorononanoic acid	ng/L	50000	47800	96	70	130	
Perfluorooctanoic acid	ng/L	50000	49700	99	70	130	
Perfluorooctane Sulfonate	ng/L	46300	55400	120	70	130	
Perfluoropentanoic acid	ng/L	50000	43300	87	70	130	
Perfluorotetradecanoic acid	ng/L	50000	51800	104	70	130	
Perfluorotridecanoic acid	ng/L	50000	51400	103	70	130	
Perfluoroundecanoic acid	ng/L	50000	48800	98	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/04/2020 04:30	Lab File ID:	2200103B_72.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674727

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomer sulfonate	ng/L	47500	50500	106	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	50700	106	70	130	
NEtFOSAA	ng/L	50000	50300	101	70	130	
NMeFOSAA	ng/L	50000	55500	111	70	130	
Perfluorobutanoic acid	ng/L	50000	48600	97	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	43300	98	70	130	
Perfluorodecanoic acid	ng/L	50000	52600	105	70	130	
Perfluorododecanoic acid	ng/L	50000	49400	99	70	130	
Perfluoroheptanoic acid	ng/L	50000	48500	97	70	130	
Perfluorohexanoic acid	ng/L	50000	50800	102	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	47900	105	70	130	
Perfluorononanoic acid	ng/L	50000	48100	96	70	130	
Perfluorooctanoic acid	ng/L	50000	50600	101	70	130	
Perfluorooctane Sulfonate	ng/L	46300	49800	108	70	130	
Perfluoropentanoic acid	ng/L	50000	45000	90	70	130	
Perfluorotetradecanoic acid	ng/L	50000	50200	100	70	130	
Perfluorotridecanoic acid	ng/L	50000	52800	106	70	130	
Perfluoroundecanoic acid	ng/L	50000	47700	95	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/04/2020 06:35	Lab File ID:	2200103B_83.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674727

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomer sulfonate	ng/L	47500	48600	102	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	50400	105	70	130	
NEtFOSAA	ng/L	50000	55100	110	70	130	
NMeFOSAA	ng/L	50000	56200	112	70	130	
Perfluorobutanoic acid	ng/L	50000	48400	97	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	44100	100	70	130	
Perfluorodecanoic acid	ng/L	50000	56900	114	70	130	
Perfluorododecanoic acid	ng/L	50000	53800	108	70	130	
Perfluoroheptanoic acid	ng/L	50000	47000	94	70	130	
Perfluorohexanoic acid	ng/L	50000	47900	96	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	47200	103	70	130	
Perfluorononanoic acid	ng/L	50000	47200	94	70	130	
Perfluorooctanoic acid	ng/L	50000	48400	97	70	130	
Perfluorooctane Sulfonate	ng/L	46300	49500	107	70	130	
Perfluoropentanoic acid	ng/L	50000	43900	88	70	130	
Perfluorotetradecanoic acid	ng/L	50000	50300	101	70	130	
Perfluorotridecanoic acid	ng/L	50000	52600	105	70	130	
Perfluoroundecanoic acid	ng/L	50000	46700	93	70	130	

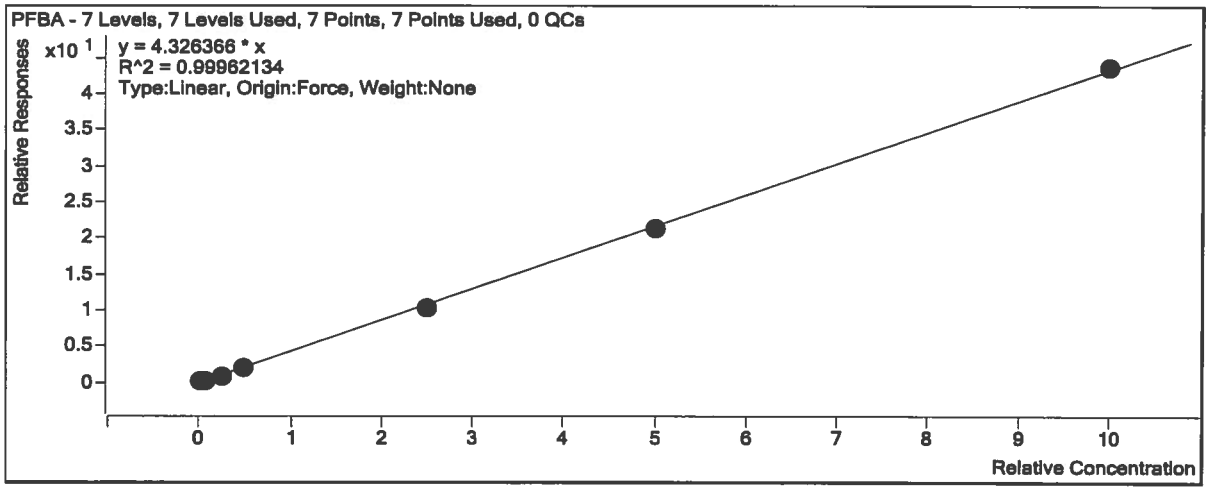
Quantitative Analysis Calibration Report

Batch Data Path	D:\MassHunter\Data\2200103BCAL\QuantResults\2200103B.batch.bin		
Analysis Time	1/8/2020 11:09 AM	**Analyst Name**	GCAL\bmh
Report Time	1/8/2020 11:10 AM	**Reporter Name**	GCAL\lcms
Last Calib Update	1/3/2020 4:43 PM	**Batch State**	Processed

Calibration Info

Target Compound ***PFBA***

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	2017	0.5000	4.5568
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	4843	1.2500	4.1547
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	17146	5.0000	3.7933
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	33684	10.0000	3.8843
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	182739	50.0000	4.1226
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	368094	100.0000	4.2469
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	717847	200.0000	4.3604



Extracted ISTD ***MPFBA***

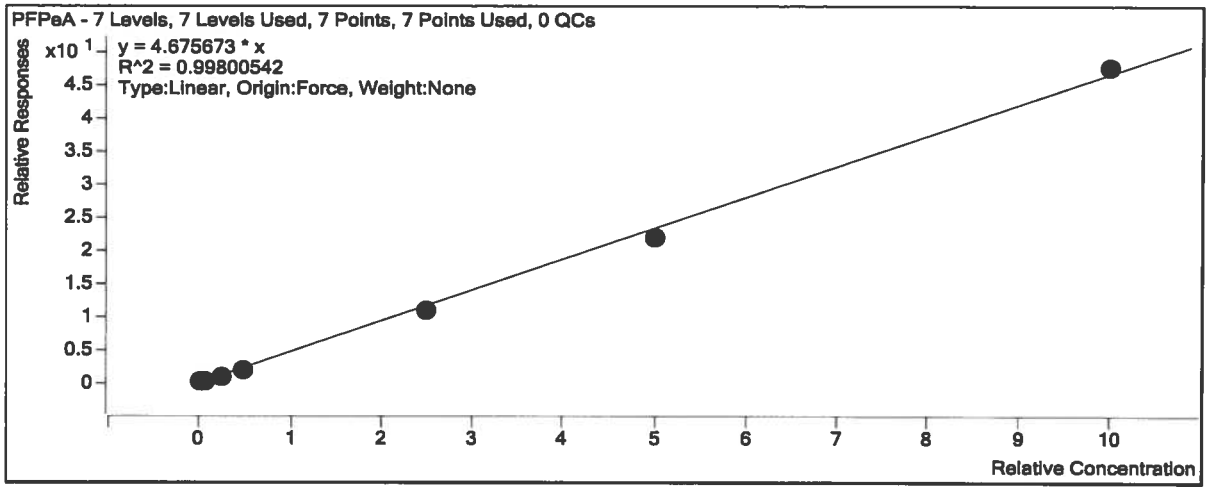
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	17707	20.0000	885.3308
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	18652	20.0000	932.6187
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	18080	20.0000	904.0127
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	17343	20.0000	867.1746
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	17731	20.0000	886.5276
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	17335	20.0000	866.7359
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	16463	20.0000	823.1408

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	15388	20.0000	769.3873
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	15229	20.0000	761.4597
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	15894	20.0000	794.7239
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	15078	20.0000	753.8906

Target Compound *PFPeA*

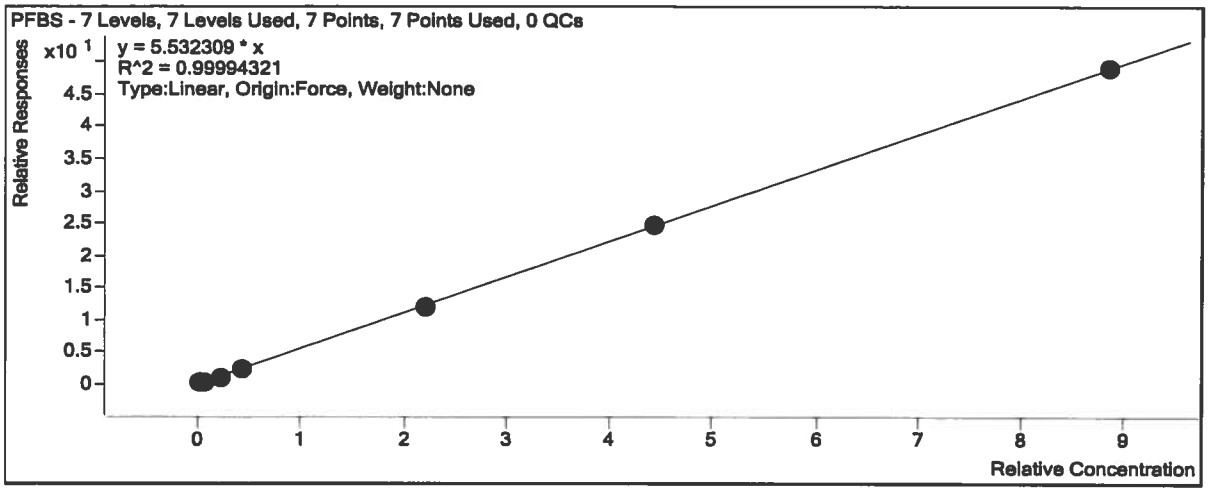
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	2036	0.5000	5.2786
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	3804	1.2500	3.6193
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	15867	5.0000	3.8724
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	31542	10.0000	4.0996
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	168764	50.0000	4.4326
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	347194	100.0000	4.3687
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	719148	200.0000	4.7696



Target Compound *PFBS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	1671	0.4425	4.2044
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	4790	1.1100	4.6588
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	19728	4.4250	4.9277
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	38111	8.8500	5.1504

D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	214283	44.2500	5.4216
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	437561	88.5000	5.5437
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	853669	177.0000	5.5377



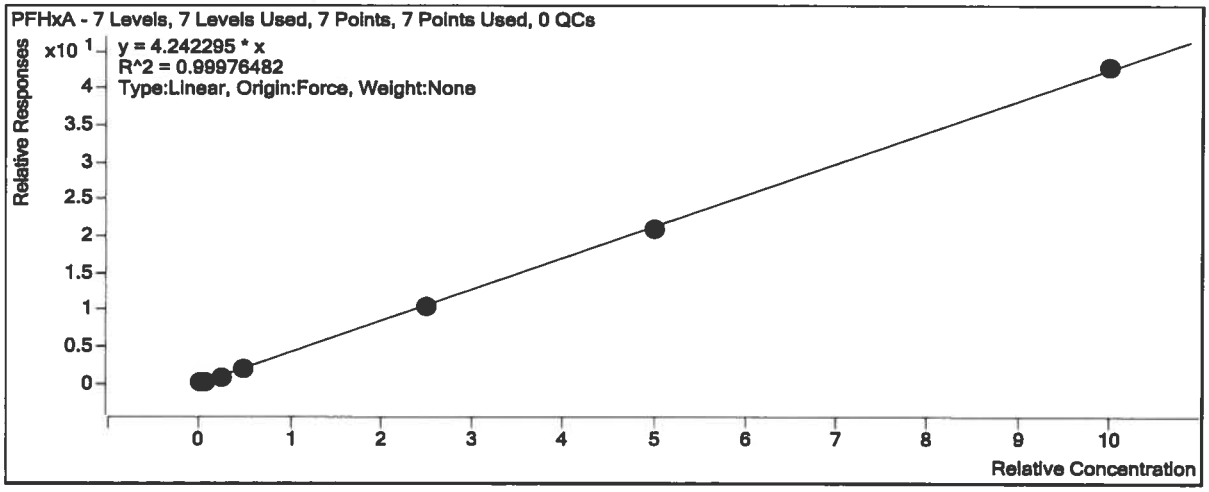
Extracted ISTD ***M3PFBS***

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	17962	20.0000	898.0863
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	18526	20.0000	926.2970
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	18095	20.0000	904.7444
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	16722	20.0000	836.1215
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	17864	20.0000	893.1885
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	17837	20.0000	891.8495
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	17419	20.0000	870.9308

Target Compound ***4:2 FTS***

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	2497	0.4675	8.1494
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	7226	1.1700	9.6300
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	31248	4.6700	10.2658
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	60043	9.3500	10.7072
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	322046	46.7500	11.4971
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	630211	93.5000	10.7537
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	1132075	187.0000	10.6786

Quantitative Analysis Calibration Report



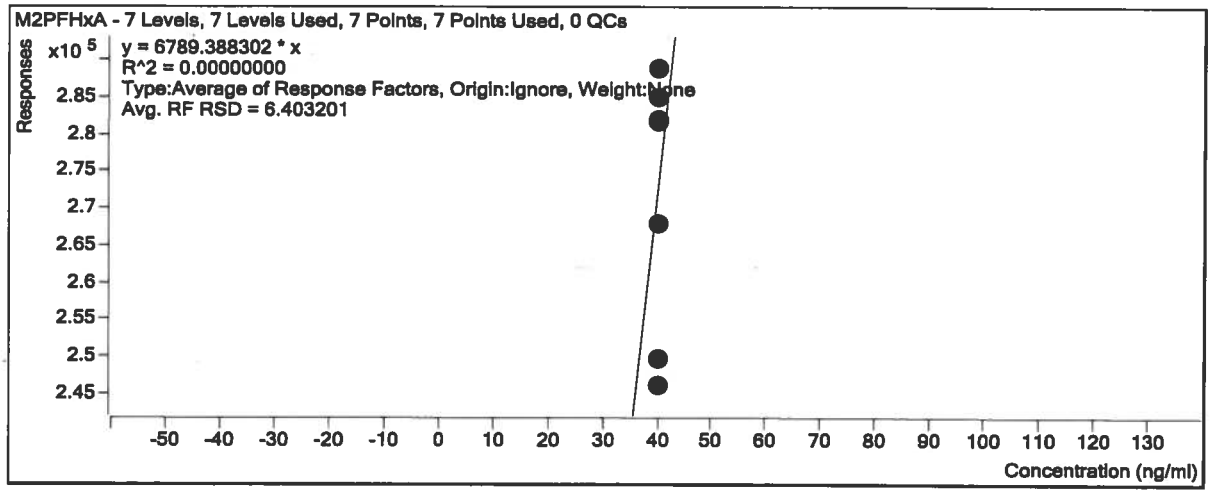
Extracted ISTD *M5PFHxA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	30419	20.0000	1520.9279
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	33057	20.0000	1652.8529
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	31974	20.0000	1598.6801
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	30130	20.0000	1506.4910
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	32223	20.0000	1611.1456
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	32646	20.0000	1632.3183
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	31018	20.0000	1550.9140

Instrument ISTD *M2PFHxA*

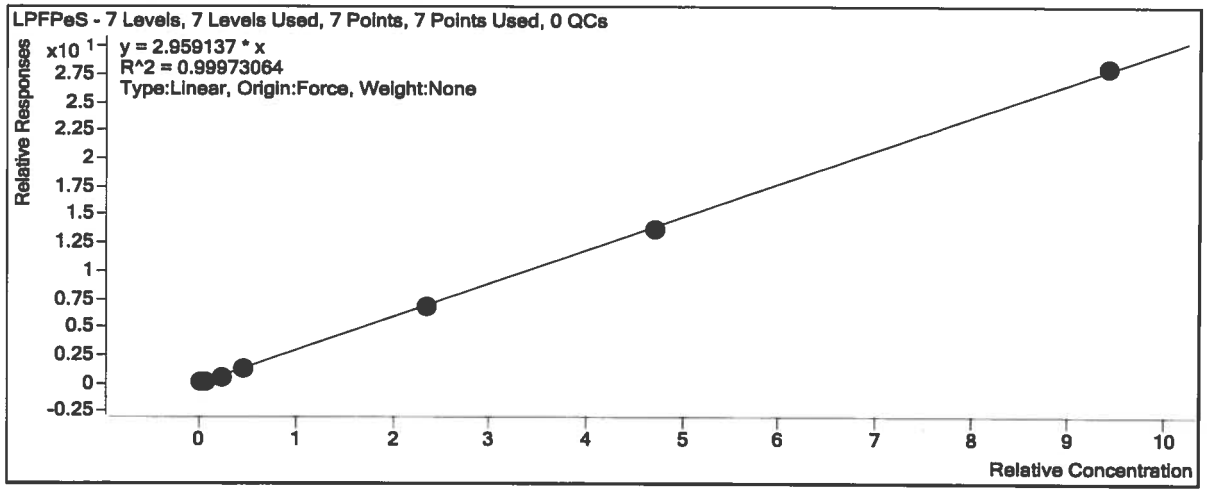
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	249730	40.0000	6243.2395
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	281655	40.0000	7041.3737
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	246212	40.0000	6155.3058
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	288755	40.0000	7218.8708
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	284858	40.0000	7121.4606
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	281925	40.0000	7048.1301
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	267894	40.0000	6697.3376

Quantitative Analysis Calibration Report



Target Compound *LPFPeS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	1683	0.4700	2.3540
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	4772	1.1800	2.4467
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	19952	4.7000	2.6554
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	39239	9.4000	2.7709
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	217072	47.0000	2.8666
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	445073	94.0000	2.9007
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	868948	188.0000	2.9802

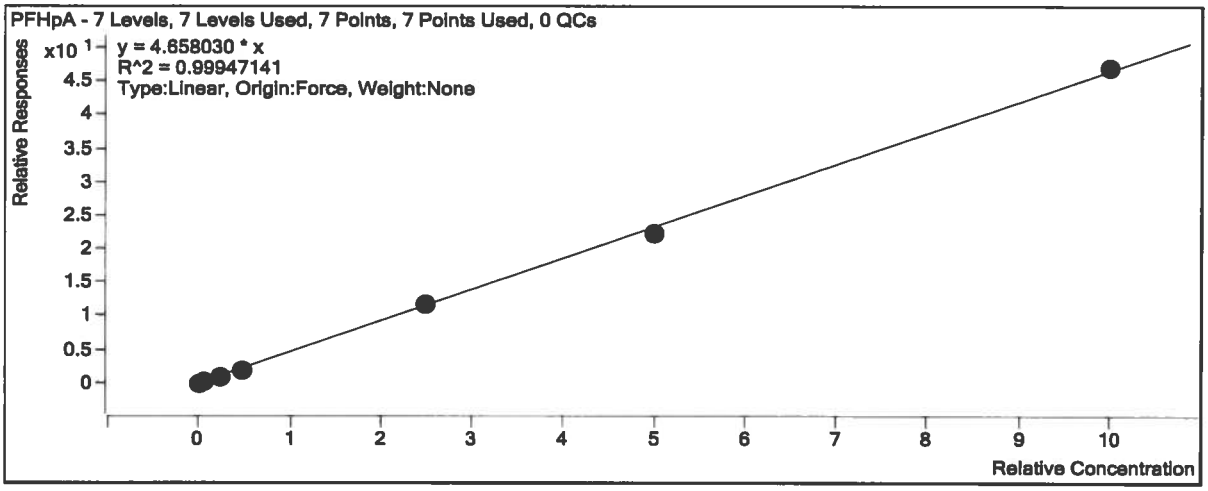


Target Compound *HFPO-DA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

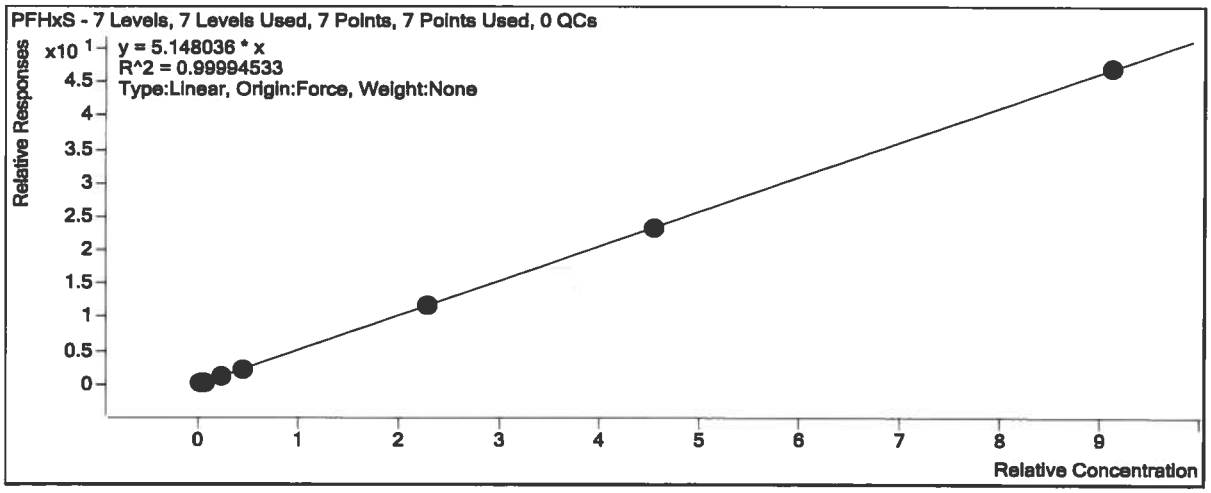
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	64856	10.0000	4.0829
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	365028	50.0000	4.7025
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	731976	100.0000	4.4914
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	1424135	200.0000	4.6986



Target Compound *PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	1833	0.4560	4.1817
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	5644	1.1400	4.7905
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	21984	4.5600	4.7720
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	42776	9.1200	4.8406
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	238823	45.6000	5.2287
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	480173	91.2000	5.1065
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	943121	182.4000	5.1544

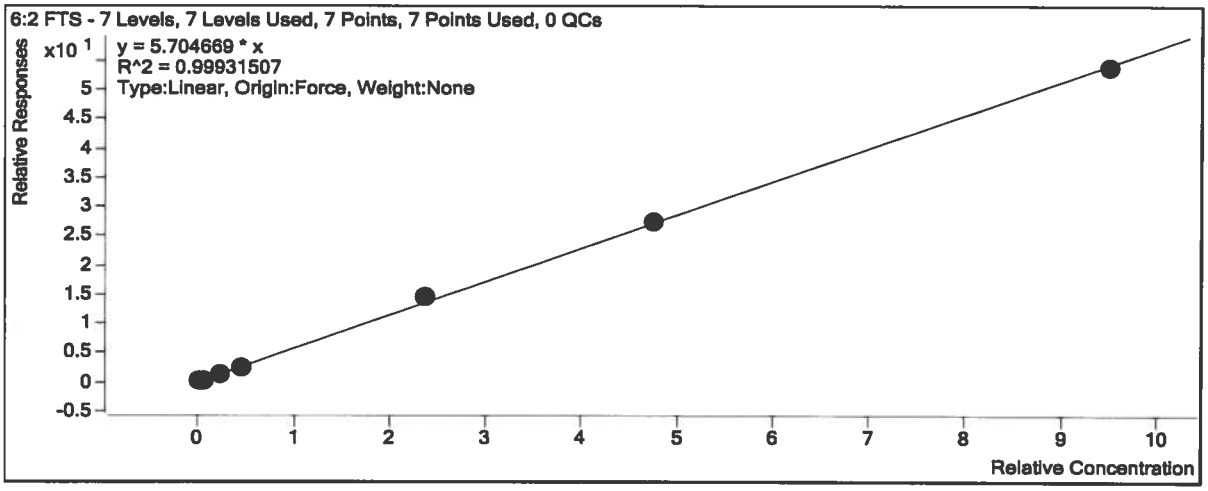
Quantitative Analysis Calibration Report



Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
Target Compound	*6:2 FTS*					

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	2444	0.4750	5.1441
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	7021	1.1900	5.7417
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	29521	4.7500	6.3595
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	54945	9.5000	5.6481
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	305159	47.5000	6.2009
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	584583	95.0000	5.7583
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	1075300	190.0000	5.6600

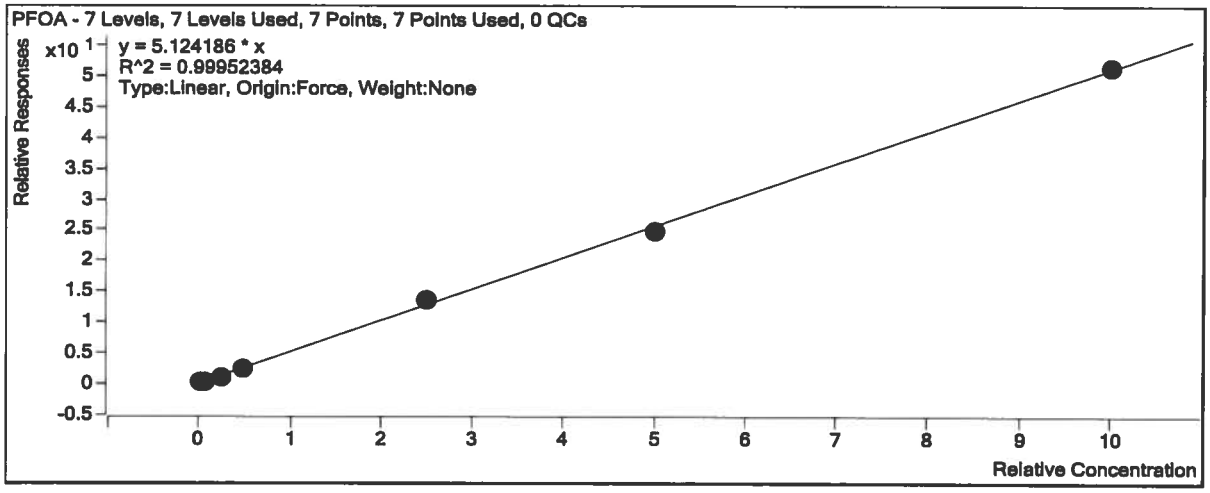


Extracted ISTD *M8PFOA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	22440	20.0000	1121.9777
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	23483	20.0000	1174.1350
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	22426	20.0000	1121.2772
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	20813	20.0000	1040.6645
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	20828	20.0000	1041.4124
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	22779	20.0000	1138.9398
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	21029	20.0000	1051.4482

Instrument ISTD *M2PFOA*

Quantitative Analysis Calibration Report

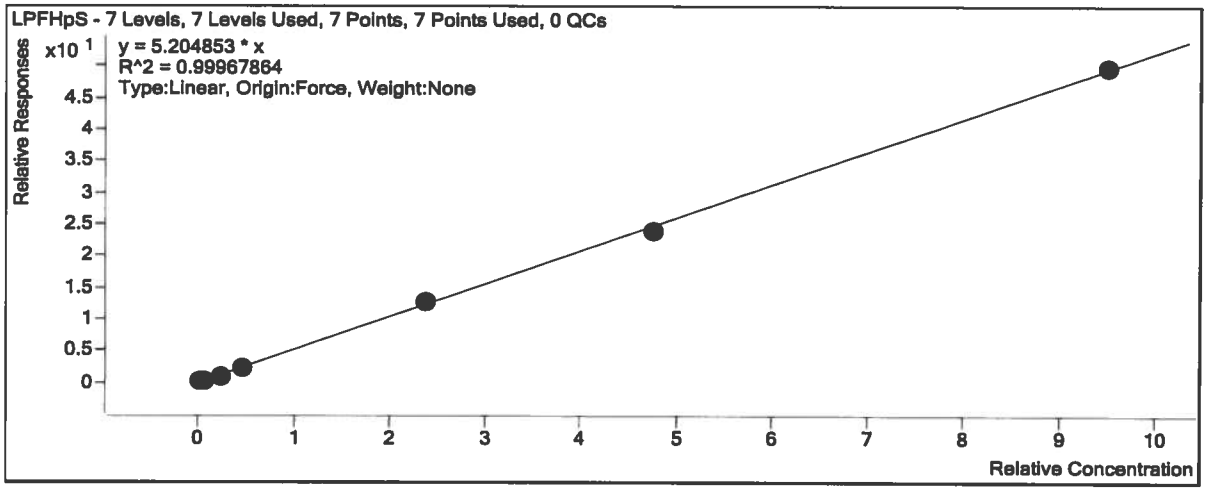


Target Compound *LPFHpS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	2125	0.4750	3.9865

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	5594	1.1900	4.0038
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	24886	4.7500	4.6725
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	47834	9.5000	4.8384
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	266626	47.5000	5.3900
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	549284	95.0000	5.0766
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	1044155	190.0000	5.2267



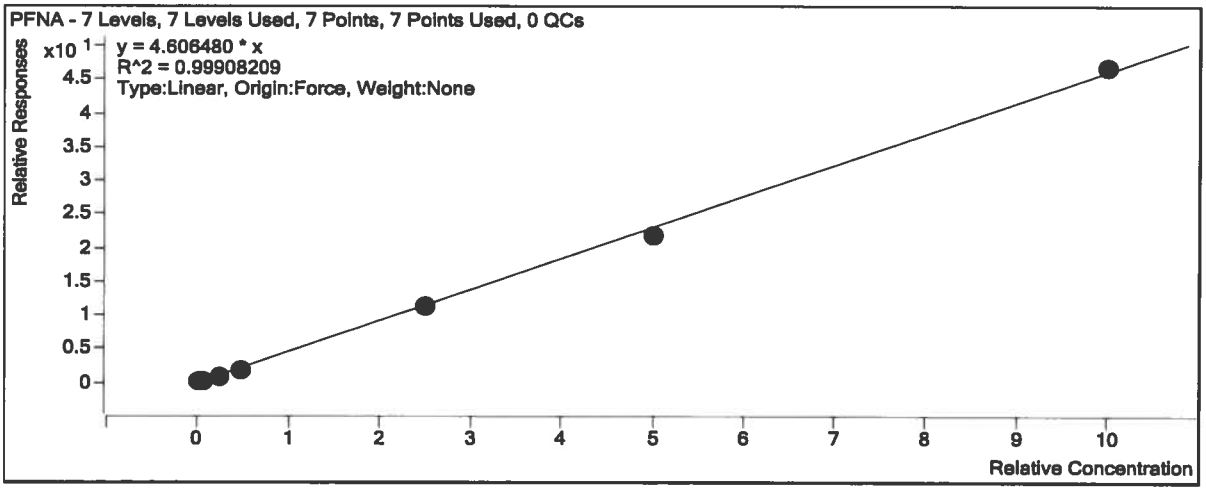
Extracted ISTD *M9PFNA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	26195	20.0000	1309.7505
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	28601	20.0000	1430.0642
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	27852	20.0000	1392.5877
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	26589	20.0000	1329.4272
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	26352	20.0000	1317.5752
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	26805	20.0000	1340.2260
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	24454	20.0000	1222.7016

Target Compound *PFNA*

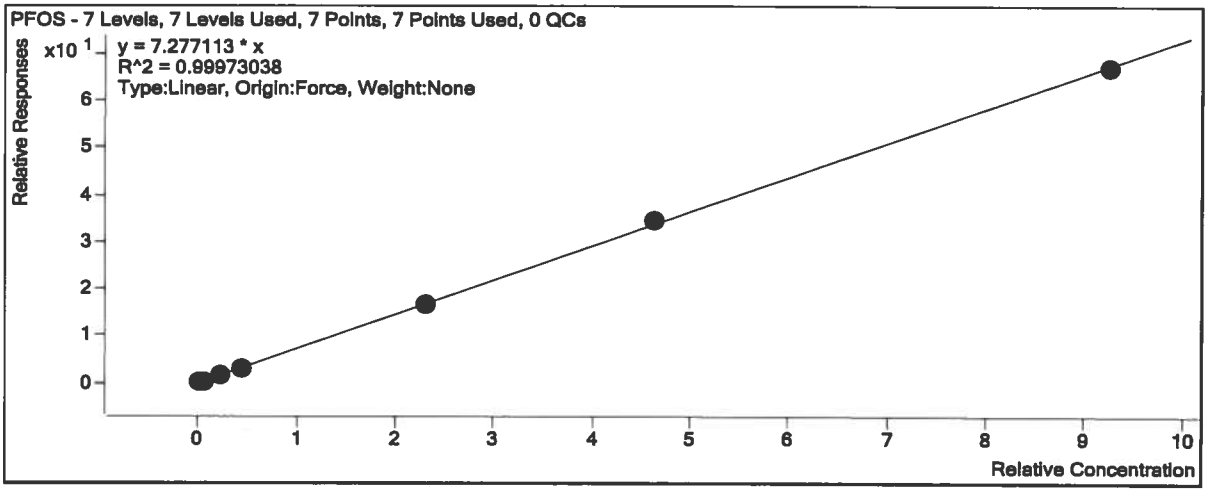
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	2258	0.5000	3.4475
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	6297	1.2500	3.5228

D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	28455	5.0000	4.0866
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	51232	10.0000	3.8537
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	298941	50.0000	4.5377
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	589119	100.0000	4.3957
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	1140961	200.0000	4.6657



Target Compound *PFOS*

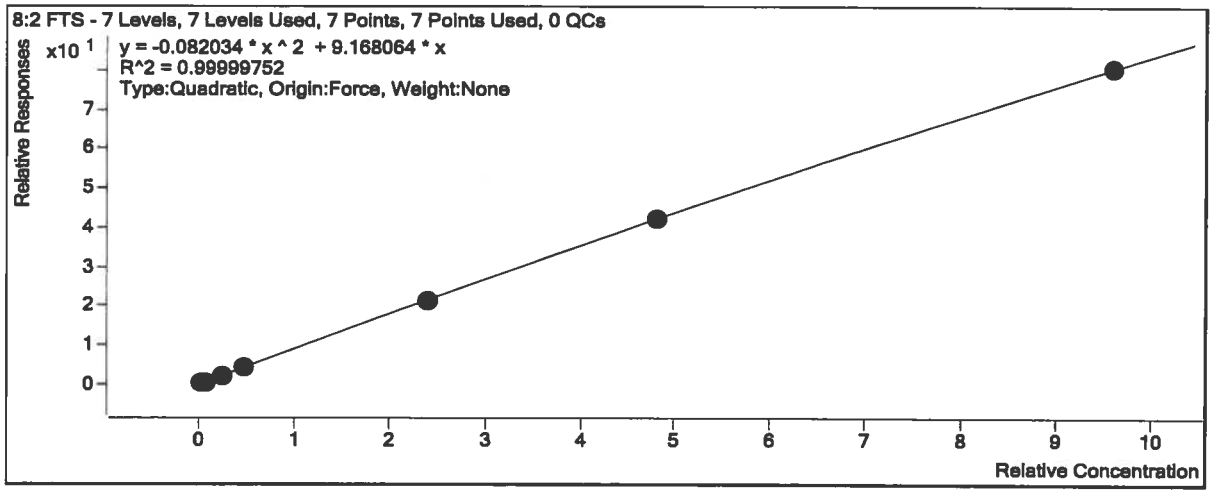
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	2240	0.4628	6.7379
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	5673	1.1600	6.1914
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	25474	4.6280	6.8807
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	48669	9.2550	6.8590
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	267541	46.2800	7.2892
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	546167	92.5500	7.4679
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	1079532	185.1000	7.2300



Extracted ISTD *M8PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	14370	20.0000	718.4846
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	15798	20.0000	789.9130
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	15999	20.0000	799.9455
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	15334	20.0000	766.6868
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	15862	20.0000	793.0781
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	15804	20.0000	790.2212

Quantitative Analysis Calibration Report



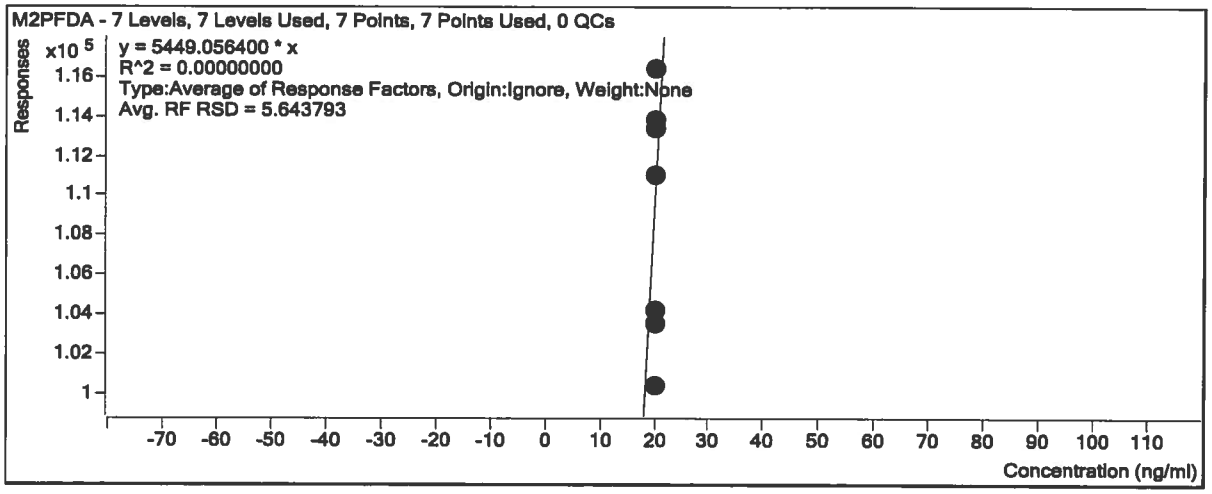
Extracted ISTD *M6PFDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	24008	20.0000	1200.4062
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	23537	20.0000	1176.8298
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	25547	20.0000	1277.3720
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	23803	20.0000	1190.1366
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	24369	20.0000	1218.4480
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	23265	20.0000	1163.2612
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	21964	20.0000	1098.2132

Instrument ISTD *M2PFDA*

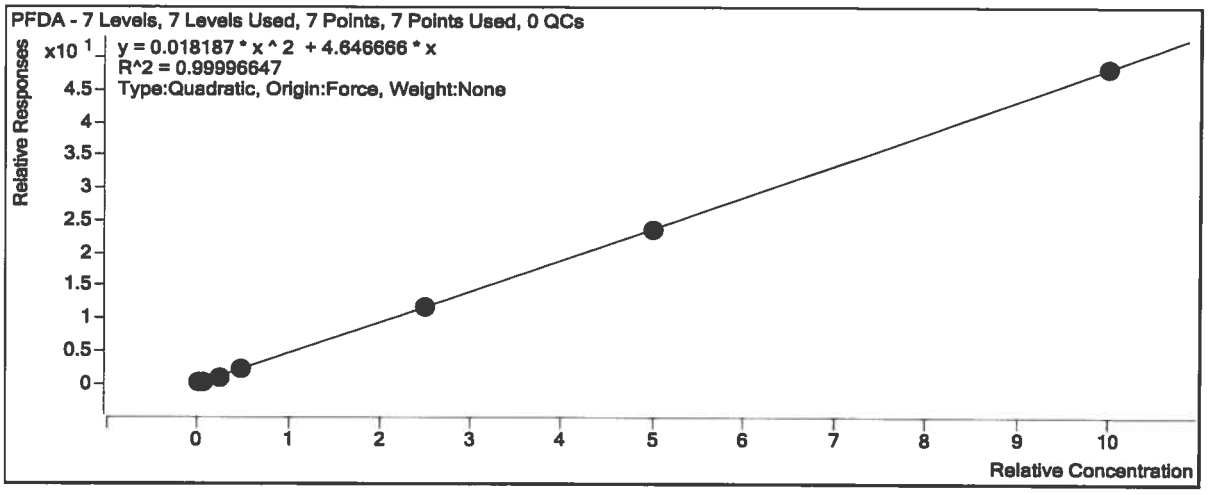
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	100466	20.0000	5023.2954
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	113869	20.0000	5693.4578
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	104206	20.0000	5210.3109
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	116390	20.0000	5819.4761
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	111028	20.0000	5551.4059
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	113361	20.0000	5668.0651
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	103548	20.0000	5177.3836

Quantitative Analysis Calibration Report



Target Compound *PFDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	2410	0.5000	4.0151
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	6495	1.2500	4.4155
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	26266	5.0000	4.1124
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	50428	10.0000	4.2372
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	285875	50.0000	4.6924
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	552336	100.0000	4.7482
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	1060275	200.0000	4.8273

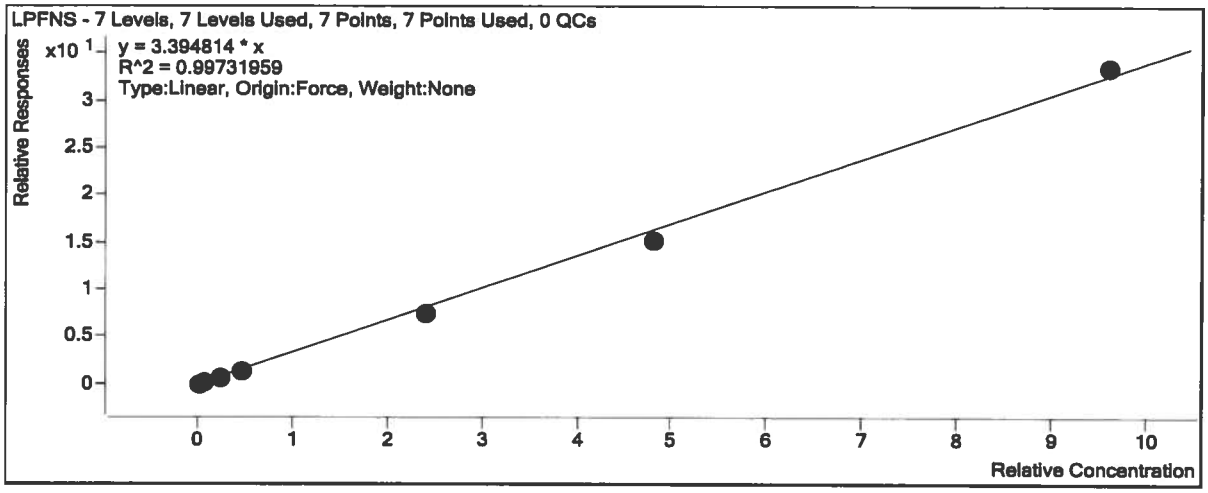


Target Compound *LPFNS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	815598	192.0000	3.4742



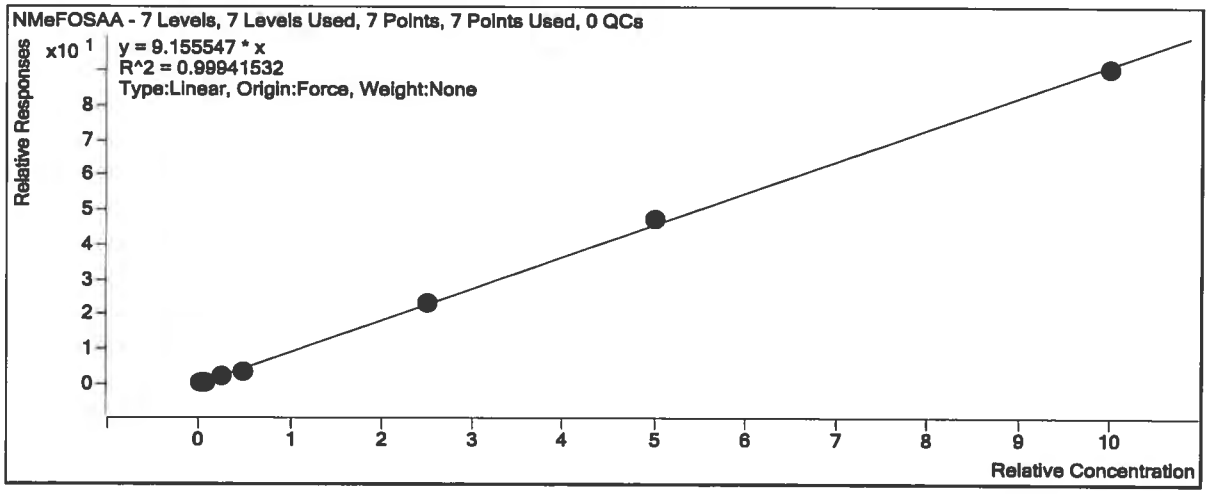
Extracted ISTD *d3-NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	3803	20.0000	190.1703
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	3742	20.0000	187.1014
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	2982	20.0000	149.1221
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	3930	20.0000	196.4795
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	3840	20.0000	192.0182
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	3895	20.0000	194.7652
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	4126	20.0000	206.2799

Target Compound *NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	667	0.5000	7.0192
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	1647	1.2500	7.0440
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	7914	5.0000	10.6147
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	15277	10.0000	7.7754
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	89379	50.0000	9.3095
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	184536	100.0000	9.4748
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	374140	200.0000	9.0687

Quantitative Analysis Calibration Report



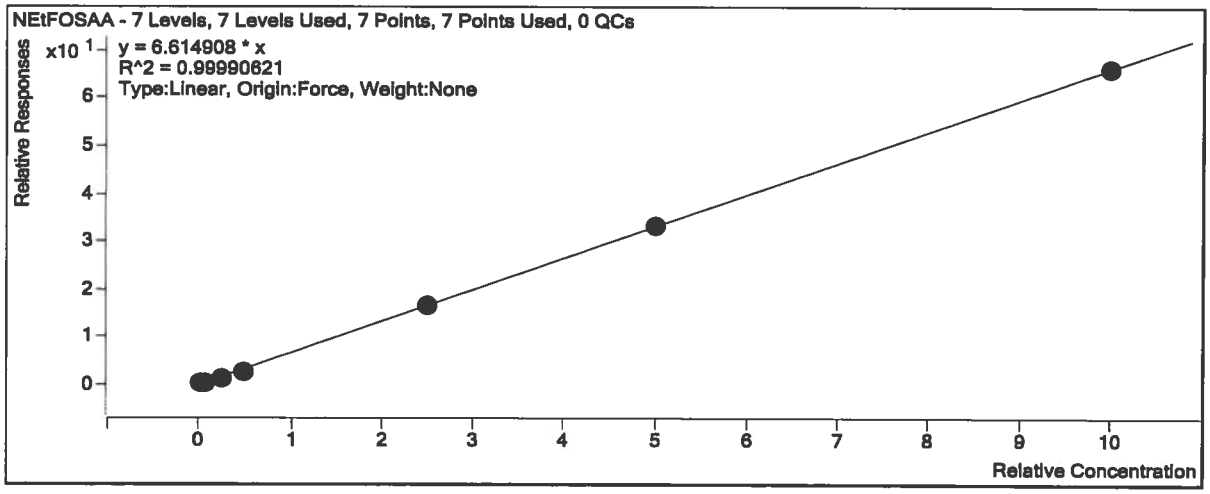
Extracted ISTD *M8FOSA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	20255	20.0000	1012.7726
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	20338	20.0000	1016.9000
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	16102	20.0000	805.0934
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	18616	20.0000	930.8072
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	19710	20.0000	985.5181
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	20521	20.0000	1026.0373
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	19831	20.0000	991.5448

Target Compound *FOSA-I*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	1764	0.5000	3.4845
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	4976	1.2500	3.9147
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	16386	5.0000	4.0706
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	40079	10.0000	4.3058
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	235770	50.0000	4.7847
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	477487	100.0000	4.6537
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	943315	200.0000	4.7568

Quantitative Analysis Calibration Report



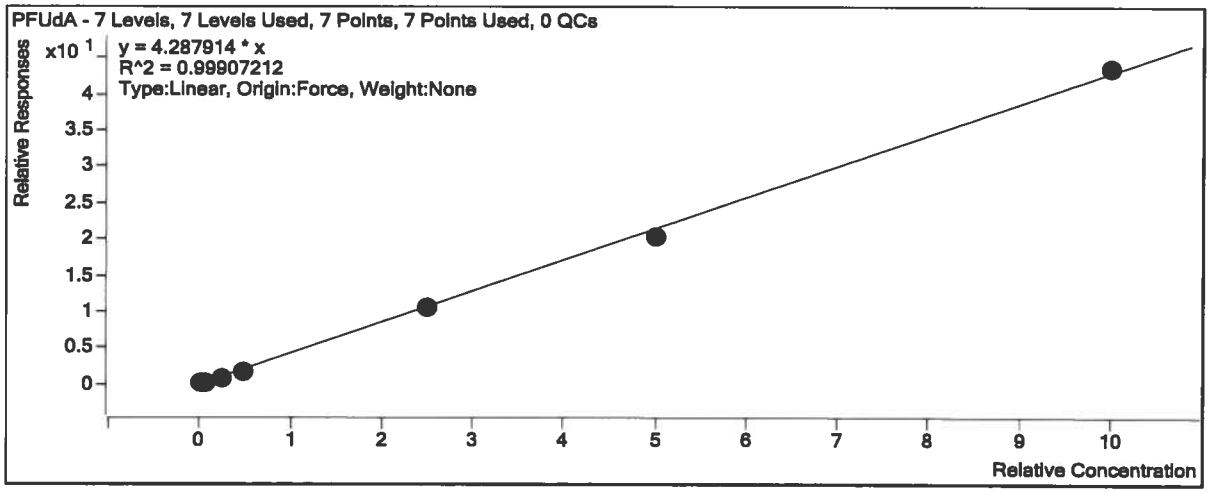
Extracted ISTD *M7PFUdA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	23542	20.0000	1177.0762
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	24864	20.0000	1243.1961
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	23720	20.0000	1186.0144
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	22490	20.0000	1124.4904
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	24038	20.0000	1201.8810
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	23593	20.0000	1179.6270
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	21797	20.0000	1089.8312

Target Compound *PFUdA*

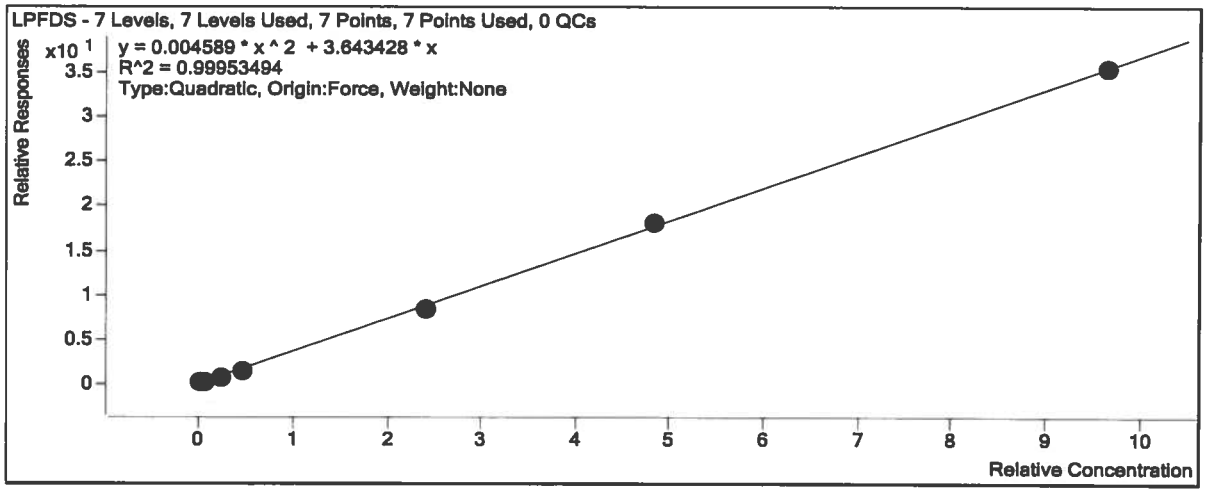
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	2288	0.5000	3.8869
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	5121	1.2500	3.2953
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	22384	5.0000	3.7747
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	42561	10.0000	3.7849
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	251336	50.0000	4.1824
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	482613	100.0000	4.0912
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	947128	200.0000	4.3453

Quantitative Analysis Calibration Report



Target Compound *LPFDS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	1500	0.4825	2.5902
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	4399	1.2100	3.0891
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	18671	4.8250	3.0294
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	35291	9.6500	3.0729
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	203499	48.2500	3.4614
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	421188	96.5000	3.7521
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	779994	193.0000	3.6800

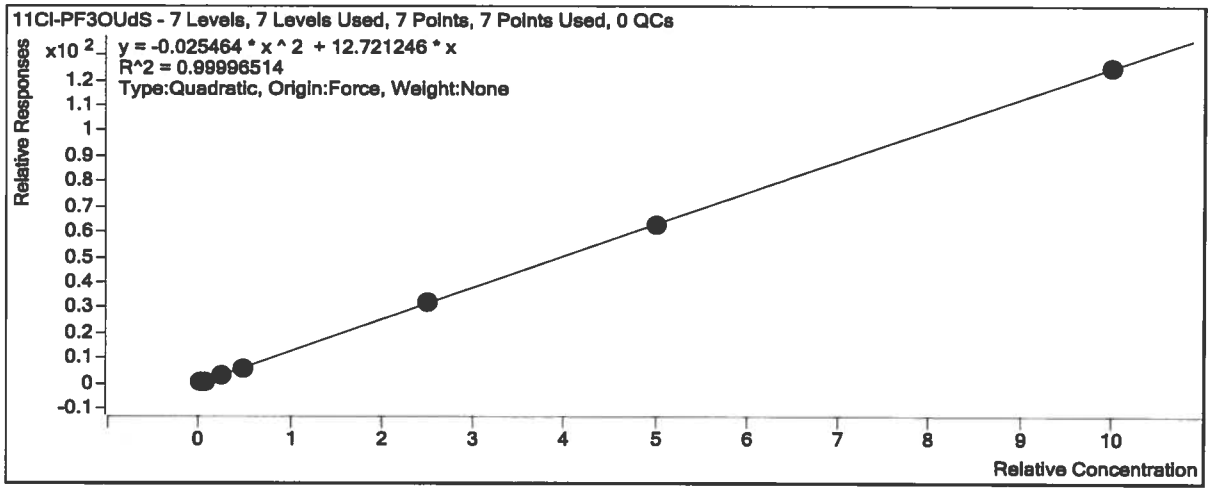


Target Compound *11Cl-PF3OUdS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

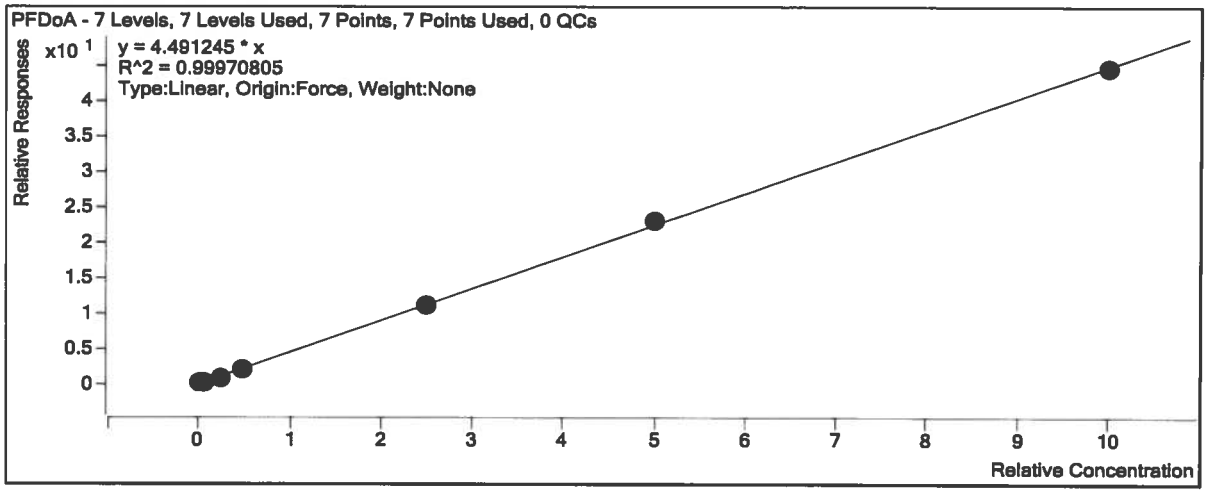
Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	2011129	200.0000	12.4658



Target Compound ***PFDoA***

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	1670	0.5000	3.6794
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	4566	1.2500	4.0652
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	17590	5.0000	4.0524
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	37229	10.0000	4.3340
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	206124	50.0000	4.4321
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	419329	100.0000	4.6147
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	791350	200.0000	4.4648

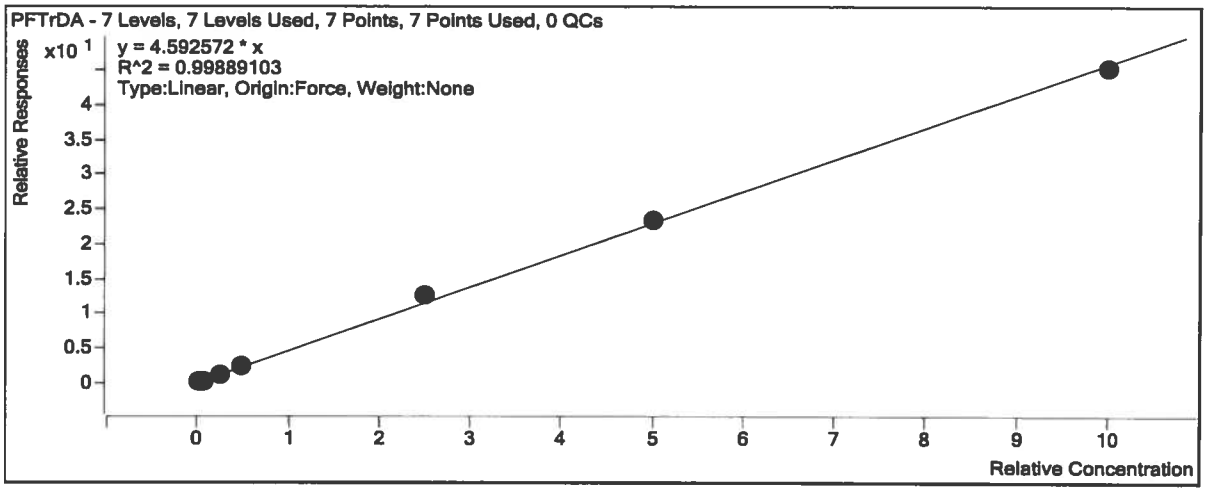


Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	17180	20.0000	859.0060
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	18603	20.0000	930.1346
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	18174	20.0000	908.6834
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	17724	20.0000	886.2160

Target Compound *PFTrDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	1286	0.5000	4.2373
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	3151	1.2500	3.9442
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	14029	5.0000	4.2699
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	27546	10.0000	4.6260
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	158366	50.0000	5.0255
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	312317	100.0000	4.7197
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	610042	200.0000	4.5339



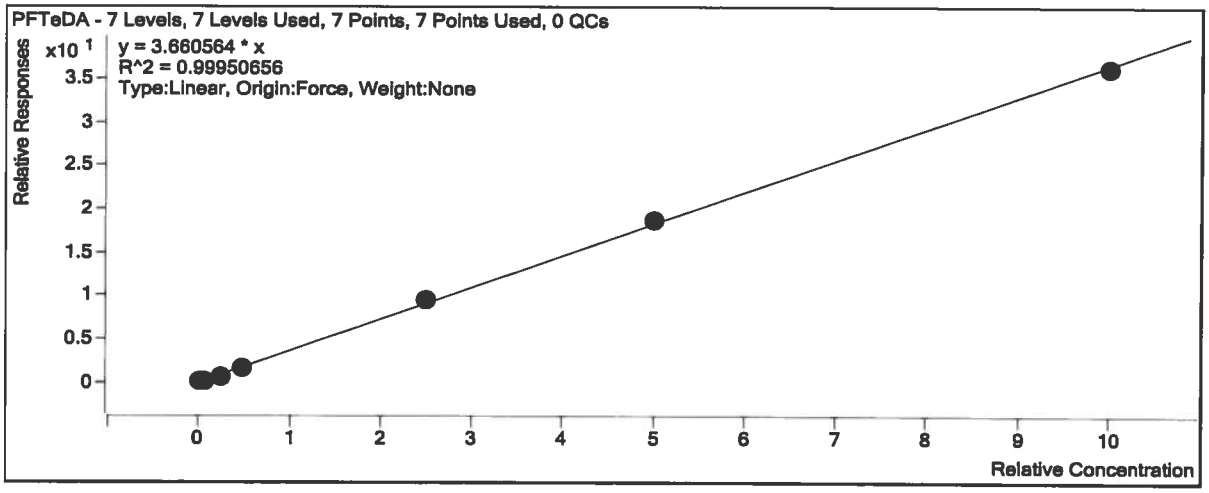
Extracted ISTD *M2PFTeDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	12138	20.0000	606.9104
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	12782	20.0000	639.1196
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	13142	20.0000	657.1171
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	11909	20.0000	595.4608

Quantitative Analysis Calibration Report

Target Compound *PFTeDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200103BCAL\2200103B_02.d	Calibration	1	☑	977	0.5000	3.2197
D:\MassHunter\Data\2200103BCAL\2200103B_03.d	Calibration	2	☑	2452	1.2500	3.0687
D:\MassHunter\Data\2200103BCAL\2200103B_04.d	Calibration	3	☑	10712	5.0000	3.2603
D:\MassHunter\Data\2200103BCAL\2200103B_05.d	Calibration	4	☑	21563	10.0000	3.6212
D:\MassHunter\Data\2200103BCAL\2200103B_06.d	Calibration	5	☑	120679	50.0000	3.8296
D:\MassHunter\Data\2200103BCAL\2200103B_07.d	Calibration	6	☑	248695	100.0000	3.7583
D:\MassHunter\Data\2200103BCAL\2200103B_08.d	Calibration	7	☑	487879	200.0000	3.6260



8I

INJECTION INTERNAL STANDARD AREA SUMMARY

Report No:	219121351	Standard ID:	1205 (ICAL Midpoint)
Analyst:	BMH	Instrument ID:	QQQ1
Analysis Date:	01/03/20 16:05	Lab File ID:	2200103B_06.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674727

	M2PFDA	M2PFHxA	M2PFOA	M4PFOS
	Area	*Area*	*Area*	*Area*
STANDARD	111028	284858	105541	122431

CLIENT SAMPLE ID	*GCAL SAMP ID*		#		#		#		#
MB1992874	1992874	119675		278030		106687		120940	
LCS1992875	1992875	108265		269868		104247		115071	
LCSD1992876	1992876	105446		276593		105004		120235	
AOI 3-GW1	21912135101	116747		273741		107940		117565	
AOI 3-GW1-FD	21912135102	85466		271045		98465		100874	
ERB-121019CS	21912135107	110653		273762		108752		118585	
ERB-121119WL	21912135108	78373		254923		97009		98149	
ERB-121119HA	21912135111	123035		284627		110242		127132	
AOI 3-GW2	21912135124	120519		277812		109886		126060	
FRB-121119	21912135125	110831		274503		107638		116110	
AOI 1-GW3	21912135126	112648		282053		109875		124548	
AOI 1-GW1	21912135127	118644		275602		105855		124834	
AOI 1-GW2	21912135128	124646		280596		110792		128176	
AOI 1-GW2MS	21912135129	107941		268482		105111		119593	
AOI 1-GW2MSD	21912135130	95261		255290		95804		110074	
CS-SW05	21912135131	67883		280612		104586		95500	
CS-SW01	21912135132	89646		268055		99193		111471	
CS-SW02	21912135134	90688		278960		105093		112014	
CS-SW03	21912135136	122448		279485		109198		129874	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

LCMS1 Run Log

Analyst:	BMH	Expiration
Batch:	2200107A	Date
Current ICAL Bath:	2200107ACAL/2200107ACALDW	Date
20mM Amm Acetate	010-28-9	1/9/2020
Methanol	2128641	7/31/2024
Calibration Std	010-27-8	6/30/2020
ICV Std	010-19-7	6/3/2020
EIS Mix	010-27-7	6/30/2020

Name	Data File	Type	Acq. Date-Time	Comment	Dil.
MeOH Shot	2200107A_01.d	MeOH Shot	1/7/2020 8:51	Instrument idle/MeOH Shot	1
1500	2200107A_02.d	Sample	1/7/2020 9:02		1
MeOH Shot	2200107A_03.d	MeOH Shot	1/7/2020 11:03	Instrument idle/MeOH Shot	1
1201	2200107A_04.d	Cal	1/7/2020 11:13		1
1202	2200107A_05.d	Cal	1/7/2020 11:25		1
1203	2200107A_06.d	Cal	1/7/2020 11:36		1
1204	2200107A_07.d	Cal	1/7/2020 11:47		1
1205	2200107A_08.d	Cal	1/7/2020 11:59		1
1206	2200107A_09.d	Cal	1/7/2020 12:10		1
1207	2200107A_10.d	Cal	1/7/2020 12:21		1
MeOH Shot	2200107A_11.d	MeOH Shot	1/7/2020 12:33	Instrument idle/MeOH Shot	1
1600	2200107A_12.d	QC	1/7/2020 12:44		1
1450	2200107A_13.d	QC	1/7/2020 12:55		1
1500	2200107A_14.d	Sample	1/7/2020 13:06		1
MeOH Shot	2200107A_15.d	MeOH Shot	1/7/2020 13:18	Instrument idle/MeOH Shot	1
1991132	2200107A_16.d	Sample	1/7/2020 13:28	673213	1
1991133	2200107A_17.d	QC	1/7/2020 13:40	673213	1
1991134	2200107A_18.d	QC	1/7/2020 13:51	673213	1
1400	2200107A_19.d	QC	1/7/2020 14:02		1
1997164	2200107A_20.d	Sample	1/7/2020 14:14	674444	1
1997165	2200107A_21.d	QC	1/7/2020 14:25	674444	1
1997166	2200107A_22.d	QC	1/7/2020 14:36	674444	1

21911270901	2200107A_23.d	Sample	1/7/2020 14:48	674444	1
21912185203	2200107A_24.d	Sample	1/7/2020 14:59		10
21911272306	2200107A_25.d	Sample	1/7/2020 15:10		5
MeOH Shot	2200107A_26.d	MeOH Shot	1/7/2020 15:22	Instrument idle/MeOH Shot	1
21912185203 x5	2200107A_27.d	Sample	1/7/2020 15:32	674085	5
21912189401 x2000	2200107A_28.d	Sample	1/7/2020 15:44	674085	2000
21912189401 x200	2200107A_29.d	Sample	1/7/2020 15:55	674085	200
MeOH Shot	2200107A_30.d	MeOH Shot	1/7/2020 16:06	Instrument idle/MeOH Shot	1
21912203901 x2000	2200107A_31.d	Sample	1/7/2020 16:17	674085	2000
21912203901 x200	2200107A_32.d	Sample	1/7/2020 16:28	674085	200
MeOH Shot	2200107A_33.d	MeOH Shot	1/7/2020 16:40	Instrument idle/MeOH Shot	1
21912189403 x2000	2200107A_34.d	Sample	1/7/2020 16:51	673872	2000
21912189403 x200	2200107A_35.d	Sample	1/7/2020 17:02	673872	200
MeOH Shot	2200107A_36.d	MeOH Shot	1/7/2020 17:13	Instrument idle/MeOH Shot	1
1400	2200107A_37.d	QC	1/7/2020 17:24		1
21912203902 x2000	2200107A_38.d	Sample	1/7/2020 17:36	673872	2000
21912203902 x200	2200107A_39.d	Sample	1/7/2020 17:47	673872	200
MeOH Shot	2200107A_40.d	MeOH Shot	1/7/2020 17:58	Instrument idle/MeOH Shot	1
21912135138	2200107A_41.d	Sample	1/7/2020 18:09	673520	1
21912135143	2200107A_42.d	Sample	1/7/2020 18:20	673520	1
MeOH Shot	2200107A_43.d	MeOH Shot	1/7/2020 18:32	Instrument idle/MeOH Shot	1
1995724	2200107A_44.d	Sample	1/7/2020 18:43	674077 DW	1
1995725	2200107A_45.d	QC	1/7/2020 18:54	674077 DW	1
1995726	2200107A_46.d	QC	1/7/2020 19:05	674077 DW	1
21912193301	2200107A_47.d	Sample	1/7/2020 19:17	674077 DW	1
21912211101	2200107A_48.d	Sample	1/7/2020 19:28	674077 DW	1
21912211102	2200107A_49.d	Sample	1/7/2020 19:39	674077 DW	1
21912211103	2200107A_50.d	Sample	1/7/2020 19:51	674077 DW	1
21912211104	2200107A_51.d	Sample	1/7/2020 20:02	674077 DW	1
21912211105	2200107A_52.d	QC	1/7/2020 20:13	674077 DW	1
21912211106	2200107A_53.d	QC	1/7/2020 20:25	674077 DW	1
21912211107	2200107A_54.d	Sample	1/7/2020 20:36	674077 DW	1
1400	2200107A_55.d	QC	1/7/2020 20:47		1
1995735	2200107A_56.d	Sample	1/7/2020 20:59	674086	1

1995736	2200107A_57.d	QC	1/7/2020 21:10	674086	1
1995737	2200107A_58.d	QC	1/7/2020 21:21	674086	1
21912211203	2200107A_59.d	Sample	1/7/2020 21:33	674086	1
21912211204	2200107A_60.d	Sample	1/7/2020 21:44	674086	1
21912211201	2200107A_61.d	Sample	1/7/2020 21:55	674086	1
21912211202	2200107A_62.d	Sample	1/7/2020 22:07	674086	1
21912211205	2200107A_63.d	Sample	1/7/2020 22:18	674086	1
21912211206	2200107A_64.d	Sample	1/7/2020 22:29	674086	1
21912211207	2200107A_65.d	Sample	1/7/2020 22:41	674086	1
21912211208	2200107A_66.d	Sample	1/7/2020 22:52	674086	1
21912203001	2200107A_67.d	Sample	1/7/2020 23:04	674086	1
21912203002	2200107A_68.d	Sample	1/7/2020 23:15	674086	1
1400	2200107A_69.d	QC	1/7/2020 23:26	674086	1
21912203003	2200107A_70.d	Sample	1/7/2020 23:38	674086	1
21912203004	2200107A_71.d	Sample	1/7/2020 23:49	674086	1
21912203005	2200107A_72.d	Sample	1/8/2020 0:00	674086	1
21912203006	2200107A_73.d	Sample	1/8/2020 0:12	674086	1
21912203007	2200107A_74.d	Sample	1/8/2020 0:23	674086	1
21912203008	2200107A_75.d	Sample	1/8/2020 0:34	674086	1
21912203009	2200107A_76.d	Sample	1/8/2020 0:46	674086	1
21912203010	2200107A_77.d	Sample	1/8/2020 0:57	674086	1
21912203011	2200107A_78.d	Sample	1/8/2020 1:08	674086	1
1400	2200107A_79.d	QC	1/8/2020 1:20	674086	1
MeOH Shot	2200107A_80.d	MeOH Shot	1/8/2020 1:31	Instrument idle/MeOH Shot	1
22001020201	2200107A_81.d	Sample	1/8/2020 1:42	674590 LOD	1
22001020202	2200107A_82.d	Sample	1/8/2020 1:53	674590 LOD	1
22001020203	2200107A_83.d	Sample	1/8/2020 2:04	674590 LOQ	1
1400	2200107A_84.d	QC	1/8/2020 2:16		1

Quantitative Analysis Calibration Report

Batch Data Path	D:\MassHunter\Data\2200107ACAL\QuantResults\2200107A.batch.bin		
Analysis Time	1/9/2020 3:01 PM	**Analyst Name**	GCAL\lcms
Report Time	1/9/2020 3:06 PM	**Reporter Name**	GCAL\lcms
Last Calib Update	1/9/2020 3:01 PM	**Batch State**	Processed

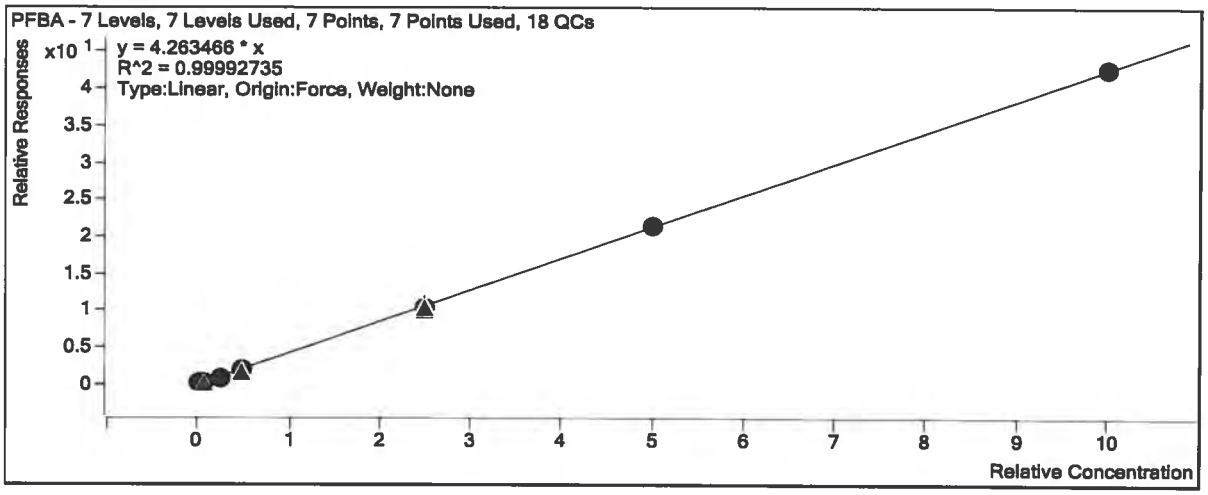
Calibration Info

Extracted ISTD ***MPFBA***

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	14382	20.0000	719.0751
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	13666	20.0000	683.3129
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	13354	20.0000	667.6923
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	13222	20.0000	661.1097
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	12972	20.0000	648.6035
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	13582	20.0000	679.1245
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	13126	20.0000	656.3112

Target Compound ***PFBA***

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	2018	0.5000	5.6125
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	3407	1.2500	3.9894
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	12449	5.0000	3.7289
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	25376	10.0000	3.8384
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	135630	50.0000	4.1822
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	290431	100.0000	4.2766
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	560053	200.0000	4.2667

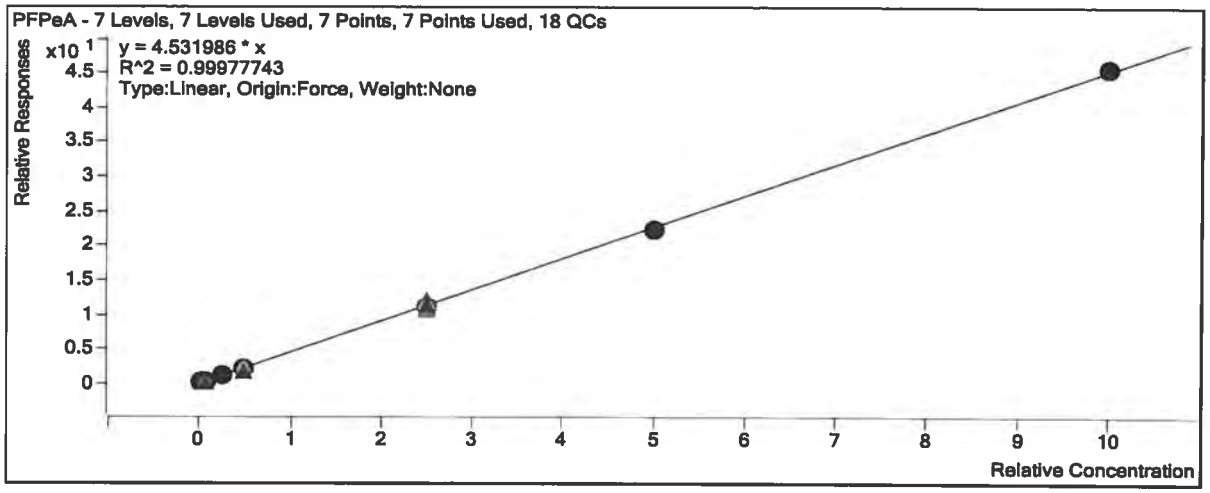


Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	15539	20.0000	776.9564
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	15505	20.0000	775.2370
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	16525	20.0000	826.2487
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	15503	20.0000	775.1726

Target Compound ***PFPeA***

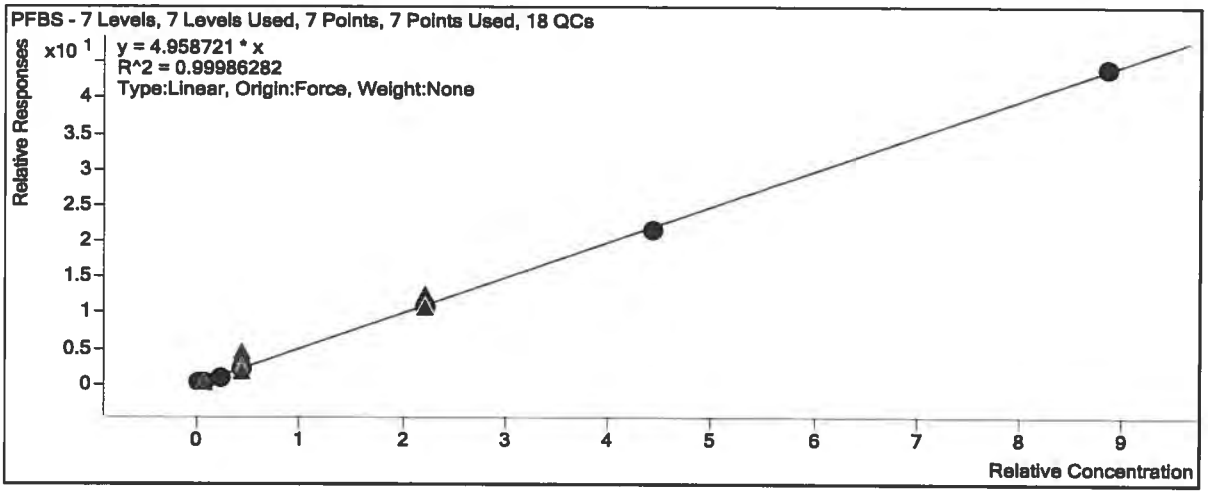
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	2252	0.5000	5.6052
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	4842	1.2500	4.9022
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	17836	5.0000	4.5816
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	32495	10.0000	4.1823
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	172142	50.0000	4.4410
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	366823	100.0000	4.4396
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	707203	200.0000	4.5616



Target Compound ***PFBS***

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	1497	0.4425	3.6307
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	4287	1.1100	4.2131
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	17929	4.4250	4.3675
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	35965	8.8500	4.3728

D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	198099	44.2500	4.8846
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	421810	88.5000	4.8980
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	816050	177.0000	4.9804



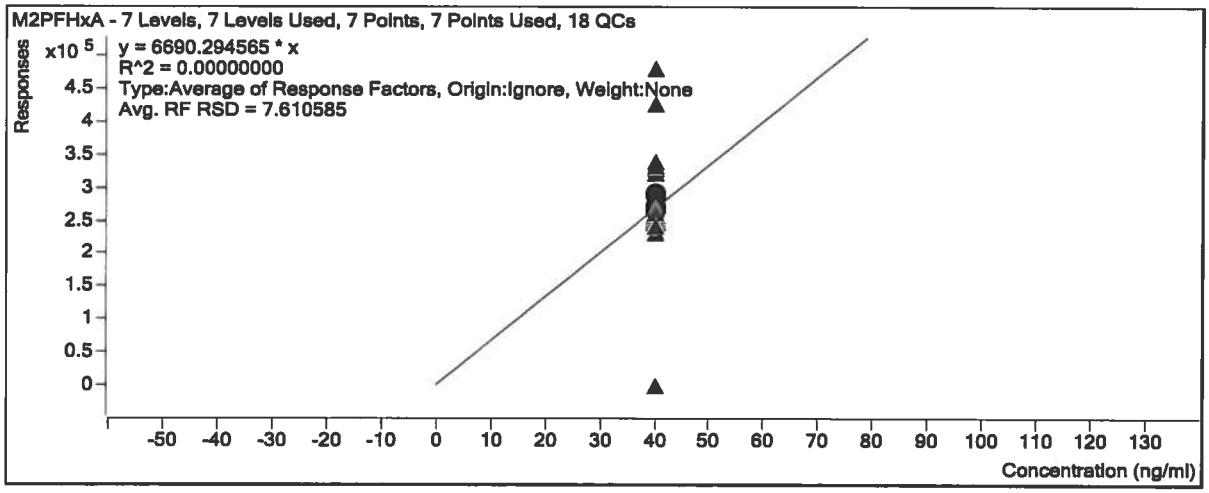
Extracted ISTD ***M3PFBS***

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	18631	20.0000	931.5564
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	18334	20.0000	916.7117
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	18554	20.0000	927.6977
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	18587	20.0000	929.3572
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	18330	20.0000	916.5105
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	19462	20.0000	973.1010
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	18514	20.0000	925.7175

Extracted ISTD ***M2 4:2 FTS***

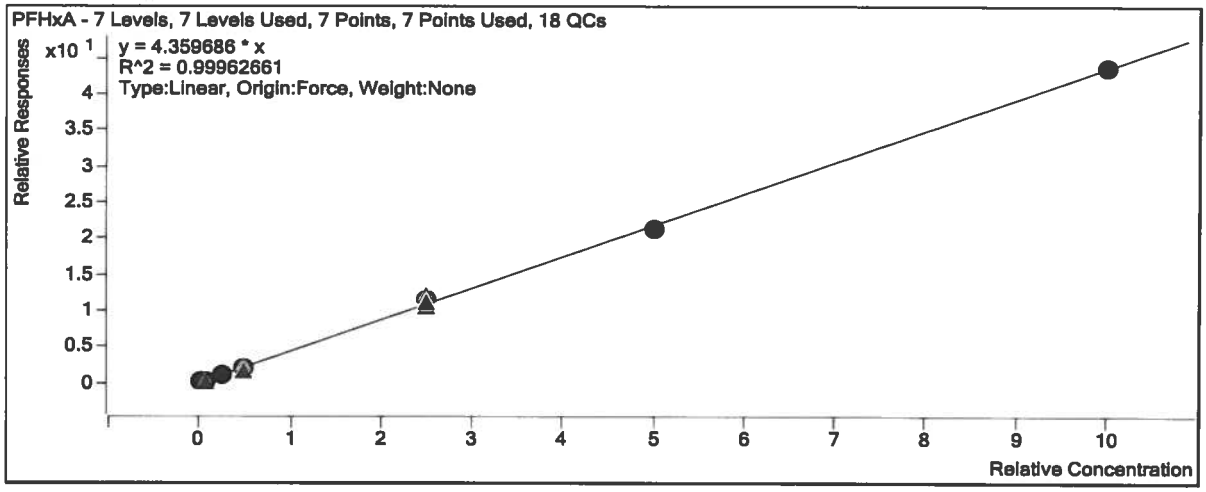
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	9961	20.0000	498.0363
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	10688	20.0000	534.3802
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	10546	20.0000	527.2991
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	10080	20.0000	504.0063
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	9425	20.0000	471.2352
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	9488	20.0000	474.4194
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	8274	20.0000	413.6822

Quantitative Analysis Calibration Report



Target Compound *PFHxA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	2967	0.5000	3.8427
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	7054	1.2500	3.6725
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	30740	5.0000	4.0286
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	61656	10.0000	3.9764
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	330731	50.0000	4.6223
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	702526	100.0000	4.2916
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	1331041	200.0000	4.3615

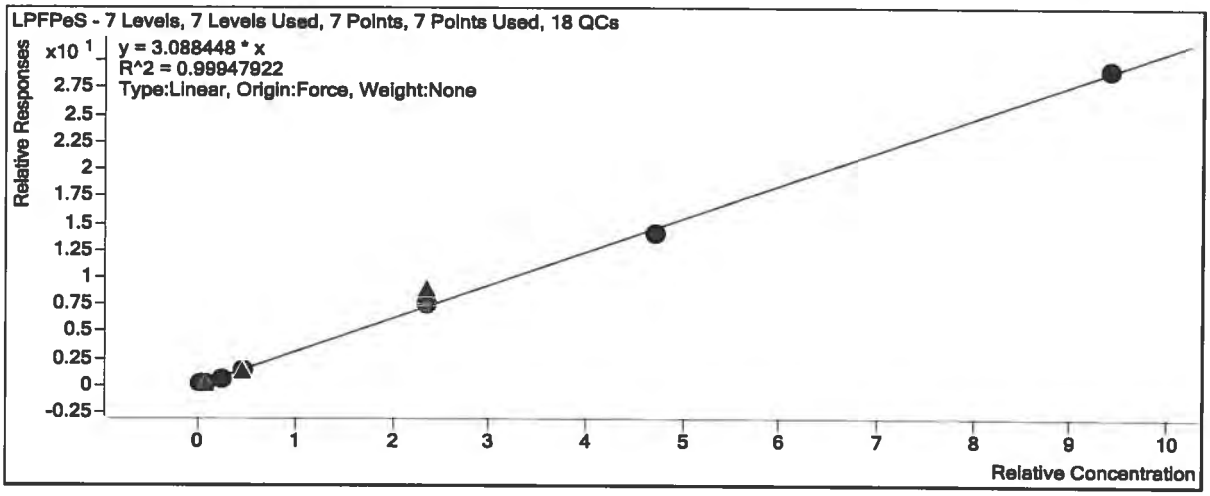


Target Compound *LPFPeS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	890709	188.0000	3.1049



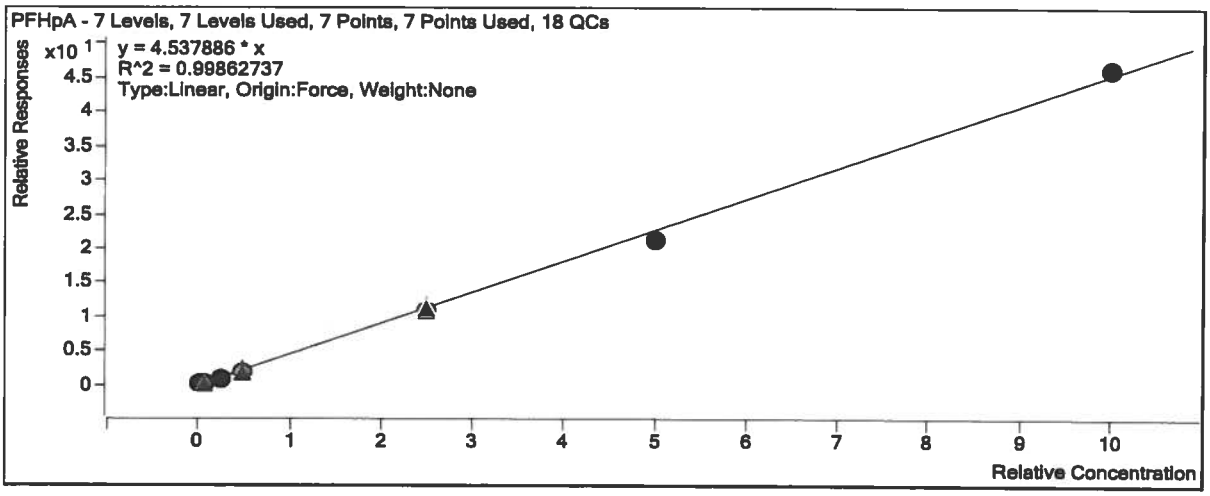
Extracted ISTD *M3HFPODA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	1768	20.0000	88.4061
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	1646	20.0000	82.2789
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	1510	20.0000	75.4808
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	1731	20.0000	86.5724
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	1838	20.0000	91.9007
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	1821	20.0000	91.0584
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	1909	20.0000	95.4295

Target Compound *HFPO-DA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	216	0.5000	4.8759
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	463	1.2500	4.5056
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	2040	5.0000	5.4044
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	3994	10.0000	4.6130
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	19660	50.0000	4.2785
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	47122	100.0000	5.1749
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	89314	200.0000	4.6796

Quantitative Analysis Calibration Report



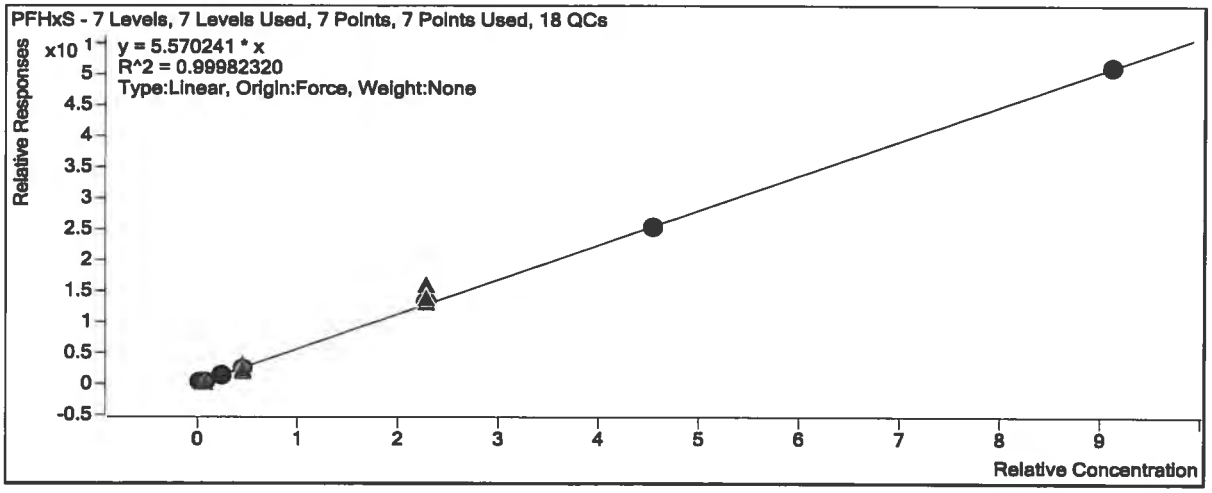
Extracted ISTD ***M3PFHxS***

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	18326	20.0000	916.3086
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	17744	20.0000	887.2071
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	18132	20.0000	906.6085
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	18105	20.0000	905.2433
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	18190	20.0000	909.5183
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	20453	20.0000	1022.6663
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	19471	20.0000	973.5513

Target Compound ***PFHxS***

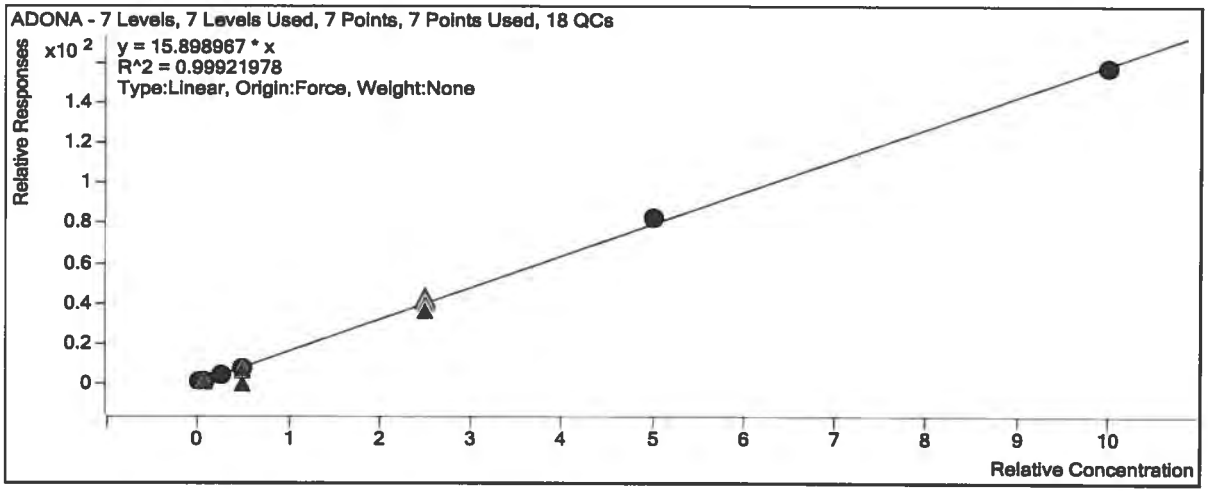
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	1920	0.4560	4.5952
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	5700	1.1400	5.6358
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	21927	4.5600	5.3039
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	43595	9.1200	5.2805
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	240301	45.6000	5.7940
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	513126	91.2000	5.5017
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	989859	182.4000	5.5743

Quantitative Analysis Calibration Report



Target Compound *ADONA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	6201	0.5000	11.9502
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	16710	1.2500	12.6522
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	75961	5.0000	15.1367
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	155476	10.0000	15.3739
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	810015	50.0000	15.1655
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	1729262	100.0000	16.5775
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	3306768	200.0000	15.7771

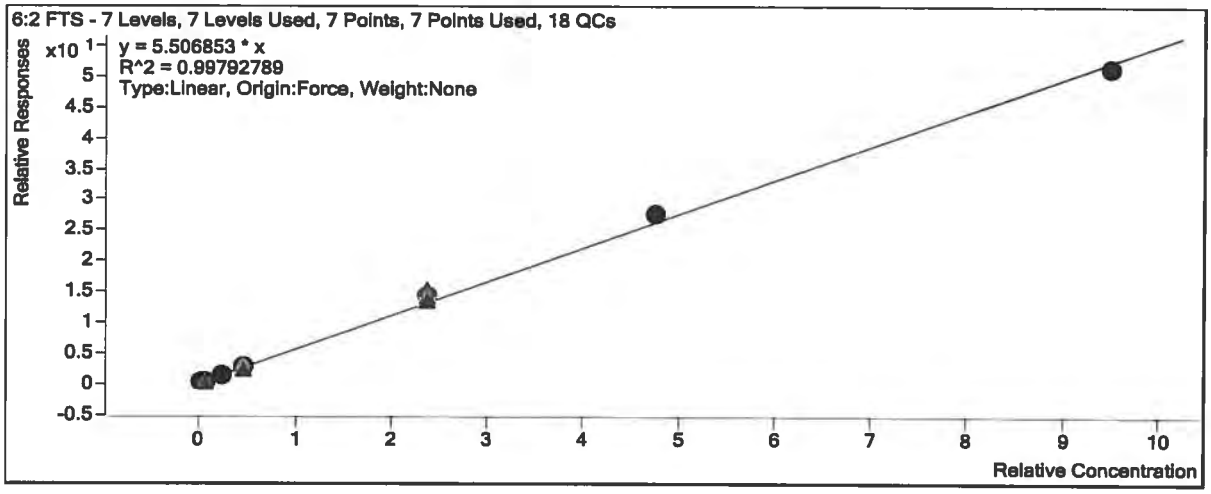


Target Compound *6:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	895518	190.0000	5.4005



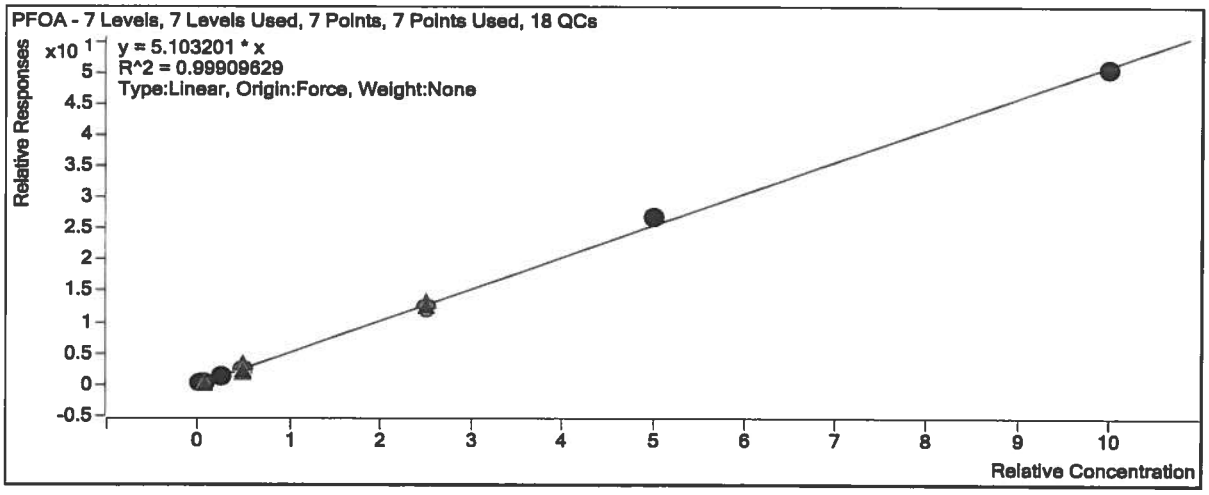
Extracted ISTD *M2 6:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	17758	20.0000	887.9053
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	17719	20.0000	885.9337
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	18722	20.0000	936.0825
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	18307	20.0000	915.3463
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	18176	20.0000	908.7958
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	18312	20.0000	915.6123
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	17455	20.0000	872.7373

Extracted ISTD *M8PFOA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	20755	20.0000	1037.7472
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	21132	20.0000	1056.5952
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	20073	20.0000	1003.6713
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	20226	20.0000	1011.2995
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	21365	20.0000	1068.2301
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	20863	20.0000	1043.1374
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	20959	20.0000	1047.9638

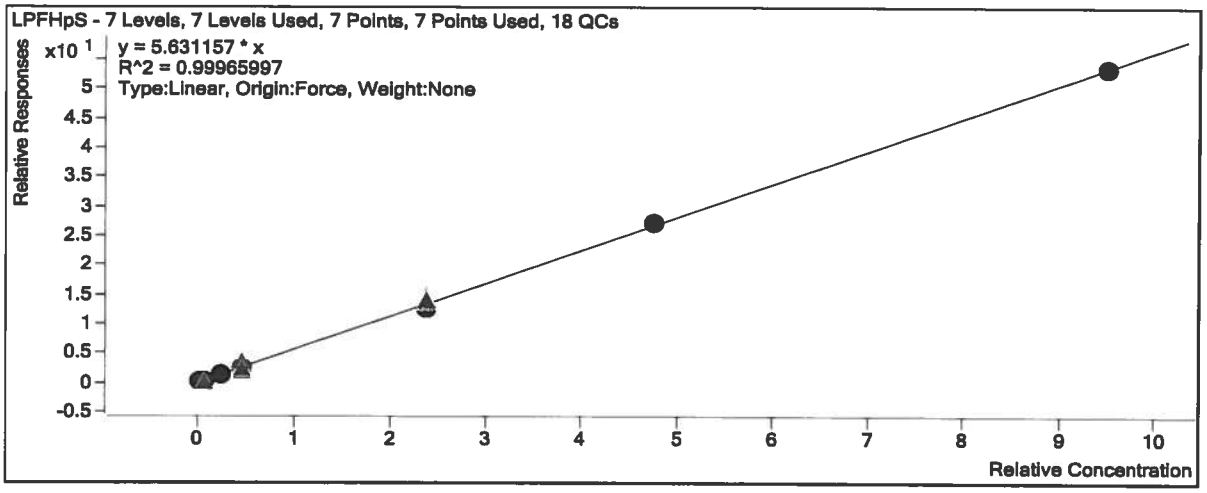
Quantitative Analysis Calibration Report



Quantitative Analysis Calibration Report

Target Compound *LPFHpS*

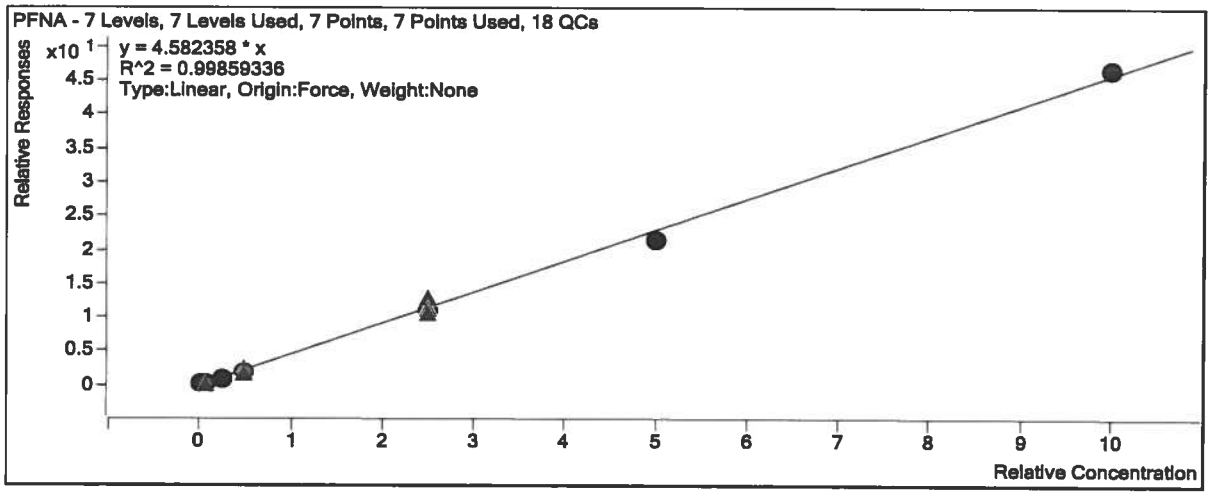
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	2319	0.4750	4.7051
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	5407	1.1900	4.3006
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	24736	4.7500	5.1885
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	48486	9.5000	5.0467
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	271599	47.5000	5.3527
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	569088	95.0000	5.7427
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	1119509	190.0000	5.6225



Target Compound *PFNA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	2185	0.5000	3.4138
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	5654	1.2500	3.4085
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	26076	5.0000	3.9999
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	52213	10.0000	3.9117
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	289571	50.0000	4.4750
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	606207	100.0000	4.3181
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	1175798	200.0000	4.6572

Quantitative Analysis Calibration Report



Extracted ISTD *M9PFNA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	25607	20.0000	1280.3433
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	26542	20.0000	1327.1243
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	26076	20.0000	1303.8163
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	26696	20.0000	1334.7947
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	25884	20.0000	1294.1839
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	28078	20.0000	1403.8757
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	25247	20.0000	1262.3364

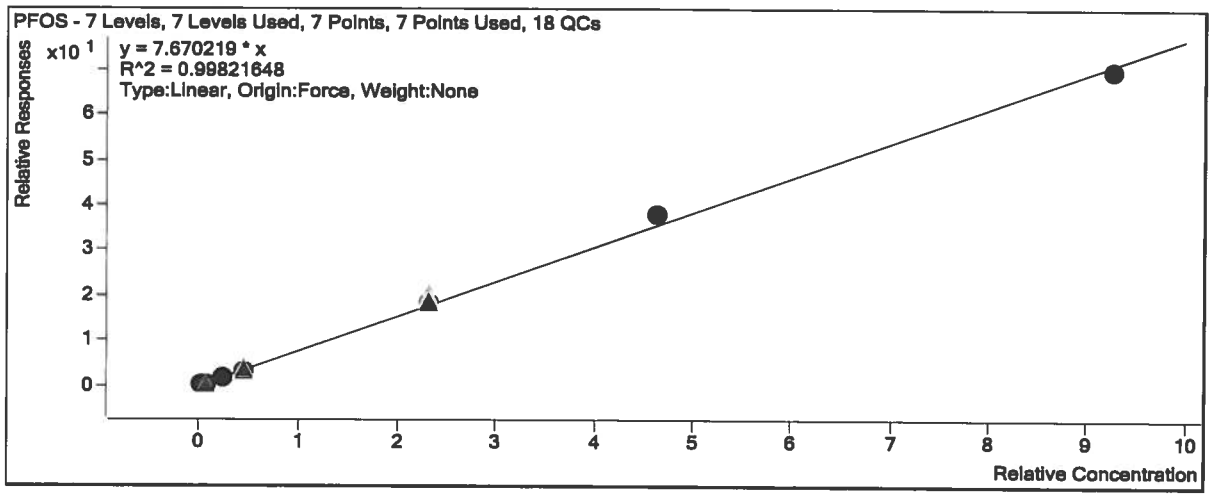
Extracted ISTD *M8PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	13767	20.0000	688.3480
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	13784	20.0000	689.1854
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	13448	20.0000	672.4065
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	13769	20.0000	688.4308
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	14027	20.0000	701.3526
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	14779	20.0000	738.9368
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	15545	20.0000	777.2486

Instrument ISTD *M4PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

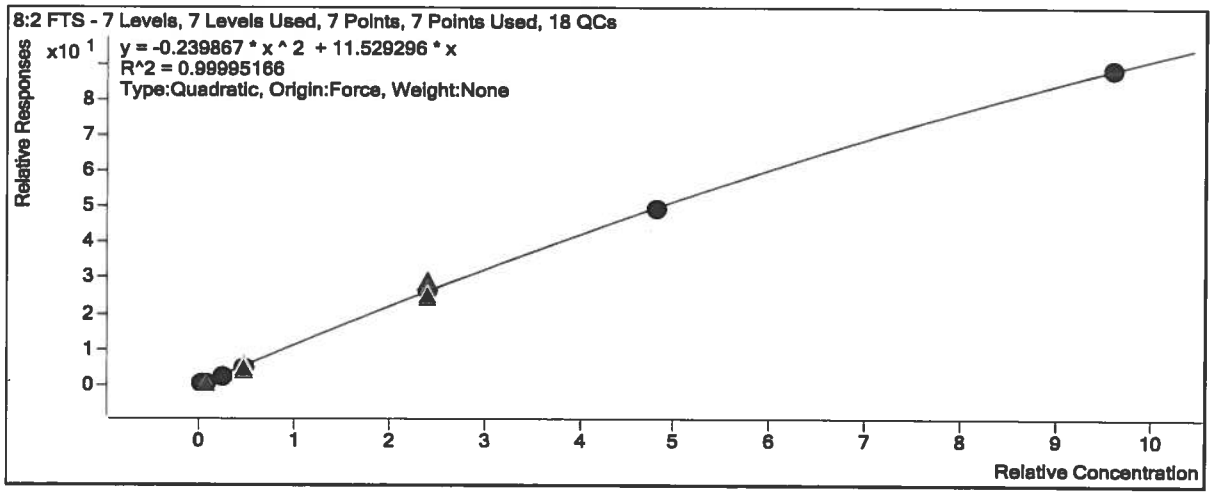
Quantitative Analysis Calibration Report



Target Compound *9Cl-PF3ONS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	8663	0.5000	25.1714
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	25585	1.2500	29.6983
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	109427	5.0000	32.5479
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	227906	10.0000	33.1051
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	1177694	50.0000	33.5835
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	2468078	100.0000	33.4004

Quantitative Analysis Calibration Report



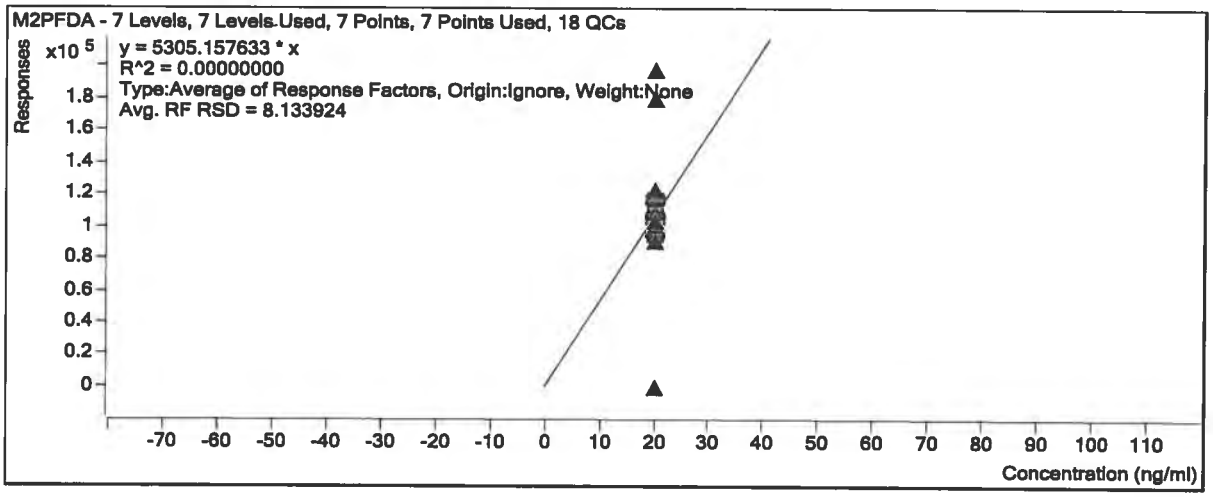
Extracted ISTD *M6PFDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	23030	20.0000	1151.5144
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	22282	20.0000	1114.1186
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	22786	20.0000	1139.3249
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	23045	20.0000	1152.2291
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	21293	20.0000	1064.6611
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	23348	20.0000	1167.4140
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	21648	20.0000	1082.3933

Instrument ISTD *M2PFDA*

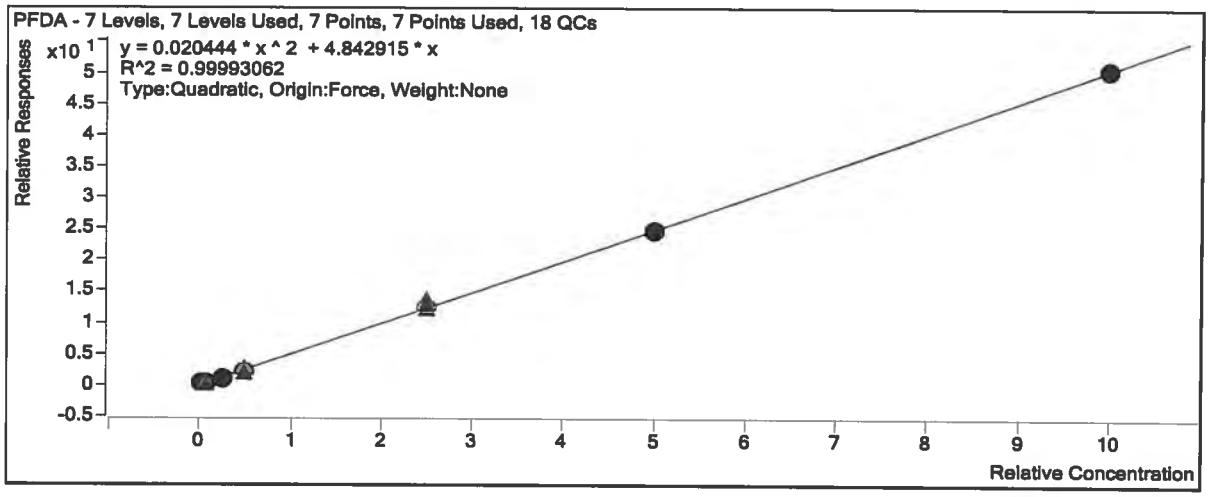
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	96855	20.0000	4842.7583
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	105632	20.0000	5281.6090
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	95121	20.0000	4756.0316
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	116232	20.0000	5811.6129
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	104347	20.0000	5217.3531
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	117692	20.0000	5884.6085
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	106843	20.0000	5342.1301

Quantitative Analysis Calibration Report



Target Compound *PFDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	2161	0.5000	3.7533
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	5886	1.2500	4.2267
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	24921	5.0000	4.3746
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	48799	10.0000	4.2352
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	264338	50.0000	4.9657
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	575834	100.0000	4.9326
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	1092760	200.0000	5.0479

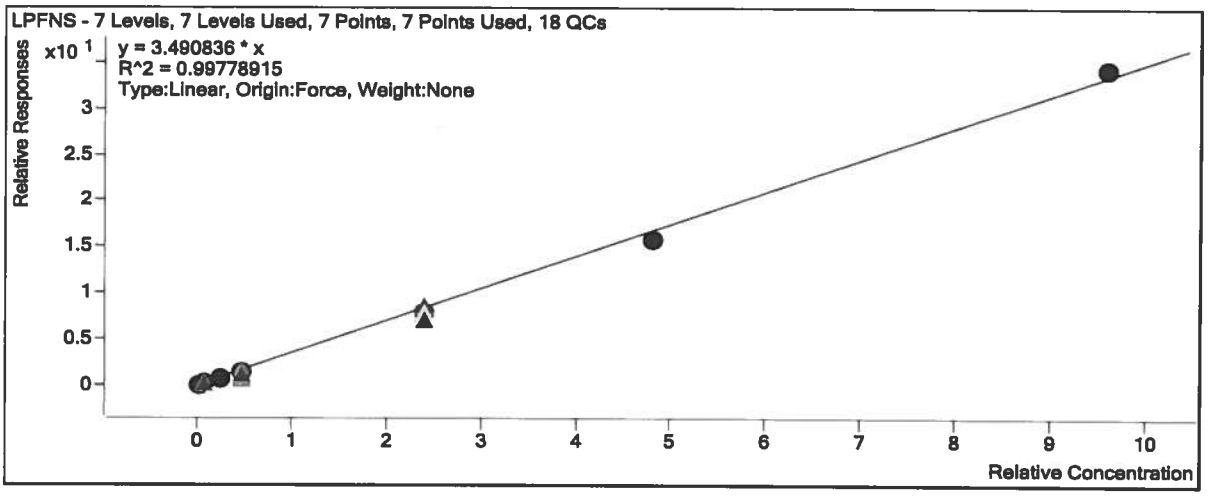


Target Compound *LPFNS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	863954	192.0000	3.5646



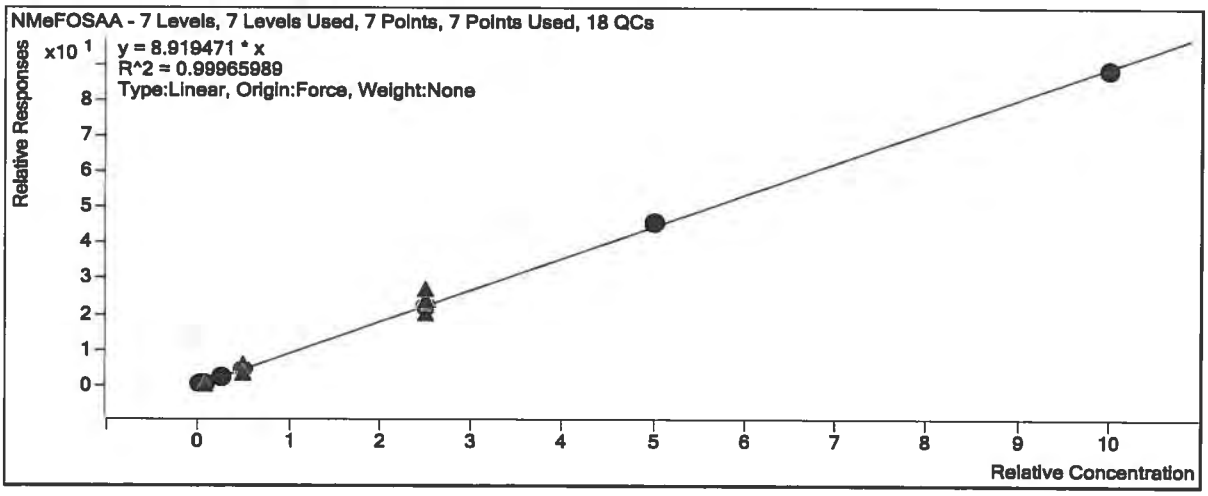
Extracted ISTD *d3-NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	2975	20.0000	148.7329
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	3065	20.0000	153.2665
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	2922	20.0000	146.1200
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	2896	20.0000	144.7990
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	3222	20.0000	161.0997
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	3519	20.0000	175.9504
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	3489	20.0000	174.4731

Target Compound *NMeFOSAA*

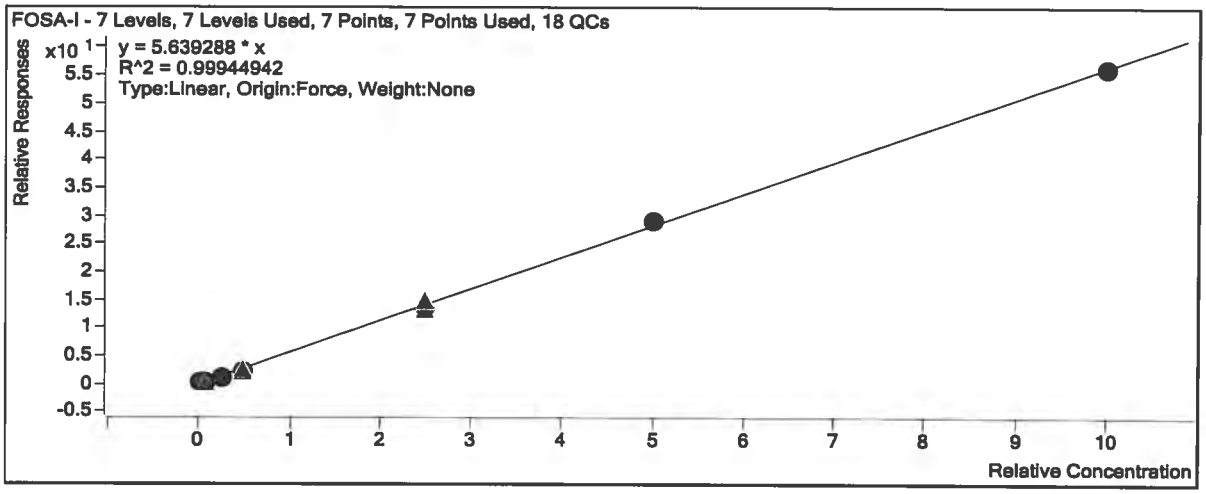
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	632	0.5000	8.4962
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	1490	1.2500	7.7785
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	6612	5.0000	9.0497
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	12913	10.0000	8.9178
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	71789	50.0000	8.9123
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	161660	100.0000	9.1878
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	308915	200.0000	8.8528

Quantitative Analysis Calibration Report



Target Compound *FOSA-I*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	2109	0.5000	4.2782
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	5700	1.2500	4.7523
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	24174	5.0000	5.0683
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	49440	10.0000	4.8557
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	270941	50.0000	5.3733
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	591717	100.0000	5.8170
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	1147010	200.0000	5.6139



Extracted ISTD *M8FOSA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

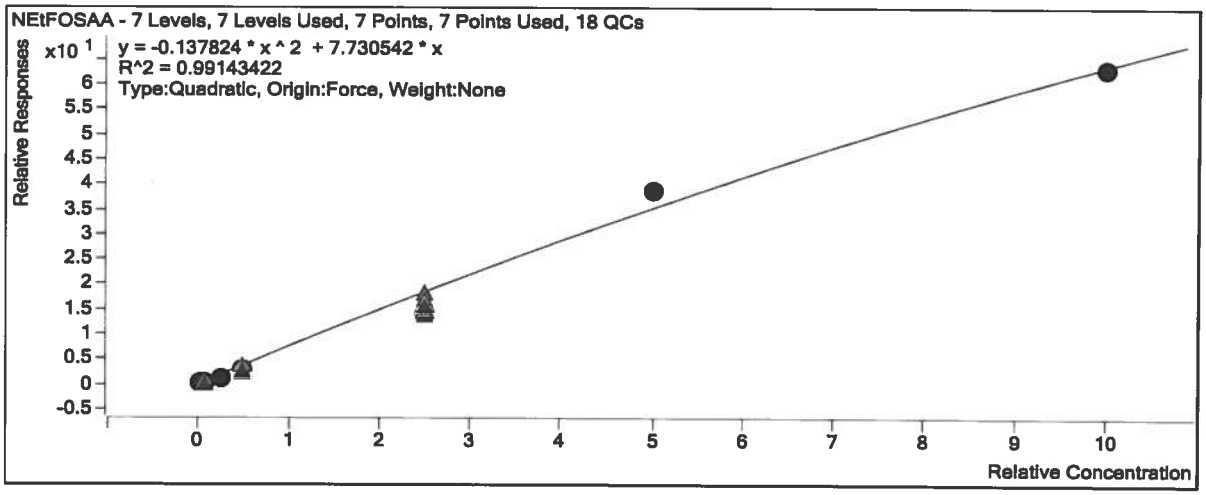
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	20432	20.0000	1021.5888

Extracted ISTD *d5-NEtFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	4357	20.0000	217.8521
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	4209	20.0000	210.4448
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	4681	20.0000	234.0424
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	4184	20.0000	209.2152
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	4708	20.0000	235.3830
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	3650	20.0000	182.5239
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	4191	20.0000	209.5519

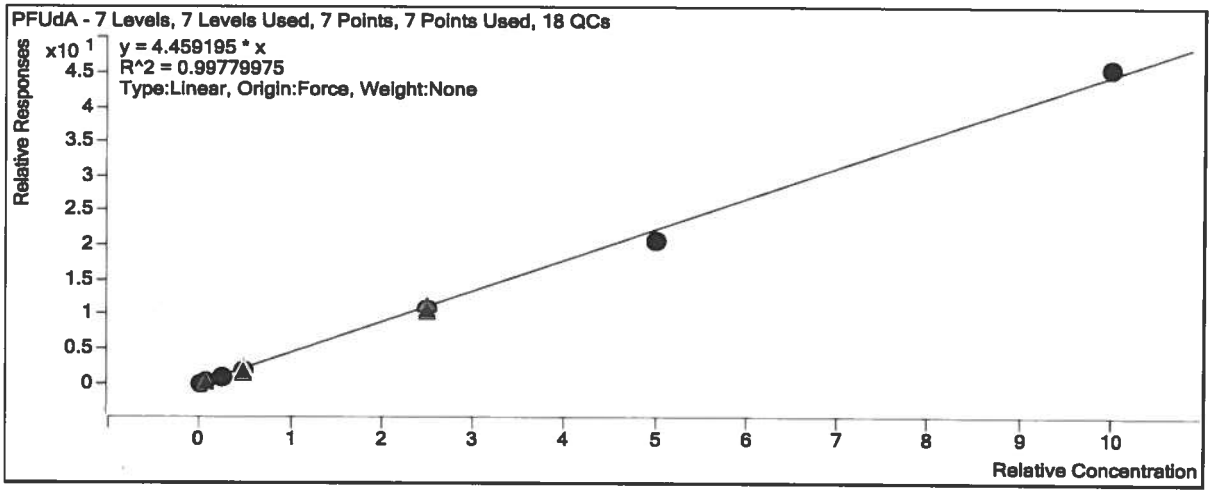
Target Compound *NEtFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	544	0.5000	4.9909
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	1606	1.2500	6.1037
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	6355	5.0000	5.4306
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	13139	10.0000	6.2802
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	66895	50.0000	5.6839
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	140865	100.0000	7.7176
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	263808	200.0000	6.2946



Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	41045	10.0000	3.7694
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	217037	50.0000	4.2659
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	468214	100.0000	4.1424
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	892583	200.0000	4.5525



Extracted ISTD *M7PFUdA*

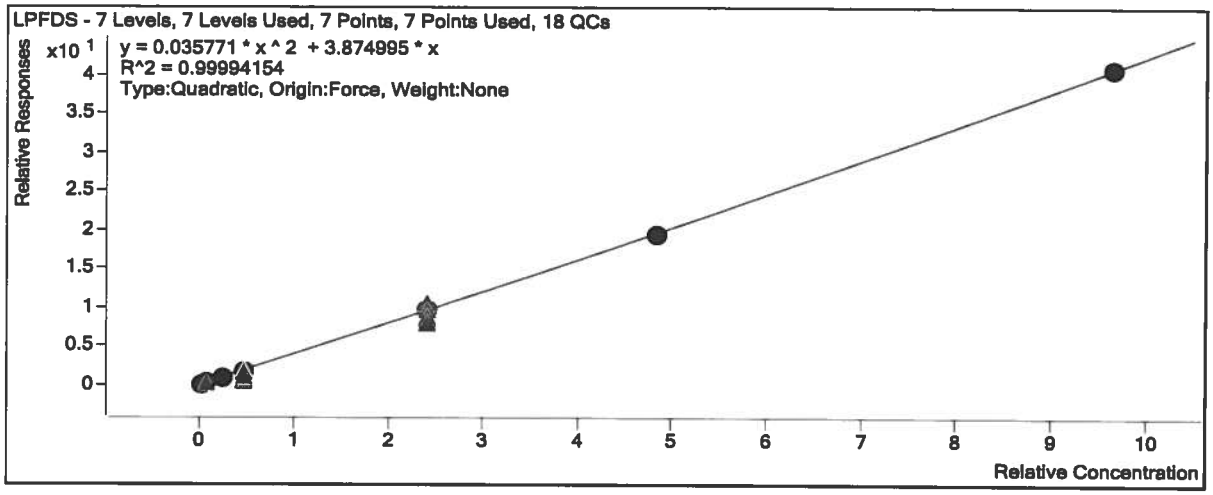
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	20729	20.0000	1036.4746
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	21421	20.0000	1071.0730
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	19424	20.0000	971.2007
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	21778	20.0000	1088.8977
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	20351	20.0000	1017.5321
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	22606	20.0000	1130.2858
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	19606	20.0000	980.3211

Target Compound *LPFDS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	1536	0.4825	2.7651
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	4341	1.2100	3.2203
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	19259	4.8250	3.5034
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	37814	9.6500	3.4008

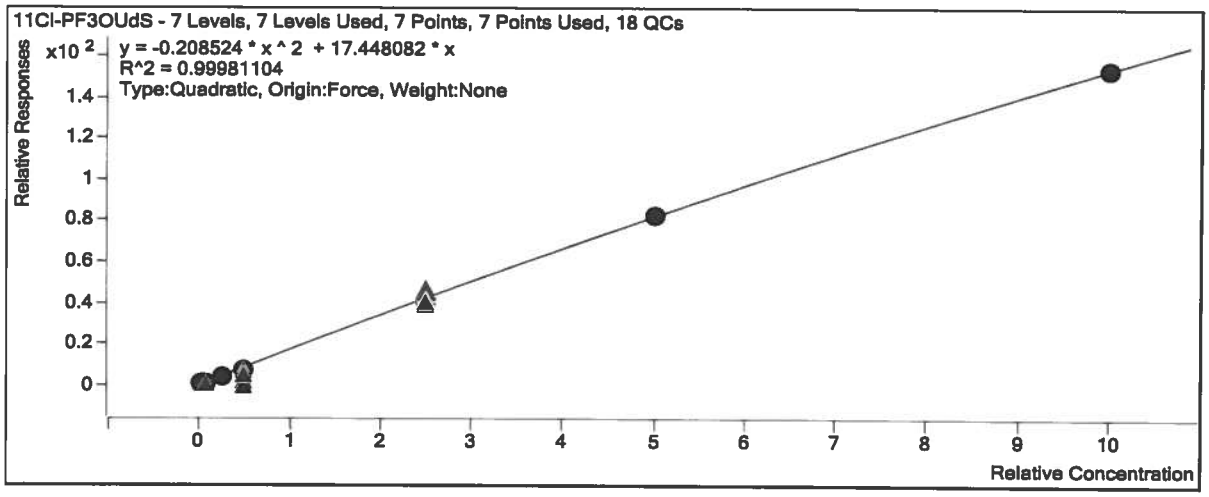
Quantitative Analysis Calibration Report

D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	205914	48.2500	4.0085
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	455281	96.5000	4.0414
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	881628	193.0000	4.2203



Target Compound *11Cl-PF3OUdS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	4654	0.5000	13.5225
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	11993	1.2500	13.9216
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	53684	5.0000	15.9677
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	105538	10.0000	15.3303
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	577280	50.0000	16.4619
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	1228578	100.0000	16.6263
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	2385030	200.0000	15.3428

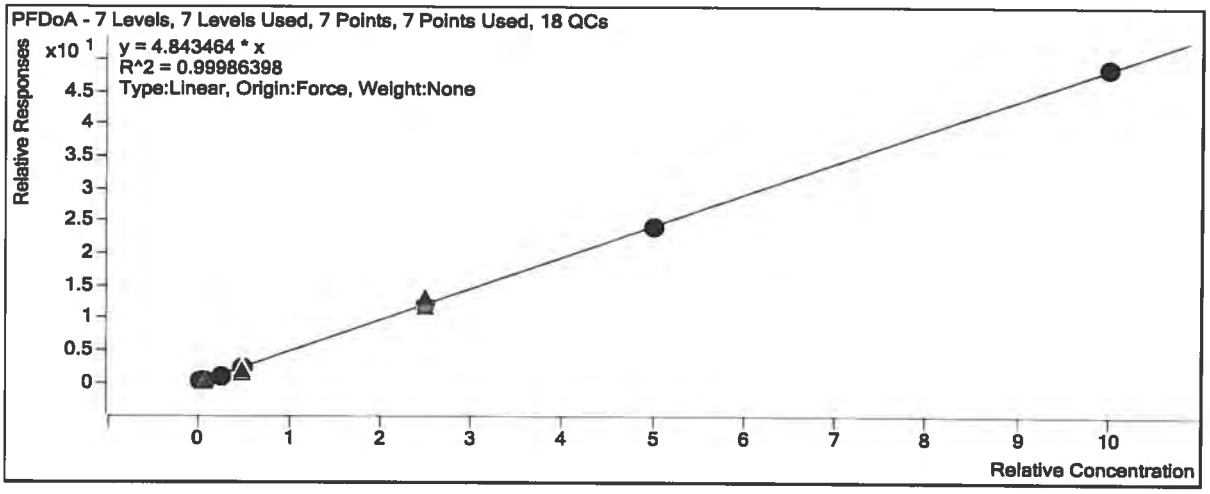


Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	15052	20.0000	752.6217

Target Compound *PFDoA*

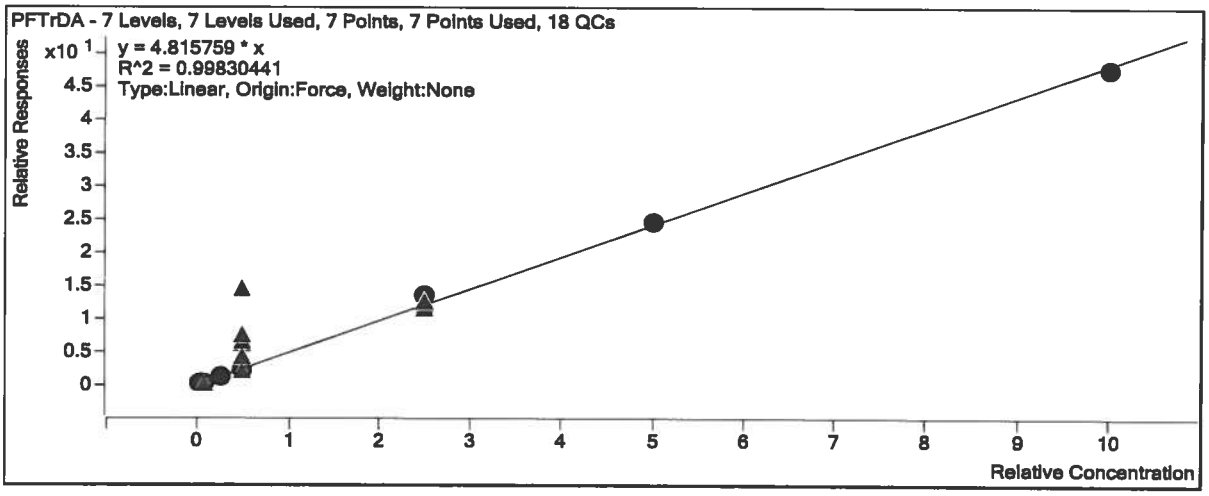
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	1404	0.5000	3.7461
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	3487	1.2500	3.8443
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	14805	5.0000	3.9681
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	31435	10.0000	4.2614
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	175771	50.0000	4.7033
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	382790	100.0000	4.8510
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	730403	200.0000	4.8524



Target Compound *PFTrDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	1234	0.5000	4.5512
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	3392	1.2500	5.0467
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	11912	5.0000	4.5504
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	24790	10.0000	4.7910
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	142529	50.0000	5.4367
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	305690	100.0000	4.9341
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	579274	200.0000	4.7476

Quantitative Analysis Calibration Report



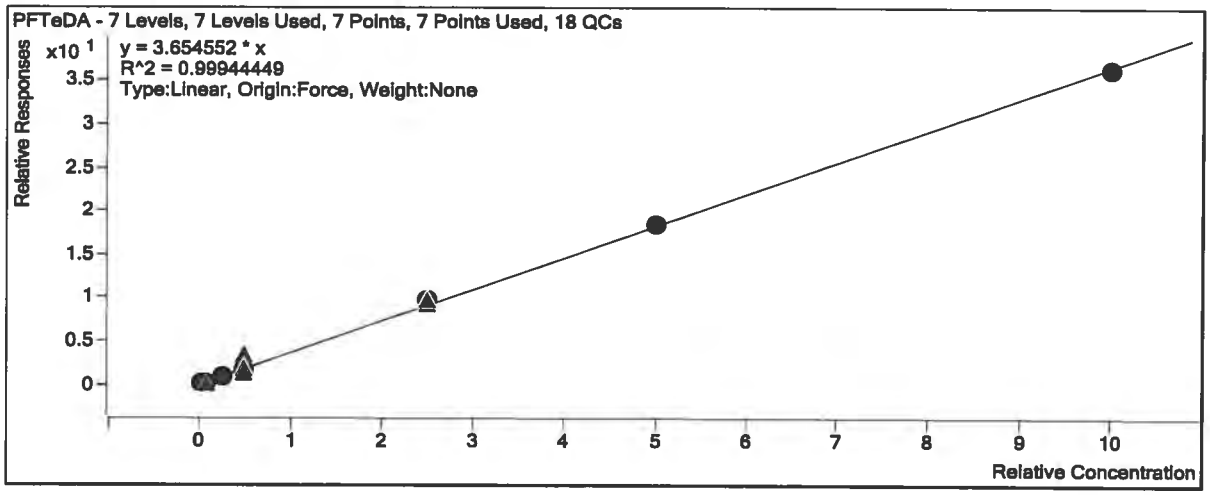
Extracted ISTD *M2PFTeDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	10849	20.0000	542.4450
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	10755	20.0000	537.7595
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	10472	20.0000	523.5782
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	10349	20.0000	517.4310
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	10486	20.0000	524.3182
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	12391	20.0000	619.5409
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	12201	20.0000	610.0736

Target Compound *PFTeDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2200107ACAL\2200107A_04.d	Calibration	1	☑	913	0.5000	3.3651
D:\MassHunter\Data\2200107ACAL\2200107A_05.d	Calibration	2	☑	2338	1.2500	3.4776
D:\MassHunter\Data\2200107ACAL\2200107A_06.d	Calibration	3	☑	9533	5.0000	3.6417
D:\MassHunter\Data\2200107ACAL\2200107A_07.d	Calibration	4	☑	18282	10.0000	3.5333
D:\MassHunter\Data\2200107ACAL\2200107A_08.d	Calibration	5	☑	103210	50.0000	3.9369
D:\MassHunter\Data\2200107ACAL\2200107A_09.d	Calibration	6	☑	228844	100.0000	3.6938
D:\MassHunter\Data\2200107ACAL\2200107A_10.d	Calibration	7	☑	442599	200.0000	3.6274

Quantitative Analysis Calibration Report



6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/07/2020 12:44	Lab File ID:	2200107A_12.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674886

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomer sulfonate	ng/L	50000	56300	113	70	130	
8:2 Fluorotelomer sulfonate	ng/L	50000	54300	109	70	130	
NEtFOSAA	ng/L	50000	37900	76	70	130	
NMeFOSAA	ng/L	50000	45600	91	70	130	
Perfluorobutanoic acid	ng/L	50000	51000	102	70	130	
Perfluorobutanesulfonic acid	ng/L	50000	51300	103	70	130	
Perfluorodecanoic acid	ng/L	50000	56500	113	70	130	
Perfluorododecanoic acid	ng/L	50000	48200	96	70	130	
Perfluoroheptanoic acid	ng/L	50000	52200	104	70	130	
Perfluorohexanoic acid	ng/L	50000	56400	113	70	130	
Perfluorohexanesulfonic acid	ng/L	50000	57800	116	70	130	
Perfluorononanoic acid	ng/L	50000	56800	114	70	130	
Perfluorooctanoic acid	ng/L	50000	52400	105	70	130	
Perfluorooctane Sulfonate	ng/L	50000	49900	100	70	130	
Perfluoropentanoic acid	ng/L	50000	53200	106	70	130	
Perfluorotetradecanoic acid	ng/L	50000	55000	110	70	130	
Perfluorotridecanoic acid	ng/L	50000	47500	95	70	130	
Perfluoroundecanoic acid	ng/L	50000	50400	101	70	130	

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/07/2020 12:55	Lab File ID:	2200107A_13.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674886

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomer sulfonate	ng/L	7.93	8.73	110	70	130	
8:2 Fluorotelomer sulfonate	ng/L	8.00	6.62	83	70	130	
NEtFOSAA	ng/L	8.33	7.60	91	70	130	
NMeFOSAA	ng/L	8.33	7.80	93	70	130	
Perfluorobutanoic acid	ng/L	8.33	8.33	100	70	130	
Perfluorobutanesulfonic acid	ng/L	7.40	6.36	86	70	130	
Perfluorodecanoic acid	ng/L	8.33	7.20	86	70	130	
Perfluorododecanoic acid	ng/L	8.33	7.60	91	70	130	
Perfluoroheptanoic acid	ng/L	8.33	6.55	79	70	130	
Perfluorohexanoic acid	ng/L	8.33	7.67	92	70	130	
Perfluorohexanesulfonic acid	ng/L	7.60	8.07	106	70	130	
Perfluorononanoic acid	ng/L	8.33	7.07	85	70	130	
Perfluorooctanoic acid	ng/L	8.33	7.13	86	70	130	
Perfluorooctane Sulfonate	ng/L	7.73	10.0	129	70	130	
Perfluoropentanoic acid	ng/L	8.33	8.53	103	70	130	
Perfluorotetradecanoic acid	ng/L	8.33	8.80	105	70	130	
Perfluorotridecanoic acid	ng/L	8.33	7.93	95	70	130	
Perfluoroundecanoic acid	ng/L	8.33	7.80	94	70	130	

4I

ORGANICS INSTRUMENT BLANK

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/07/2020 13:06	Lab File ID:	2200107A_14.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674886

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
6:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.79	4.00	10.0	
8:2 Fluorotelomer sulfonate	ng/L	4.00	U	1.63	4.00	10.0	
NEtFOSAA	ng/L	8.00	U	5.38	8.00	10.0	
NMeFOSAA	ng/L	8.00	U	4.60	8.00	10.0	
Perfluorobutanesulfonic acid	ng/L	4.00	U	1.47	4.00	10.0	
Perfluorobutanoic acid	ng/L	4.00	U	2.13	4.00	10.0	
Perfluorodecanoic acid	ng/L	4.00	U	1.65	4.00	10.0	
Perfluorododecanoic acid	ng/L	4.00	U	2.45	4.00	10.0	
Perfluoroheptanoic acid	ng/L	4.00	U	1.85	4.00	10.0	
Perfluorohexanesulfonic acid	ng/L	4.00	U	1.64	4.00	10.0	
Perfluorohexanoic acid	ng/L	4.00	U	1.94	4.00	10.0	
Perfluorononanoic acid	ng/L	4.00	U	1.68	4.00	10.0	
Perfluorooctane Sulfonate	ng/L	4.00	U	1.70	4.00	10.0	
Perfluorooctanoic acid	ng/L	4.00	U	1.80	4.00	10.0	
Perfluoropentanoic acid	ng/L	4.00	U	2.35	4.00	10.0	
Perfluorotetradecanoic acid	ng/L	4.00	U	2.76	4.00	10.0	
Perfluorotridecanoic acid	ng/L	4.00	U	2.56	4.00	10.0	
Perfluoroundecanoic acid	ng/L	4.00	U	1.86	4.00	10.0	

* - Result greater than 1/2 LOQ

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/07/2020 17:24	Lab File ID:	2200107A_37.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674886

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomer sulfonate	ng/L	47500	50700	107	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	45100	94	70	130	
NEtFOSAA	ng/L	50000	49400	99	70	130	
NMeFOSAA	ng/L	50000	54200	108	70	130	
Perfluorobutanoic acid	ng/L	50000	47400	95	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	44100	100	70	130	
Perfluorodecanoic acid	ng/L	50000	51000	102	70	130	
Perfluorododecanoic acid	ng/L	50000	49000	98	70	130	
Perfluoroheptanoic acid	ng/L	50000	50600	101	70	130	
Perfluorohexanoic acid	ng/L	50000	53000	106	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	47500	104	70	130	
Perfluorononanoic acid	ng/L	50000	49700	99	70	130	
Perfluorooctanoic acid	ng/L	50000	51200	102	70	130	
Perfluorooctane Sulfonate	ng/L	46300	50000	108	70	130	
Perfluoropentanoic acid	ng/L	50000	48100	96	70	130	
Perfluorotetradecanoic acid	ng/L	50000	52800	106	70	130	
Perfluorotridecanoic acid	ng/L	50000	53700	107	70	130	
Perfluoroundecanoic acid	ng/L	50000	46600	93	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	219121351	Instrument ID:	QQQ1
Analysis Date:	01/07/2020 20:47	Lab File ID:	2200107A_55.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674886

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomer sulfonate	ng/L	47500	52000	109	70	130	
8:2 Fluorotelomer sulfonate	ng/L	48000	47100	98	70	130	
NEtFOSAA	ng/L	50000	41300	83	70	130	
NMeFOSAA	ng/L	50000	55500	111	70	130	
Perfluorobutanoic acid	ng/L	50000	47100	94	70	130	
Perfluorobutanesulfonic acid	ng/L	44300	44300	100	70	130	
Perfluorodecanoic acid	ng/L	50000	51000	102	70	130	
Perfluorododecanoic acid	ng/L	50000	52200	104	70	130	
Perfluoroheptanoic acid	ng/L	50000	50300	101	70	130	
Perfluorohexanoic acid	ng/L	50000	51400	103	70	130	
Perfluorohexanesulfonic acid	ng/L	45600	49200	108	70	130	
Perfluorononanoic acid	ng/L	50000	47600	95	70	130	
Perfluorooctanoic acid	ng/L	50000	53100	106	70	130	
Perfluorooctane Sulfonate	ng/L	46300	50200	109	70	130	
Perfluoropentanoic acid	ng/L	50000	48500	97	70	130	
Perfluorotetradecanoic acid	ng/L	50000	51800	104	70	130	
Perfluorotridecanoic acid	ng/L	50000	53100	106	70	130	
Perfluoroundecanoic acid	ng/L	50000	47700	95	70	130	

FORM 7E - ORG

8I

INJECTION INTERNAL STANDARD AREA SUMMARY

Report No:	219121351	Standard ID:	1205 (ICAL Midpoint)
Analyst:	BMH	Instrument ID:	QQQ1
Analysis Date:	01/07/20 11:59	Lab File ID:	2200107A_08.d
Analytical Method:	EPA 537 Modified	Analytical Batch:	674886

	M2PFDA	M2PFHxA	M2PFOA	M4PFOS
	Area	*Area*	*Area*	*Area*
STANDARD	104347	266410	96578	118905

CLIENT SAMPLE ID	*GCAL SAMP ID*		*#*		*#*		*#*		*#*
CS-SW04	21912135138	84428		267537		95781		112786	
ERB-121219SS	21912135143	98212		268942		99023		118626	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219071222 Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
CS-Decon Water	21907122201	107		104		98		59		108		108		105	
MB1943742	1943742	120		107		93		31	*	115		109		107	
LCS1943743	1943743	129		116		103		56		122		120		117	
LCSD1943744	1943744	124		105		97		64		115		109		110	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
CS-Decon Water	21907122201	106		94		93		96		65		101		96	
MB1943742	1943742	108		99		91		82		90		106		95	
LCS1943743	1943743	118		106		99		94		104		116		104	
LCSD1943744	1943744	108		100		99		96		96		106		99	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#
CS-Decon Water	21907122201	99		58		77		83		82	
MB1943742	1943742	98		65		62		80		92	
LCS1943743	1943743	109		71		77		90		94	
LCSD1943744	1943744	105		66		87		89		94	

EIS1: M2 4:2 FTS EIS2: M2 6:2 FTS EIS3: M2 8:2 FTS EIS4: M2PFTeDA

EIS5: M3PFBS EIS6: M3PFHxS EIS7: M4PFHpA EIS8: M5PFHxA

EIS9: M5PFPeA EIS10: M6PFDA EIS11: M7PFUdA EIS12: M8FOSA

EIS13: M8PFOA EIS14: M8PFOS EIS15: M9PFNA EIS16: MPFBA

EIS17: MPFDoA EIS18: d3-NMeFOSAA EIS19: d5-NEtFOSAA

FORM 8E - ORG

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219112207 Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
CASCADE-DECONWATER 11/21	21911220701	128		115		93		69		106		108		100	
MB1985361	1985361	147		125		94		57		89		103		87	
LCS1985362	1985362	147		130		95		90		99		108		94	
LCSD1985363	1985363	143		107		89		88		95		106		91	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
CASCADE-DECONWATER 11/21	21911220701	100		98		99		81		85		82		91	
MB1985361	1985361	90		91		96		80		77		75		82	
LCS1985362	1985362	96		98		102		83		90		81		86	
LCSD1985363	1985363	92		92		95		85		80		78		83	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#	EIS20	#
CASCADE-DECONWATER 11/21	21911220701	79		84		95		77		70		74	
MB1985361	1985361	71		82		101		74		71		70	
LCS1985362	1985362	79		89		109		83		76		69	
LCSD1985363	1985363	76		80		102		79		74		64	

EIS1: M2 4:2 FTS
EIS2: M2 6:2 FTS
EIS3: M2 8:2 FTS
EIS4: M2PFTeDA
EIS5: M3HFPODA
EIS6: M3PFBS
EIS7: M3PFHxS
EIS8: M4PFHpA
EIS9: M5PFHxA
EIS10: M5PFPeA
EIS11: M6PFDA
EIS12: M7PFUdA
EIS13: M8FOSA
EIS14: M8PFOA
EIS15: M8PFOS
EIS16: M9PFNA
EIS17: MPFBA
EIS18: MPFDoA
EIS19: d3-NMeFOSAA
EIS20: d5-NEtFOSAA

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219121351 Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
AOI 3-GW1	21912135101	109		110		96		36	*	106		102		94	
AOI 3-GW1-FD	21912135102	109		102		71		7	*	108		102		96	
AOI 1-SB1-0.5-1	21912135103	118		108		118		100		117		119		109	
AOI 1-SB1-6-8	21912135104	129		117		115		25	*	134		133		122	
AOI 1-SB1-12-14	21912135105	117		111		109		98		115		117		110	
AOI 1-SB2-0.5-1	21912135106	102		105		110		34	*	119		116		107	
ERB-121019CS	21912135107	107		111		94		4	*	110		103		96	
ERB-121119WL	21912135108	118		111		74		1	*	117		107		102	
AOI 1-SB3-0.5-1	21912135109	103		102		108		113		108		105		102	
AOI 1-SB3-1-2	21912135110	106		103		106		73		126		119		112	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
AOI 3-GW1	21912135101	91		90		97		88		89		101		89	
AOI 3-GW1-FD	21912135102	97		96		71		52		63		95		78	
AOI 1-SB1-0.5-1	21912135103	112		108		114		108		118		107		99	
AOI 1-SB1-6-8	21912135104	123		120		105		96		94		119		107	
AOI 1-SB1-12-14	21912135105	110		106		110		103		118		78		101	
AOI 1-SB2-0.5-1	21912135106	110		106		103		98		98		104		94	
ERB-121019CS	21912135107	96		98		98		77		81		98		91	
ERB-121119WL	21912135108	104		104		70		26	*	88		103		79	
AOI 1-SB3-0.5-1	21912135109	89		94		106		112		90		102		88	
AOI 1-SB3-1-2	21912135110	110		113		106		96		110		111		101	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#				
AOI 3-GW1	21912135101	100		86		77		95		95					
AOI 3-GW1-FD	21912135102	87		88		33	*	57		62					
AOI 1-SB1-0.5-1	21912135103	110		104		113		90		97					
AOI 1-SB1-6-8	21912135104	120		117		83		99		87					
AOI 1-SB1-12-14	21912135105	105		102		109		84		83					
AOI 1-SB2-0.5-1	21912135106	109		103		94		83		80					
ERB-121019CS	21912135107	99		93		56		66		77					
ERB-121119WL	21912135108	101		103		12	*	46	*	43	*				
AOI 1-SB3-0.5-1	21912135109	101		91		123		109		95					
AOI 1-SB3-1-2	21912135110	107		107		90		106		94					

EIS1: M2 4:2 FTS EIS2: M2 6:2 FTS EIS3: M2 8:2 FTS EIS4: M2PFTeDA

EIS5: M3PFBS EIS6: M3PFHxS EIS7: M4PFHpA EIS8: M5PFHxA

EIS9: M5PFPeA EIS10: M6PFDA EIS11: M7PFUdA EIS12: M8FOSA

EIS13: M8PFOA EIS14: M8PFOS EIS15: M9PFNA EIS16: MPFBA

EIS17: MPFDoA EIS18: d3-NMeFOSAA EIS19: d5-NEtFOSAA

FORM 8E - ORG

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219121351 Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
ERB-121119HA	21912135111	110		114		94		10	*	110		104		100	
CS-SD05-0-1	21912135112	83		87		89		14	*	109		106		94	
AOI 2-SB1-0.5-1	21912135113	113		105		100		93		120		115		109	
AOI 2-SB1-11-13	21912135114	123		115		104		70		122		122		113	
AOI 2-SB1-21-23	21912135115	108		102		98		83		113		112		102	
AOI 2-SB1-21-23MS	21912135116	124		120		116		90		132		128		117	
AOI 2-SB1-21-23MSD	21912135117	104		99		101		93		110		112		102	
AOI 3-SB1-0.5-1	21912135118	104		98		99		82		116		110		101	
AOI 3-SB1-1-2	21912135119	109		104		96		70		119		114		103	
AOI 3-SB1-1-2-FD	21912135120	111		108		104		51		119		121		105	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
ERB-121119HA	21912135111	102		98		92		84		97		106		90	
CS-SD05-0-1	21912135112	99		94		85		76		67		95		85	
AOI 2-SB1-0.5-1	21912135113	108		108		102		102		123		109		91	
AOI 2-SB1-11-13	21912135114	112		109		108		99		104		115		98	
AOI 2-SB1-21-23	21912135115	103		99		98		109		112		100		90	
AOI 2-SB1-21-23MS	21912135116	116		115		113		102		135		117		109	
AOI 2-SB1-21-23MSD	21912135117	103		99		98		96		113		98		68	
AOI 3-SB1-0.5-1	21912135118	104		101		99		97		103		98		94	
AOI 3-SB1-1-2	21912135119	99		104		98		92		108		101		95	
AOI 3-SB1-1-2-FD	21912135120	105		105		94		91		112		105		101	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#
ERB-121119HA	21912135111	103		98		62		75		81	
CS-SD05-0-1	21912135112	89		92		68		78		84	
AOI 2-SB1-0.5-1	21912135113	105		104		111		100		88	
AOI 2-SB1-11-13	21912135114	103		105		93		101		96	
AOI 2-SB1-21-23	21912135115	100		96		104		98		75	
AOI 2-SB1-21-23MS	21912135116	114		112		107		100		83	
AOI 2-SB1-21-23MSD	21912135117	111		96		97		100		63	
AOI 3-SB1-0.5-1	21912135118	98		96		99		84		85	
AOI 3-SB1-1-2	21912135119	100		99		92		87		81	
AOI 3-SB1-1-2-FD	21912135120	103		103		78		95		75	

EIS1: M2 4:2 FTS EIS2: M2 6:2 FTS EIS3: M2 8:2 FTS EIS4: M2PFTeDA

EIS5: M3PFBS EIS6: M3PFHxS EIS7: M4PFHpA EIS8: M5PFHxA

EIS9: M5PFPeA EIS10: M6PFDA EIS11: M7PFUdA EIS12: M8FOSA

EIS13: M8PFOA EIS14: M8PFOS EIS15: M9PFNA EIS16: MPFBA

EIS17: MPFDoA EIS18: d3-NMeFOSAA EIS19: d5-NEtFOSAA

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219121351 Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
AOI 3-SB2-0.5-1	21912135121	110		107		103		86		117		113		108	
AOI 3-SB2-7-9	21912135122	105		97		99		89		110		108		99	
AOI 3-SB2-15-17	21912135123	98		102		96		88		113		109		101	
AOI 3-GW2	21912135124	111		116		103		36	*	112		107		100	
FRB-121119	21912135125	106		103		88		7	*	103		100		92	
AOI 1-GW3	21912135126	113		114		94		26	*	111		104		98	
AOI 1-GW1	21912135127	104		112		100		27	*	111		104		96	
AOI 1-GW2	21912135128	98		110		110		46	*	105		103		93	
AOI 1-GW2MS	21912135129	97		106		86		13	*	104		98		86	
AOI 1-GW2MSD	21912135130	99		102		87		6	*	106		99		95	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
AOI 3-SB2-0.5-1	21912135121	107		102		100		98		115		102		101	
AOI 3-SB2-7-9	21912135122	98		96		93		96		104		96		98	
AOI 3-SB2-15-17	21912135123	103		99		93		95		103		99		91	
AOI 3-GW2	21912135124	102		98		105		96		102		107		98	
FRB-121119	21912135125	92		93		86		61		87		95		78	
AOI 1-GW3	21912135126	98		100		97		90		93		106		96	
AOI 1-GW1	21912135127	100		94		93		96		93		102		96	
AOI 1-GW2	21912135128	93		94		96		86		98		100		91	
AOI 1-GW2MS	21912135129	90		90		85		75		88		92		89	
AOI 1-GW2MSD	21912135130	93		94		81		67		76		99		83	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#
AOI 3-SB2-0.5-1	21912135121	102		101		93		96		86	
AOI 3-SB2-7-9	21912135122	91		94		90		86		72	
AOI 3-SB2-15-17	21912135123	95		98		95		94		75	
AOI 3-GW2	21912135124	110		86		81		98		102	
FRB-121119	21912135125	94		92		31	*	67		73	
AOI 1-GW3	21912135126	102		85		68		82		103	
AOI 1-GW1	21912135127	97		83		77		84		88	
AOI 1-GW2	21912135128	102		80		82		78		91	
AOI 1-GW2MS	21912135129	96		78		55		68		86	
AOI 1-GW2MSD	21912135130	95		83		33	*	73		66	

EIS1: M2 4:2 FTS EIS2: M2 6:2 FTS EIS3: M2 8:2 FTS EIS4: M2PFTeDA

EIS5: M3PFBS EIS6: M3PFHxS EIS7: M4PFHpA EIS8: M5PFHxA

EIS9: M5PFPeA EIS10: M6PFDA EIS11: M7PFUdA EIS12: M8FOSA

EIS13: M8PFOA EIS14: M8PFOS EIS15: M9PFNA EIS16: MPFBA

EIS17: MPFDoA EIS18: d3-NMeFOSAA EIS19: d5-NEtFOSAA

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219121351 Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
CS-SW05	21912135131	98		100		52		0.20	*	107		99		90	
CS-SW01	21912135132	111		116		76		4	*	113		102		94	
CS-SD01-0-1	21912135133	86		71		24	*	4	*	100		85		79	
CS-SW02	21912135134	108		105		76		4	*	108		105		93	
CS-SD02-0-1	21912135135	78		68		81		7	*	106		105		90	
CS-SW03	21912135136	107		106		97		6	*	108		102		96	
CS-SD03-0-1	21912135137	94		86		78		45	*	98		85		88	
CS-SW04	21912135138	79		83		65		0.80	*	100		93		96	
CS-SD04-0-1	21912135139	87		86		80		13	*	96		88		87	
CS-SD06-0-1	21912135140	91		88		80		78		94		87		88	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
CS-SW05	21912135131	92		92		49	*	23	*	22	*	92		63	
CS-SW01	21912135132	96		98		70		44	*	64		98		81	
CS-SD01-0-1	21912135133	82		81		23	*	12	*	10	*	72		39	*
CS-SW02	21912135134	97		96		70		47	*	66		93		80	
CS-SD02-0-1	21912135135	85		89		74		66		21	*	76		79	
CS-SW03	21912135136	94		96		101		75		95		94		93	
CS-SD03-0-1	21912135137	88		85		71		44	*	51		63		71	
CS-SW04	21912135138	92		93		70		41	*	47	*	93		83	
CS-SD04-0-1	21912135139	84		85		78		79		50		84		78	
CS-SD06-0-1	21912135140	87		87		84		86		88		83		82	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#
CS-SW05	21912135131	80		87		7	*	31	*	21	*
CS-SW01	21912135132	91		85		29	*	56		57	
CS-SD01-0-1	21912135133	49	*	81		8	*	22	*	11	*
CS-SW02	21912135134	93		88		24	*	60		60	
CS-SD02-0-1	21912135135	74		86		45	*	73		73	
CS-SW03	21912135136	102		87		40	*	80		75	
CS-SD03-0-1	21912135137	71		95		52		100		174	*
CS-SW04	21912135138	85		86		15	*	50		40	*
CS-SD04-0-1	21912135139	77		85		55		77		64	
CS-SD06-0-1	21912135140	82		86		85		83		73	

EIS1: M2 4:2 FTS EIS2: M2 6:2 FTS EIS3: M2 8:2 FTS EIS4: M2PFTeDA

EIS5: M3PFBS EIS6: M3PFHxS EIS7: M4PFHpA EIS8: M5PFHxA

EIS9: M5PFPeA EIS10: M6PFDA EIS11: M7PFUdA EIS12: M8FOSA

EIS13: M8PFOA EIS14: M8PFOS EIS15: M9PFNA EIS16: MPFBA

EIS17: MPFDoA EIS18: d3-NMeFOSAA EIS19: d5-NEtFOSAA

FORM 8E - ORG

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219121351 Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
CS-SD07-0-1	21912135141	75		66		66		45	*	104		109		102	
CS-SD08-0-1	21912135142	73		70		47	*	25	*	103		91		83	
ERB-121219SS	21912135143	82		94		85		13	*	108		99		102	
MB1992868	1992868	120		116		113		105		127		121		116	
LCS1992869	1992869	110		110		111		100		115		114		110	
LCSD1992870	1992870	115		110		121		101		118		116		112	
MB1992871	1992871	95		85		84		86		97		85		92	
LCS1992872	1992872	94		94		92		90		101		90		94	
LCSD1992873	1992873	94		92		87		85		97		87		93	
MB1992874	1992874	110		117		105		12	*	111		104		99	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
CS-SD07-0-1	21912135141	86		90		66		56		51		80		70	
CS-SD08-0-1	21912135142	77		86		49	*	37	*	12	*	73		73	
ERB-121219SS	21912135143	101		102		95		88		95		98		99	
MB1992868	1992868	118		114		111		112		125		115		95	
LCS1992869	1992869	112		107		106		114		119		109		101	
LCSD1992870	1992870	109		113		109		113		117		110		105	
MB1992871	1992871	88		88		83		93		66		88		85	
LCS1992872	1992872	89		91		90		101		90		85		84	
LCSD1992873	1992873	87		89		89		82		89		88		84	
MB1992874	1992874	100		104		104		106		103		105		93	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#
CS-SD07-0-1	21912135141	63		84		38	*	73		43	*
CS-SD08-0-1	21912135142	64		83		27	*	50		54	
ERB-121219SS	21912135143	98		97		58		82		78	
MB1992868	1992868	109		111		116		83		92	
LCS1992869	1992869	102		104		115		91		109	
LCSD1992870	1992870	107		107		109		98		97	
MB1992871	1992871	83		90		91		88		92	
LCS1992872	1992872	89		91		90		88		82	
LCSD1992873	1992873	87		88		94		78		81	
MB1992874	1992874	105		102		88		92		98	

EIS1: M2 4:2 FTS EIS2: M2 6:2 FTS EIS3: M2 8:2 FTS EIS4: M2PFTeDA

EIS5: M3PFBS EIS6: M3PFHxS EIS7: M4PFHpA EIS8: M5PFHxA

EIS9: M5PFPeA EIS10: M6PFDA EIS11: M7PFUdA EIS12: M8FOSA

EIS13: M8PFOA EIS14: M8PFOS EIS15: M9PFNA EIS16: MPFBA

EIS17: MPFDoA EIS18: d3-NMeFOSAA EIS19: d5-NEtFOSAA

FORM 8E - ORG

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 219121351 Recovery Limits: 50 - 150

Client Sample ID	GCAL SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
LCS1992875	1992875	111		112		104		11	*	112		106		104	
LCSD1992876	1992876	105		110		96		10	*	109		102		94	

Client Sample ID	GCAL SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
LCS1992875	1992875	101		98		102		89		89		106		87	
LCSD1992876	1992876	93		96		86		78		92		97		86	

Client Sample ID	GCAL SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#				
LCS1992875	1992875	104		100		69		86		85					
LCSD1992876	1992876	101		94		59		75		79					

EIS1: M2 4:2 FTS EIS2: M2 6:2 FTS EIS3: M2 8:2 FTS EIS4: M2PFTeDA

EIS5: M3PFBS EIS6: M3PFHxS EIS7: M4PFHpA EIS8: M5PFHxA

EIS9: M5PFPeA EIS10: M6PFDA EIS11: M7PFUdA EIS12: M8FOSA

EIS13: M8PFOA EIS14: M8PFOS EIS15: M9PFNA EIS16: MPFBA

EIS17: MPFDoA EIS18: d3-NMeFOSAA EIS19: d5-NEtFOSAA

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	219121351	Method Blank ID:	1992871
Matrix:	Solid	Instrument ID:	QQQ1
Sample Amt:	5 g	Lab File ID:	2200102A_26.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/19/19	Analysis Date:	01/02/20 Time: 1544
Prep Batch:	673519	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	GCAL SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1.	LCS1992872	1992872	2200102A_27.d	01/02/20	1555
2.	LCSD1992873	1992873	2200102A_28.d	01/02/20	1606
3.	CS-SD04-0-1	21912135139	2200102A_29.d	01/02/20	1618
4.	CS-SD06-0-1	21912135140	2200102A_30.d	01/02/20	1629
5.	CS-SD07-0-1	21912135141	2200102A_31.d	01/02/20	1640
6.	CS-SD08-0-1	21912135142	2200102A_32.d	01/02/20	1652

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	MB1992871
Collect Date:	NA Time: NA	GCAL Sample ID:	1992871
Matrix:	Solid % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	5 g	Lab File ID:	2200102A_26.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/19/19	Analysis Date:	01/02/20 Time: 1544
Prep Batch:	673519	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: *ug/kg*

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.400	U	0.170	0.400	1.00
39108-34-4	8:2 Fluorotelomer sulfonate	0.400	U	0.260	0.400	1.00
2991-50-6	NEtFOSAA	0.400	U	0.190	0.400	1.00
2355-31-9	NMeFOSAA	0.400	U	0.280	0.400	1.00
375-73-5	Perfluorobutanesulfonic acid	0.400	U	0.120	0.400	1.00
375-22-4	Perfluorobutanoic acid	0.242	J	0.130	0.400	1.00
335-76-2	Perfluorodecanoic acid	0.400	U	0.120	0.400	1.00
307-55-1	Perfluorododecanoic acid	0.400	U	0.200	0.400	1.00
375-85-9	Perfluoroheptanoic acid	0.400	U	0.130	0.400	1.00
355-46-4	Perfluorohexanesulfonic acid	0.400	U	0.140	0.400	1.00
307-24-4	Perfluorohexanoic acid	0.400	U	0.150	0.400	1.00
375-95-1	Perfluorononanoic acid	0.400	U	0.090	0.400	1.00
1763-23-1	Perfluorooctane Sulfonate	0.390	J	0.180	0.400	1.00
335-67-1	Perfluorooctanoic acid	0.400	U	0.150	0.400	1.00
2706-90-3	Perfluoropentanoic acid	0.400	U	0.150	0.400	1.00
376-06-7	Perfluorotetradecanoic acid	0.400	U	0.160	0.400	1.00
72629-94-8	Perfluorotridecanoic acid	0.400	U	0.220	0.400	1.00
2058-94-8	Perfluoroundecanoic acid	0.400	U	0.140	0.400	1.00

FORM I SV-1

3D

SOIL SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 219121351

Prep Method: EPA 537 Mod Prep

Prep Batch: 673519

Analytical Method: EPA 537 Modified

Analytical Batch: 674518

GCAL QC ID: 1992872

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
6:2 Fluorotelomer sulfonate	ug/kg	1.9	0	2.09	110		70 - 130
8:2 Fluorotelomer sulfonate	ug/kg	1.92	0	1.75	91		70 - 130
NEtFOSAA	ug/kg	2	0	1.96	98		70 - 130
NMeFOSAA	ug/kg	2	0	1.92	96		70 - 130
Perfluorobutanesulfonic acid	ug/kg	1.77	0	1.67	94		70 - 130
Perfluorobutanoic acid	ug/kg	2	0	1.87	94		70 - 130
Perfluorodecanoic acid	ug/kg	2	0	2.12	106		70 - 130
Perfluorododecanoic acid	ug/kg	2	0	2	100		70 - 130
Perfluoroheptanoic acid	ug/kg	2	0	1.88	94		70 - 130
Perfluorohexanesulfonic acid	ug/kg	1.82	0	1.96	107		70 - 130
Perfluorohexanoic acid	ug/kg	2	0	1.89	95		70 - 130
Perfluorononanoic acid	ug/kg	2	0	1.94	97		70 - 130
Perfluorooctane Sulfonate	ug/kg	1.85	0	2.06	111		70 - 130
Perfluorooctanoic acid	ug/kg	2	0	1.95	97		70 - 130
Perfluoropentanoic acid	ug/kg	2	0	1.72	86		70 - 130
Perfluorotetradecanoic acid	ug/kg	2	0	1.97	99		70 - 130
Perfluorotridecanoic acid	ug/kg	2	0	2.06	103		70 - 130
Perfluoroundecanoic acid	ug/kg	2	0	1.75	87		70 - 130

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

3D

SOIL SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 219121351

Prep Method: EPA 537 Mod Prep

Prep Batch: 673519

Analytical Method: EPA 537 Modified

Analytical Batch: 674518

GCAL QC ID: 1992873

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
6:2 Fluorotelomer sulfonate	ug/kg	1.9	2.06	109		1		70 - 130	0 - 30
8:2 Fluorotelomer sulfonate	ug/kg	1.92	1.78	93		1		70 - 130	0 - 30
NEtFOSAA	ug/kg	2	1.89	95		3		70 - 130	0 - 30
NMeFOSAA	ug/kg	2	2.32	116		19		70 - 130	0 - 30
Perfluorobutanesulfonic acid	ug/kg	1.77	1.68	95		1		70 - 130	0 - 30
Perfluorobutanoic acid	ug/kg	2	2	100		7		70 - 130	0 - 30
Perfluorodecanoic acid	ug/kg	2	2.02	101		5		70 - 130	0 - 30
Perfluorododecanoic acid	ug/kg	2	1.9	95		5		70 - 130	0 - 30
Perfluoroheptanoic acid	ug/kg	2	1.86	93		1		70 - 130	0 - 30
Perfluorohexanesulfonic acid	ug/kg	1.82	1.95	107		.6		70 - 130	0 - 30
Perfluorohexanoic acid	ug/kg	2	1.88	94		.8		70 - 130	0 - 30
Perfluorononanoic acid	ug/kg	2	1.78	89		9		70 - 130	0 - 30
Perfluorooctane Sulfonate	ug/kg	1.85	2.03	109		2		70 - 130	0 - 30
Perfluorooctanoic acid	ug/kg	2	1.89	95		3		70 - 130	0 - 30
Perfluoropentanoic acid	ug/kg	2	1.73	87		.6		70 - 130	0 - 30
Perfluorotetradecanoic acid	ug/kg	2	1.96	98		.9		70 - 130	0 - 30
Perfluorotridecanoic acid	ug/kg	2	2.06	103		.2		70 - 130	0 - 30
Perfluoroundecanoic acid	ug/kg	2	2.04	102		15		70 - 130	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	219121351	Method Blank ID:	1992868
Matrix:	Solid	Instrument ID:	QQQ1
Sample Amt:	5 g	Lab File ID:	2200102A_45.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 1919
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	GCAL SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1.	LCS1992869	1992869	2200102A_46.d	01/02/20	1930
2.	LCSD1992870	1992870	2200102A_47.d	01/02/20	1941
3.	AOI 1-SB1-0.5-1	21912135103	2200102A_48.d	01/02/20	1953
4.	AOI 1-SB1-6-8	21912135104	2200102A_49.d	01/02/20	2004
5.	AOI 1-SB1-12-14	21912135105	2200102A_50.d	01/02/20	2015
6.	AOI 1-SB2-0.5-1	21912135106	2200102A_51.d	01/02/20	2027
7.	AOI 1-SB3-0.5-1	21912135109	2200102A_52.d	01/02/20	2038
8.	AOI 1-SB3-1-2	21912135110	2200102A_53.d	01/02/20	2049
9.	CS-SD05-0-1	21912135112	2200102A_54.d	01/02/20	2101
10.	AOI 2-SB1-0.5-1	21912135113	2200102A_55.d	01/02/20	2112
11.	AOI 2-SB1-11-13	21912135114	2200102A_57.d	01/02/20	2135
12.	AOI 2-SB1-21-23	21912135115	2200102A_58.d	01/02/20	2146
13.	AOI 2-SB1-21-23MS	21912135116	2200102A_59.d	01/02/20	2157
14.	AOI 2-SB1-21-23MSD	21912135117	2200102A_60.d	01/02/20	2209
15.	AOI 3-SB1-0.5-1	21912135118	2200102A_61.d	01/02/20	2220
16.	AOI 3-SB1-1-2	21912135119	2200102A_62.d	01/02/20	2231
17.	AOI 3-SB1-1-2-FD	21912135120	2200102A_63.d	01/02/20	2243
18.	AOI 3-SB2-0.5-1	21912135121	2200102A_64.d	01/02/20	2254
19.	AOI 3-SB2-7-9	21912135122	2200102A_65.d	01/02/20	2306
20.	AOI 3-SB2-15-17	21912135123	2200102A_66.d	01/02/20	2317
21.	CS-SD01-0-1	21912135133	2200102A_67.d	01/02/20	2328
22.	CS-SD02-0-1	21912135135	2200102A_68.d	01/02/20	2340
23.	CS-SD03-0-1	21912135137	2200102A_70.d	01/03/20	0002

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	MB1992868
Collect Date:	NA Time: NA	GCAL Sample ID:	1992868
Matrix:	Solid % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	5 g	Lab File ID:	2200102A_45.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/18/19	Analysis Date:	01/02/20 Time: 1919
Prep Batch:	673518	Analytical Batch:	674518
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	0.400	U	0.170	0.400	1.00
39108-34-4	8:2 Fluorotelomer sulfonate	0.400	U	0.260	0.400	1.00
2991-50-6	NEtFOSAA	0.400	U	0.190	0.400	1.00
2355-31-9	NMeFOSAA	0.400	U	0.280	0.400	1.00
375-73-5	Perfluorobutanesulfonic acid	0.400	U	0.120	0.400	1.00
375-22-4	Perfluorobutanoic acid	0.400	U	0.130	0.400	1.00
335-76-2	Perfluorodecanoic acid	0.400	U	0.120	0.400	1.00
307-55-1	Perfluorododecanoic acid	0.400	U	0.200	0.400	1.00
375-85-9	Perfluoroheptanoic acid	0.400	U	0.130	0.400	1.00
355-46-4	Perfluorohexanesulfonic acid	0.400	U	0.140	0.400	1.00
307-24-4	Perfluorohexanoic acid	0.400	U	0.150	0.400	1.00
375-95-1	Perfluorononanoic acid	0.400	U	0.090	0.400	1.00
1763-23-1	Perfluorooctane Sulfonate	0.400	U	0.180	0.400	1.00
335-67-1	Perfluorooctanoic acid	0.400	U	0.150	0.400	1.00
2706-90-3	Perfluoropentanoic acid	0.400	U	0.150	0.400	1.00
376-06-7	Perfluorotetradecanoic acid	0.400	U	0.160	0.400	1.00
72629-94-8	Perfluorotridecanoic acid	0.400	U	0.220	0.400	1.00
2058-94-8	Perfluoroundecanoic acid	0.400	U	0.140	0.400	1.00

FORM I SV-1

3D

SOIL SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 219121351

Prep Method: EPA 537 Mod Prep

Prep Batch: 673518

Analytical Method: EPA 537 Modified

Analytical Batch: 674518

GCAL QC ID: 1992869

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
6:2 Fluorotelomer sulfonate	ug/kg	1.9	0	1.83	96		70 - 130
8:2 Fluorotelomer sulfonate	ug/kg	1.92	0	1.64	85		70 - 130
NEtFOSAA	ug/kg	2	0	1.86	93		70 - 130
NMeFOSAA	ug/kg	2	0	2.35	118		70 - 130
Perfluorobutanesulfonic acid	ug/kg	1.77	0	1.56	88		70 - 130
Perfluorobutanoic acid	ug/kg	2	0	1.73	86		70 - 130
Perfluorodecanoic acid	ug/kg	2	0	2.01	100		70 - 130
Perfluorododecanoic acid	ug/kg	2	0	1.72	86		70 - 130
Perfluoroheptanoic acid	ug/kg	2	0	1.8	90		70 - 130
Perfluorohexanesulfonic acid	ug/kg	1.82	0	1.72	94		70 - 130
Perfluorohexanoic acid	ug/kg	2	0	1.7	85		70 - 130
Perfluorononanoic acid	ug/kg	2	0	1.81	91		70 - 130
Perfluorooctane Sulfonate	ug/kg	1.85	0	1.89	102		70 - 130
Perfluorooctanoic acid	ug/kg	2	0	1.67	84		70 - 130
Perfluoropentanoic acid	ug/kg	2	0	1.61	81		70 - 130
Perfluorotetradecanoic acid	ug/kg	2	0	1.9	95		70 - 130
Perfluorotridecanoic acid	ug/kg	2	0	2.01	100		70 - 130
Perfluoroundecanoic acid	ug/kg	2	0	1.53	76		70 - 130

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

3D

SOIL SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 219121351

Prep Method: EPA 537 Mod Prep

Prep Batch: 673518

Analytical Method: EPA 537 Modified

Analytical Batch: 674518

GCAL QC ID: 1992870

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*RPD*
6:2 Fluorotelomer sulfonate	ug/kg	1.9	1.91	100		4		70 - 130	0 - 30
8:2 Fluorotelomer sulfonate	ug/kg	1.92	1.6	83		3		70 - 130	0 - 30
NEtFOSAA	ug/kg	2	2.14	107		14		70 - 130	0 - 30
NMeFOSAA	ug/kg	2	2.34	117		6		70 - 130	0 - 30
Perfluorobutanesulfonic acid	ug/kg	1.77	1.59	90		2		70 - 130	0 - 30
Perfluorobutanoic acid	ug/kg	2	1.78	89		3		70 - 130	0 - 30
Perfluorodecanoic acid	ug/kg	2	1.88	94		7		70 - 130	0 - 30
Perfluorododecanoic acid	ug/kg	2	1.87	93		8		70 - 130	0 - 30
Perfluoroheptanoic acid	ug/kg	2	1.87	93		4		70 - 130	0 - 30
Perfluorohexanesulfonic acid	ug/kg	1.82	1.73	95		6		70 - 130	0 - 30
Perfluorohexanoic acid	ug/kg	2	1.82	91		7		70 - 130	0 - 30
Perfluorononanoic acid	ug/kg	2	1.82	91		6		70 - 130	0 - 30
Perfluorooctane Sulfonate	ug/kg	1.85	1.93	104		2		70 - 130	0 - 30
Perfluorooctanoic acid	ug/kg	2	1.82	91		8		70 - 130	0 - 30
Perfluoropentanoic acid	ug/kg	2	1.66	83		3		70 - 130	0 - 30
Perfluorotetradecanoic acid	ug/kg	2	2	100		5		70 - 130	0 - 30
Perfluorotridecanoic acid	ug/kg	2	2.08	104		3		70 - 130	0 - 30
Perfluoroundecanoic acid	ug/kg	2	1.69	84		10		70 - 130	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

3D

SOIL SEMIVOLATILE MS/MSD RECOVERY

Report No:	219121351	Parent Sample ID:	AOI 2-SB1-21-23
Prep Method:	EPA 537 Mod Prep	Prep Batch:	673518
Analytical Method:	EPA 537 Modified	Analytical Batch:	674518

GCAL QC ID: 21912135116

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*MS RESULT*	*MS % REC*	*#*	*QC LIMITS*
6:2 Fluorotelomer sulfonate	ug/kg	2.01	.01	2.19	108		70 - 130
8:2 Fluorotelomer sulfonate	ug/kg	2.04	0	1.93	95		70 - 130
NEtFOSAA	ug/kg	2.12	0	2.91	137	*	70 - 130
NMeFOSAA	ug/kg	2.12	0	2.75	130		70 - 130
Perfluorobutanesulfonic acid	ug/kg	1.88	.024	1.76	93		70 - 130
Perfluorobutanoic acid	ug/kg	2.12	.347	2.23	89		70 - 130
Perfluorodecanoic acid	ug/kg	2.12	0	2.27	107		70 - 130
Perfluorododecanoic acid	ug/kg	2.12	0	2.25	106		70 - 130
Perfluoroheptanoic acid	ug/kg	2.12	.023	2.12	99		70 - 130
Perfluorohexanesulfonic acid	ug/kg	1.93	.061	2	100		70 - 130
Perfluorohexanoic acid	ug/kg	2.12	.066	2.08	95		70 - 130
Perfluorononanoic acid	ug/kg	2.12	0	2.07	98		70 - 130
Perfluorooctane Sulfonate	ug/kg	1.96	.051	2.21	110		70 - 130
Perfluorooctanoic acid	ug/kg	2.12	0	2.03	96		70 - 130
Perfluoropentanoic acid	ug/kg	2.12	.06	2.04	93		70 - 130
Perfluorotetradecanoic acid	ug/kg	2.12	.024	2.3	108		70 - 130
Perfluorotridecanoic acid	ug/kg	2.12	0	2.59	122		70 - 130
Perfluoroundecanoic acid	ug/kg	2.12	0	2.2	104		70 - 130

RPD : 1 out of 18 outside limits

Spike Recovery: 3 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

3D

SOIL SEMIVOLATILE MS/MSD RECOVERY

Report No:	219121351	Parent Sample ID:	AOI 2-SB1-21-23
Prep Method:	EPA 537 Mod Prep	Prep Batch:	673518
Analytical Method:	EPA 537 Modified	Analytical Batch:	674518

GCAL QC ID: 21912135117

ANALYTE	UNITS	SPIKE ADDED	MSD RESULT	MSD % REC	#	% RPD	#	QC LIMITS REC	QC LIMITS RPD
6:2 Fluorotelomer sulfonate	ug/kg	2.2	2.35	106		7		70 - 130	0 - 30
8:2 Fluorotelomer sulfonate	ug/kg	2.22	2.03	91		5		70 - 130	0 - 30
NEtFOSAA	ug/kg	2.31	3.48	150	*	18		70 - 130	0 - 30
NMeFOSAA	ug/kg	2.31	2.48	107		10		70 - 130	0 - 30
Perfluorobutanesulfonic acid	ug/kg	2.05	1.89	91		7		70 - 130	0 - 30
Perfluorobutanoic acid	ug/kg	2.31	2.31	85		4		70 - 130	0 - 30
Perfluorodecanoic acid	ug/kg	2.31	2.41	104		6		70 - 130	0 - 30
Perfluorododecanoic acid	ug/kg	2.31	2.35	101		4		70 - 130	0 - 30
Perfluoroheptanoic acid	ug/kg	2.31	2.28	97		7		70 - 130	0 - 30
Perfluorohexanesulfonic acid	ug/kg	2.11	2.05	94		2		70 - 130	0 - 30
Perfluorohexanoic acid	ug/kg	2.31	2.09	88		.6		70 - 130	0 - 30
Perfluorononanoic acid	ug/kg	2.31	2.01	87		3		70 - 130	0 - 30
Perfluorooctane Sulfonate	ug/kg	2.14	3.18	146	*	36	*	70 - 130	0 - 30
Perfluorooctanoic acid	ug/kg	2.31	2.23	96		10		70 - 130	0 - 30
Perfluoropentanoic acid	ug/kg	2.31	2.03	85		.7		70 - 130	0 - 30
Perfluorotetradecanoic acid	ug/kg	2.31	2.33	99		1		70 - 130	0 - 30
Perfluorotridecanoic acid	ug/kg	2.31	2.51	108		3		70 - 130	0 - 30
Perfluoroundecanoic acid	ug/kg	2.31	2.05	89		7		70 - 130	0 - 30

RPD : 1 out of 18 outside limits

Spike Recovery: 3 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	219121351	Method Blank ID:	1992874
Matrix:	Water	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200103B_63.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/04/20 Time: 0247
Prep Batch:	673520	Analytical Batch:	674727
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	GCAL SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1.	LCS1992875	1992875	2200103B_64.d	01/04/20	0259
2.	LCSD1992876	1992876	2200103B_65.d	01/04/20	0310
3.	FRB-121119	21912135125	2200103B_66.d	01/04/20	0321
4.	AOI 3-GW1	21912135101	2200103B_67.d	01/04/20	0333
5.	AOI 3-GW1-FD	21912135102	2200103B_68.d	01/04/20	0344
6.	ERB-121019CS	21912135107	2200103B_69.d	01/04/20	0355
7.	ERB-121119WL	21912135108	2200103B_70.d	01/04/20	0407
8.	ERB-121119HA	21912135111	2200103B_71.d	01/04/20	0418
9.	AOI 3-GW2	21912135124	2200103B_73.d	01/04/20	0441
10.	AOI 1-GW3	21912135126	2200103B_74.d	01/04/20	0452
11.	AOI 1-GW1	21912135127	2200103B_75.d	01/04/20	0504
12.	AOI 1-GW2	21912135128	2200103B_76.d	01/04/20	0515
13.	AOI 1-GW2MS	21912135129	2200103B_77.d	01/04/20	0526
14.	AOI 1-GW2MSD	21912135130	2200103B_78.d	01/04/20	0538
15.	CS-SW05	21912135131	2200103B_79.d	01/04/20	0549
16.	CS-SW01	21912135132	2200103B_80.d	01/04/20	0601
17.	CS-SW02	21912135134	2200103B_81.d	01/04/20	0612
18.	CS-SW03	21912135136	2200103B_82.d	01/04/20	0623
19.	CS-SW04	21912135138	2200107A_41.d	01/07/20	1809
20.	ERB-121219SS	21912135143	2200107A_42.d	01/07/20	1820

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219121351	Client Sample ID:	MB1992874
Collect Date:	NA Time: NA	GCAL Sample ID:	1992874
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2200103B_63.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	12/16/19	Analysis Date:	01/04/20 Time: 0247
Prep Batch:	673520	Analytical Batch:	674727
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	4.00	U	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 219121351

Prep Method: EPA 537 Mod Prep

Prep Batch: 673520

Analytical Method: EPA 537 Modified

Analytical Batch: 674727

GCAL QC ID: 1992875

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
6:2 Fluorotelomer sulfonate	ng/L	76	0	68.8	91		70 - 130
8:2 Fluorotelomer sulfonate	ng/L	76.8	0	73.3	95		70 - 130
NEtFOSAA	ng/L	80	0	63.8	80		70 - 130
NMeFOSAA	ng/L	80	0	76.4	95		70 - 130
Perfluorobutanesulfonic acid	ng/L	70.8	0	56.1	79		70 - 130
Perfluorobutanoic acid	ng/L	80	0	55.6	70		70 - 130
Perfluorodecanoic acid	ng/L	80	0	66.3	83		70 - 130
Perfluorododecanoic acid	ng/L	80	0	64.8	81		70 - 130
Perfluoroheptanoic acid	ng/L	80	0	62.6	78		70 - 130
Perfluorohexanesulfonic acid	ng/L	73	0	63.5	87		70 - 130
Perfluorohexanoic acid	ng/L	80	0	67	84		70 - 130
Perfluorononanoic acid	ng/L	80	0	65.6	82		70 - 130
Perfluorooctane Sulfonate	ng/L	74	0	79.3	107		70 - 130
Perfluorooctanoic acid	ng/L	80	0	63.6	79		70 - 130
Perfluoropentanoic acid	ng/L	80	0	61.7	77		70 - 130
Perfluorotetradecanoic acid	ng/L	80	0	62.7	78		70 - 130
Perfluorotridecanoic acid	ng/L	80	0	255	319	*	70 - 130
Perfluoroundecanoic acid	ng/L	80	0	68.6	86		70 - 130

RPD : 0 out of 18 outside limits

Spike Recovery: 2 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 219121351

Prep Method: EPA 537 Mod Prep

Prep Batch: 673520

Analytical Method: EPA 537 Modified

Analytical Batch: 674727

GCAL QC ID: 1992876

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
6:2 Fluorotelomer sulfonate	ng/L	76	71.4	94		4		70 - 130	0 - 30
8:2 Fluorotelomer sulfonate	ng/L	76.8	75.7	99		3		70 - 130	0 - 30
NEtFOSAA	ng/L	80	68.1	85		7		70 - 130	0 - 30
NMeFOSAA	ng/L	80	78.4	98		3		70 - 130	0 - 30
Perfluorobutanesulfonic acid	ng/L	70.8	59.4	84		6		70 - 130	0 - 30
Perfluorobutanoic acid	ng/L	80	59.6	75		7		70 - 130	0 - 30
Perfluorodecanoic acid	ng/L	80	74.8	93		12		70 - 130	0 - 30
Perfluorododecanoic acid	ng/L	80	70.3	88		8		70 - 130	0 - 30
Perfluoroheptanoic acid	ng/L	80	68.5	86		9		70 - 130	0 - 30
Perfluorohexanesulfonic acid	ng/L	73	65.4	90		3		70 - 130	0 - 30
Perfluorohexanoic acid	ng/L	80	76	95		13		70 - 130	0 - 30
Perfluorononanoic acid	ng/L	80	66	83		.6		70 - 130	0 - 30
Perfluorooctane Sulfonate	ng/L	74	73.7	100		7		70 - 130	0 - 30
Perfluorooctanoic acid	ng/L	80	72.4	91		13		70 - 130	0 - 30
Perfluoropentanoic acid	ng/L	80	63.1	79		2		70 - 130	0 - 30
Perfluorotetradecanoic acid	ng/L	80	76.1	95		19		70 - 130	0 - 30
Perfluorotridecanoic acid	ng/L	80	305	381	*	18		70 - 130	0 - 30
Perfluoroundecanoic acid	ng/L	80	64.9	81		6		70 - 130	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 2 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3C

WATER SEMIVOLATILE MS/MSD RECOVERY

Report No:	219121351	Parent Sample ID:	AOI 1-GW2
Prep Method:	EPA 537 Mod Prep	Prep Batch:	673520
Analytical Method:	EPA 537 Modified	Analytical Batch:	674727

GCAL QC ID: 21912135129

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*MS RESULT*	*MS % REC*	*#*	*QC LIMITS*
6:2 Fluorotelomer sulfonate	ng/L	76	.602	72.3	94		70 - 130
8:2 Fluorotelomer sulfonate	ng/L	76.8	.173	85.1	111		70 - 130
NEtFOSAA	ng/L	80	.203	71.2	89		70 - 130
NMeFOSAA	ng/L	80	.114	92	115		70 - 130
Perfluorobutanesulfonic acid	ng/L	70.8	.824	62	86		70 - 130
Perfluorobutanoic acid	ng/L	80	4.73	69.3	81		70 - 130
Perfluorodecanoic acid	ng/L	80	1.54	75.4	92		70 - 130
Perfluorododecanoic acid	ng/L	80	.278	79.2	99		70 - 130
Perfluoroheptanoic acid	ng/L	80	3.5	75.2	90		70 - 130
Perfluorohexanesulfonic acid	ng/L	73	3.45	70.8	92		70 - 130
Perfluorohexanoic acid	ng/L	80	3.42	75.2	90		70 - 130
Perfluorononanoic acid	ng/L	80	4.23	72.7	86		70 - 130
Perfluorooctane Sulfonate	ng/L	74	13.2	79.7	90		70 - 130
Perfluorooctanoic acid	ng/L	80	24	85.1	76		70 - 130
Perfluoropentanoic acid	ng/L	80	4.16	71	84		70 - 130
Perfluorotetradecanoic acid	ng/L	80	0	77.3	97		70 - 130
Perfluorotridecanoic acid	ng/L	80	.692	182	227	*	70 - 130
Perfluoroundecanoic acid	ng/L	80	.295	75.1	94		70 - 130

RPD : 1 out of 18 outside limits

Spike Recovery: 4 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3C

WATER SEMIVOLATILE MS/MSD RECOVERY

Report No:	219121351	Parent Sample ID:	AOI 1-GW2
Prep Method:	EPA 537 Mod Prep	Prep Batch:	673520
Analytical Method:	EPA 537 Modified	Analytical Batch:	674727

GCAL QC ID: 21912135130

ANALYTE	*UNITS*	*SPIKE ADDED*	*MSD RESULT*	*MSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
6:2 Fluorotelomer sulfonate	ng/L	76	76.8	100		6		70 - 130	0 - 30
8:2 Fluorotelomer sulfonate	ng/L	76.8	70.8	92		18		70 - 130	0 - 30
NEtFOSAA	ng/L	80	69.1	86		3		70 - 130	0 - 30
NMeFOSAA	ng/L	80	69.9	87		27		70 - 130	0 - 30
Perfluorobutanesulfonic acid	ng/L	70.8	58.4	81		6		70 - 130	0 - 30
Perfluorobutanoic acid	ng/L	80	61.4	71		12		70 - 130	0 - 30
Perfluorodecanoic acid	ng/L	80	70.2	86		7		70 - 130	0 - 30
Perfluorododecanoic acid	ng/L	80	76.8	96		3		70 - 130	0 - 30
Perfluoroheptanoic acid	ng/L	80	65.2	77		14		70 - 130	0 - 30
Perfluorohexanesulfonic acid	ng/L	73	71.2	93		.5		70 - 130	0 - 30
Perfluorohexanoic acid	ng/L	80	72.2	86		4		70 - 130	0 - 30
Perfluorononanoic acid	ng/L	80	63.5	74		14		70 - 130	0 - 30
Perfluorooctane Sulfonate	ng/L	74	114	136	*	35	*	70 - 130	0 - 30
Perfluorooctanoic acid	ng/L	80	71.5	59	*	17		70 - 130	0 - 30
Perfluoropentanoic acid	ng/L	80	64.7	76		9		70 - 130	0 - 30
Perfluorotetradecanoic acid	ng/L	80	86.5	108		11		70 - 130	0 - 30
Perfluorotridecanoic acid	ng/L	80	203	253	*	11		70 - 130	0 - 30
Perfluoroundecanoic acid	ng/L	80	62.8	78		18		70 - 130	0 - 30

RPD : 1 out of 18 outside limits

Spike Recovery: 4 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	219071222	Method Blank ID:	1943742
Matrix:	Water	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2190717A_57.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	07/16/19	Analysis Date:	07/18/19 Time: 0545
Prep Batch:	663752	Analytical Batch:	663954
Prep Method:	537 Mod Prep	Analytical Method:	EPA 537 Modified

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1.	LCS1943743	1943743	2190717A_58.d	07/18/19	0556
2.	LCSD1943744	1943744	2190717A_59.d	07/18/19	0608
3.	CS-Decon Water	21907122201	2190717A_62.d	07/18/19	0642

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219071222	Client Sample ID:	MB1943742
Collect Date:	NA Time: NA	GCAL Sample ID:	1943742
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2190717A_57.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	07/16/19	Analysis Date:	07/18/19 Time: 0545
Prep Batch:	663752	Analytical Batch:	663954
Prep Method:	537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
757124-72-4	4:2 FTS	4.00	U	1.52	4.00	10.0
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-92-8	Perfluoro-1-heptanesulfonate	4.00	U	2.01	4.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-77-3	Perfluorodecane Sulfonate	4.00	U	2.17	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
754-91-6	Perfluorooctane Sulfonamide	4.00	U	2.63	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	4.00	U	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0
474511-07-4	PFNS	4.00	U	2.11	4.00	10.0
2706-91-4	PFPeS	4.00	U	2.07	4.00	10.0

FORM I SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 219071222

Prep Method: 537 Mod Prep | Prep Batch: 663752

Analytical Method: EPA 537 Modified | Analytical Batch: 663954

GCAL QC ID: 1943743

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	*#*	*QC LIMITS*
4:2 FTS	ng/L	74.8	0	65.6	88		70 - 130
6:2 Fluorotelomer sulfonate	ng/L	76	0	66.3	87		70 - 130
8:2 Fluorotelomer sulfonate	ng/L	76.8	0	74.8	97		70 - 130
NEtFOSAA	ng/L	80	0	68.5	86		70 - 130
NMeFOSAA	ng/L	80	0	72.2	90		70 - 130
PFNS	ng/L	76.8	0	59.2	77		70 - 130
PFPeS	ng/L	75.2	0	66.1	88		70 - 130
Perfluoro-1-heptanesulfonate	ng/L	76	0	64.5	85		70 - 130
Perfluorobutanesulfonic acid	ng/L	70.8	0	61.1	86		70 - 130
Perfluorobutanoic acid	ng/L	80	0	66.1	83		70 - 130
Perfluorodecane Sulfonate	ng/L	77.2	0	61.4	80		70 - 130
Perfluorodecanoic acid	ng/L	80	0	67.8	85		70 - 130
Perfluorododecanoic acid	ng/L	80	0	79.1	99		70 - 130
Perfluoroheptanoic acid	ng/L	80	0	69.1	86		70 - 130
Perfluorohexanesulfonic acid	ng/L	73	0	60.5	83		70 - 130
Perfluorohexanoic acid	ng/L	80	0	66.8	83		70 - 130
Perfluorononanoic acid	ng/L	80	0	70.4	88		70 - 130
Perfluorooctane Sulfonamide	ng/L	80	0	68.2	85		70 - 130
Perfluorooctane Sulfonate	ng/L	74	0	55.9	75		70 - 130
Perfluorooctanoic acid	ng/L	80	0	67.6	84		70 - 130
Perfluoropentanoic acid	ng/L	80	0	68.7	86		70 - 130
Perfluorotetradecanoic acid	ng/L	80	0	79.9	100		70 - 130
Perfluorotridecanoic acid	ng/L	80	0	93.4	117		70 - 130
Perfluoroundecanoic acid	ng/L	80	0	67.9	85		70 - 130

RPD : 0 out of 24 outside limits

Spike Recovery: 0 out of 48 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 219071222

Prep Method: 537 Mod Prep | Prep Batch: 663752

Analytical Method: EPA 537 Modified | Analytical Batch: 663954

GCAL QC ID: 1943744

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
4:2 FTS	ng/L	74.8	67.2	90		2		70 - 130	0 - 30
6:2 Fluorotelomer sulfonate	ng/L	76	76.7	101		14		70 - 130	0 - 30
8:2 Fluorotelomer sulfonate	ng/L	76.8	81.6	106		9		70 - 130	0 - 30
NEtFOSAA	ng/L	80	73.2	92		7		70 - 130	0 - 30
NMeFOSAA	ng/L	80	77.1	96		7		70 - 130	0 - 30
PFNS	ng/L	76.8	62.8	82		6		70 - 130	0 - 30
PFPeS	ng/L	75.2	69.4	92		5		70 - 130	0 - 30
Perfluoro-1-heptanesulfonate	ng/L	76	69.3	91		7		70 - 130	0 - 30
Perfluorobutanesulfonic acid	ng/L	70.8	63.8	90		4		70 - 130	0 - 30
Perfluorobutanoic acid	ng/L	80	68.9	86		4		70 - 130	0 - 30
Perfluorodecane Sulfonate	ng/L	77.2	65	84		6		70 - 130	0 - 30
Perfluorodecanoic acid	ng/L	80	71.3	89		5		70 - 130	0 - 30
Perfluorododecanoic acid	ng/L	80	74.2	93		6		70 - 130	0 - 30
Perfluoroheptanoic acid	ng/L	80	71	89		3		70 - 130	0 - 30
Perfluorohexanesulfonic acid	ng/L	73	63.8	87		5		70 - 130	0 - 30
Perfluorohexanoic acid	ng/L	80	71.7	90		7		70 - 130	0 - 30
Perfluorononanoic acid	ng/L	80	69.5	87		1		70 - 130	0 - 30
Perfluorooctane Sulfonamide	ng/L	80	72.8	91		7		70 - 130	0 - 30
Perfluorooctane Sulfonate	ng/L	74	57	77		2		70 - 130	0 - 30
Perfluorooctanoic acid	ng/L	80	71.1	89		5		70 - 130	0 - 30
Perfluoropentanoic acid	ng/L	80	63.9	80		7		70 - 130	0 - 30
Perfluorotetradecanoic acid	ng/L	80	80.5	101		.8		70 - 130	0 - 30
Perfluorotridecanoic acid	ng/L	80	93.6	117		.2		70 - 130	0 - 30
Perfluoroundecanoic acid	ng/L	80	69.2	86		2		70 - 130	0 - 30

RPD : 0 out of 24 outside limits

Spike Recovery: 0 out of 48 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	219112207	Method Blank ID:	1985361
Matrix:	Water	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2191130A_18.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	11/24/19	Analysis Date:	11/30/19 Time: 1337
Prep Batch:	671951	Analytical Batch:	672387
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	GCAL SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1.	LCS1985362	1985362	2191130A_19.d	11/30/19	1349
2.	LCSD1985363	1985363	2191130A_20.d	11/30/19	1400
3.	CASCADE-DECONWATER 11/21	21911220701	2191130A_42.d	11/30/19	1810

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	219112207	Client Sample ID:	MB1985361
Collect Date:	NA Time: NA	GCAL Sample ID:	1985361
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ1
Sample Amt:	125 mL	Lab File ID:	2191130A_18.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: BMH
Prep Date:	11/24/19	Analysis Date:	11/30/19 Time: 1337
Prep Batch:	671951	Analytical Batch:	672387
Prep Method:	EPA 537 Mod Prep	Analytical Method:	EPA 537 Modified

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomer sulfonate	4.00	U	1.79	4.00	10.0
39108-34-4	8:2 Fluorotelomer sulfonate	4.00	U	1.63	4.00	10.0
2991-50-6	NEtFOSAA	8.00	U	5.38	8.00	10.0
2355-31-9	NMeFOSAA	8.00	U	4.60	8.00	10.0
375-73-5	Perfluorobutanesulfonic acid	4.00	U	1.47	4.00	10.0
375-22-4	Perfluorobutanoic acid	4.00	U	2.13	4.00	10.0
335-76-2	Perfluorodecanoic acid	4.00	U	1.65	4.00	10.0
307-55-1	Perfluorododecanoic acid	4.00	U	2.45	4.00	10.0
375-85-9	Perfluoroheptanoic acid	4.00	U	1.85	4.00	10.0
355-46-4	Perfluorohexanesulfonic acid	4.00	U	1.64	4.00	10.0
307-24-4	Perfluorohexanoic acid	4.00	U	1.94	4.00	10.0
375-95-1	Perfluorononanoic acid	4.00	U	1.68	4.00	10.0
1763-23-1	Perfluorooctane Sulfonate	4.00	U	1.70	4.00	10.0
335-67-1	Perfluorooctanoic acid	4.00	U	1.80	4.00	10.0
2706-90-3	Perfluoropentanoic acid	4.00	U	2.35	4.00	10.0
376-06-7	Perfluorotetradecanoic acid	4.00	U	2.76	4.00	10.0
72629-94-8	Perfluorotridecanoic acid	4.00	U	2.56	4.00	10.0
2058-94-8	Perfluoroundecanoic acid	4.00	U	1.86	4.00	10.0

FORM I SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 219112207

Prep Method: EPA 537 Mod Prep Prep Batch: 671951

Analytical Method: EPA 537 Modified Analytical Batch: 672387

GCAL QC ID: 1985362

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	*#*	*QC LIMITS*
6:2 Fluorotelomer sulfonate	ng/L	76	0	88.7	117		70 - 130
8:2 Fluorotelomer sulfonate	ng/L	76.8	0	109	142	*	70 - 130
NEtFOSAA	ng/L	80	0	82.9	104		70 - 130
NMeFOSAA	ng/L	80	0	74.9	94		70 - 130
Perfluorobutanesulfonic acid	ng/L	70.8	0	71.1	100		70 - 130
Perfluorobutanoic acid	ng/L	80	0	78.3	98		70 - 130
Perfluorodecanoic acid	ng/L	80	0	85.9	107		70 - 130
Perfluorododecanoic acid	ng/L	80	0	86	108		70 - 130
Perfluoroheptanoic acid	ng/L	80	0	79.5	99		70 - 130
Perfluorohexanesulfonic acid	ng/L	73	0	85.8	118		70 - 130
Perfluorohexanoic acid	ng/L	80	0	80.1	100		70 - 130
Perfluorononanoic acid	ng/L	80	0	81.7	102		70 - 130
Perfluorooctane Sulfonate	ng/L	74	0	91.1	123		70 - 130
Perfluorooctanoic acid	ng/L	80	0	87.4	109		70 - 130
Perfluoropentanoic acid	ng/L	80	0	72.6	91		70 - 130
Perfluorotetradecanoic acid	ng/L	80	0	82.2	103		70 - 130
Perfluorotridecanoic acid	ng/L	80	0	86.4	108		70 - 130
Perfluoroundecanoic acid	ng/L	80	0	81.6	102		70 - 130

RPD : 0 out of 18 outside limits

Spike Recovery: 4 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 219112207

Prep Method: EPA 537 Mod Prep | Prep Batch: 671951

Analytical Method: EPA 537 Modified | Analytical Batch: 672387

GCAL QC ID: 1985363

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
6:2 Fluorotelomer sulfonate	ng/L	76	116	152	*	26		70 - 130	0 - 30
8:2 Fluorotelomer sulfonate	ng/L	76.8	121	158	*	11		70 - 130	0 - 30
NEtFOSAA	ng/L	80	100	125		19		70 - 130	0 - 30
NMeFOSAA	ng/L	80	85	106		13		70 - 130	0 - 30
Perfluorobutanesulfonic acid	ng/L	70.8	78.1	110		9		70 - 130	0 - 30
Perfluorobutanoic acid	ng/L	80	88	110		12		70 - 130	0 - 30
Perfluorodecanoic acid	ng/L	80	94	118		9		70 - 130	0 - 30
Perfluorododecanoic acid	ng/L	80	99.8	125		15		70 - 130	0 - 30
Perfluoroheptanoic acid	ng/L	80	86.3	108		8		70 - 130	0 - 30
Perfluorohexanesulfonic acid	ng/L	73	93.3	128		8		70 - 130	0 - 30
Perfluorohexanoic acid	ng/L	80	90.3	113		12		70 - 130	0 - 30
Perfluorononanoic acid	ng/L	80	95.8	120		16		70 - 130	0 - 30
Perfluorooctane Sulfonate	ng/L	74	114	154	*	22		70 - 130	0 - 30
Perfluorooctanoic acid	ng/L	80	95.4	119		9		70 - 130	0 - 30
Perfluoropentanoic acid	ng/L	80	88.1	110		19		70 - 130	0 - 30
Perfluorotetradecanoic acid	ng/L	80	89.2	111		8		70 - 130	0 - 30
Perfluorotridecanoic acid	ng/L	80	88.6	111		3		70 - 130	0 - 30
Perfluoroundecanoic acid	ng/L	80	101	127		22		70 - 130	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 4 out of 36 outside limits

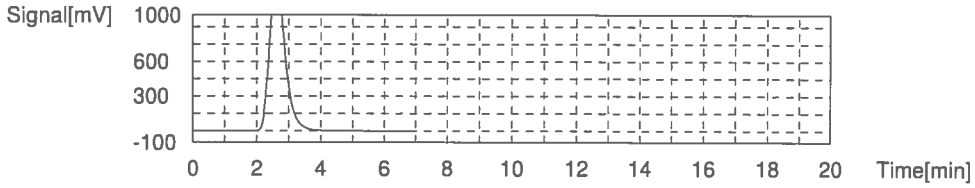
Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

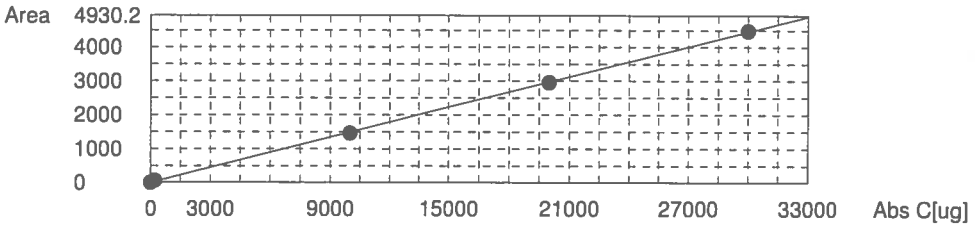
FORM III SV-1

No.	Area	CNV	Abs C	Weight	Rem.	Ex.	Date / Time
1	4482	4482	30000ug	1000mg	*H*****		5/8/2019 1:00:25 PM

Mean Area 4482
Mean CNV 4482



Slope: 0.1487
Intercept -0.4483
r^2 0.9998
r 0.9999
Zero Shift No



XIV

ANALYSIS RUN LOG

Report No: 219121351 Analytical Batch: 674198 Start Date: 12/24/19

Instrument ID: TOC6 Analytical Method: EPA 9060A End Date: 12/24/19

CLIENT SAMPLE ID	GCAL SAMPLE ID	DILUTION	TIME	ANALYTES TOC
CCV	1800	1	1059	X
CCB	1900	1	1110	X
MB1996135	1996135	1	1110	X
LCS1996136	1996136	1	1138	X
AOI 1-SB1-0.5-1	21912135103	1	1155	X
AOI 1-SB1-0.5-1DUP	1996137	1	1226	X
AOI 1-SB1-6-8	21912135104	1	1252	X
AOI 1-SB1-12-14	21912135105	1	1453	X
AOI 1-SB2-0.5-1	21912135106	1	1505	X
AOI 1-SB3-0.5-1	21912135109	1	1526	X
AOI 1-SB3-1-2	21912135110	1	1542	X
AOI 1-SB1-0.5-1DUP	1996138	1	1557	X
CCV	1800	1	1608	X
CCB	1900	1	1620	X

FORM XIV - GENCHEM

II

CONTINUING CALIBRATION VERIFICATION

Report No:	219121351	Instrument ID:	TOC6
Analysis Date:	12/24/19 1059	Lab File ID:	8176
Analytical Method:	EPA 9060A	Analytical Batch:	674198

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
Total Organic Carbon	mg/kg	10000	9880	99	90	110	

FORM II - GENCHEM

III

CONTINUING CALIBRATION BLANK

Report No:	219121351	Blank ID:	CCB for HBN 674198
Matrix:	Solid	Instrument ID:	TOC6
Analysis Date:	12/24/19 1110	Lab File ID:	8176
Analytical Method:	EPA 9060A	Analytical Batch:	674198

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

III

METHOD BLANK

Report No:	219121351	Blank ID:	MB1996135
Matrix:	Solid	Instrument ID:	TOC6
Analysis Date:	12/24/19 1110	Lab File ID:	8176
Analytical Method:	EPA 9060A	Analytical Batch:	674198

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

VII

LABORATORY CONTROL SPIKE

Report No:	219121351	GCAL ID:	LCS1996136
Matrix:	Solid	Instrument ID:	TOC6
Analyst:	PLH	Lab File ID:	8176
Prep Date:	NA	Analysis Date:	12/24/19 1138
Prep Batch:	NA	Analytical Batch:	674198
Prep Method:	NA	Analytical Method:	EPA 9060A

ANALYTE	UNITS	TRUE	FOUND	%REC	Q	% REC LIMITS
Total Organic Carbon	mg/kg	2000	2190	110		69 - 128

FORM VII - GENCHEM

VI
DUPLICATES

Report No:	219121351	Parent Sample ID:	AOI 1-SB1-0.5-1
Prep Method:	NA	Parent GCAL ID:	21912135103
Prep Date:	NA	Prep Batch:	NA
Analytical Method:	EPA 9060A	Analytical Batch:	674198

GCAL QC ID:	**1996137 DUP**	Instrument ID:	TOC6
Analyst:	PLH	Lab File ID:	NA
Analysis Date:	12/24/19 1226	Dilution:	1

ANALYTE	*UNITS*	*SAMPLE RESULT*	*Q*	*DUP RESULT*	*Q*	*RPD*	*#*	*RPD LIMITS*
Total Organic Carbon	mg/kg	10500		8880		17		0 - 25

FORM VI - GENCHEM

VI
DUPLICATES

Report No:	219121351	Parent Sample ID:	AOI 1-SB1-0.5-1
Prep Method:	NA	Parent GCAL ID:	21912135103
Prep Date:	NA	Prep Batch:	NA
Analytical Method:	EPA 9060A	Analytical Batch:	674198

GCAL QC ID:	**1996138 DUP**	Instrument ID:	TOC6
Analyst:	PLH	Lab File ID:	NA
Analysis Date:	12/24/19 1557	Dilution:	1

ANALYTE	*UNITS*	*SAMPLE RESULT*	*Q*	*DUP RESULT*	*Q*	*RPD*	*#*	*RPD LIMITS*
Total Organic Carbon	mg/kg	10500		10900		4		0 - 25

FORM VI - GENCHEM

II

CONTINUING CALIBRATION VERIFICATION

Report No:	219121351	Instrument ID:	TOC6
Analysis Date:	12/24/19 1608	Lab File ID:	8176
Analytical Method:	EPA 9060A	Analytical Batch:	674198

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
Total Organic Carbon	mg/kg	10000	9800	98	90	110	

III

CONTINUING CALIBRATION BLANK

Report No:	219121351	Blank ID:	CCB for HBN 674198
Matrix:	Solid	Instrument ID:	TOC6
Analysis Date:	12/24/19 1620	Lab File ID:	8176
Analytical Method:	EPA 9060A	Analytical Batch:	674198

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

XIV

ANALYSIS RUN LOG

Report No:	219121351	Analytical Batch:	673449	Start Date:	12/14/19
Instrument ID:	PH METER WATERS	Analytical Method:	EPA 9045D	End Date:	12/14/19

CLIENT SAMPLE ID	GCAL SAMPLE ID	DILUTION	TIME	ANALYTES pH
ICV	1600	1	1510	X
AOI 1-SB1-0.5-1	21912135103	1	1518	X
AOI 1-SB1-6-8	21912135104	1	1520	X
AOI 1-SB1-12-14	21912135105	1	1523	X
AOI 1-SB2-0.5-1	21912135106	1	1526	X
AOI 1-SB3-0.5-1	21912135109	1	1527	X
AOI 1-SB3-1-2	21912135110	1	1530	X
CCV	1800	1	1531	X

FORM XIV - GENCHEM

Pace Analytical®

PH Analysis Soil

ANALYST/ TECH	SLL2	START DATE/TIME	12/14/2019 14:00	END DATE/TIME	12/14/2019 15:45	BATCH	673449

#	CLIENT	TYPE	GCAL ID	Weight (20±0.1g)	DI Volume (20 mL)	Shaking Start	Shaking End	Settling Start	Settling End	Result (pH units)	Sample Temp (°C)	Result Time	STANDARDS\ REAGENTS
1	QC	ICV	1600	20.0	20	14:02	14:07	14:07	15:07	7.97	18.4	15:10	Buffer 1 Lot
2	4380	SAMP	21912124901	20.1	20	14:02	14:07	14:07	15:07	9.53	21.0	15:14	2128384
3	QC	DUP	1992373	20.0	20	14:02	14:07	14:07	15:07	9.54	21.0	15:16	Buffer 1 Exp
4	4859	SAMP	21912135103	20.1	20	14:02	14:07	14:07	15:07	7.89	21.5	15:18	04/30/20
5	4859	SAMP	21912135104	20.1	20	14:02	14:07	14:07	15:07	5.84	21.3	15:20	Buffer 4 Lot
6	4859	SAMP	21912135105	20.0	20	14:02	14:07	14:07	15:07	7.46	20.5	15:23	2128386
7	4859	SAMP	21912135106	20.1	20	14:02	14:07	14:07	15:07	7.80	21.7	15:26	Buffer 4 Exp
8	4859	SAMP	21912135109	20.1	20	14:02	14:07	14:07	15:07	9.25	22.5	15:27	06/30/21
9	4859	SAMP	21912135110	20.1	20	14:02	14:07	14:07	15:07	7.52	21.7	15:30	Buffer 7 Lot
10	QC	CCV	1800	20.0	20	14:02	14:07	14:07	15:07	7.98	19.2	15:31	2128472
11													Buffer 7 Exp
12													09/30/21
13													Buffer 10 Lot
14													2128302
15													Buffer 10 Exp
16													04/22/20
17													Buffer 13 Lot
18													2128385
19													Buffer 13 Exp
20													09/30/20
21													Buffer 8 (QC) Lot
22													2128335
23													Buffer 8 (QC) Exp
24													08/31/20
25													
26													
27													
28													
29													
30													

EQUIPMENT\CONDITIONS

pH Meter ID	Calibration Slope	Balance ID
PH01	101.2	BAL11

NOTES

Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21907122201	CS-Decon Water	Water	07/10/2019 14:49	07/12/2019 09:55

Sample Summary

LAB ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21911220701	CASCADE-DECONWATER 11/21	Water	11/21/2019 11:45	11/22/2019 09:45

Sample Summary

LAB ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21912135101	AOI 3-GW1	Water	12/10/2019 14:55	12/13/2019 10:02
21912135102	AOI 3-GW1-FD	Water	12/10/2019 14:55	12/13/2019 10:02
21912135103	AOI 1-SB1-0.5-1	Solid	12/11/2019 09:50	12/13/2019 10:02
21912135104	AOI 1-SB1-6-8	Solid	12/11/2019 10:55	12/13/2019 10:02
21912135105	AOI 1-SB1-12-14	Solid	12/11/2019 11:00	12/13/2019 10:02
21912135106	AOI 1-SB2-0.5-1	Solid	12/11/2019 11:15	12/13/2019 10:02
21912135107	ERB-121019CS	Water	12/10/2019 08:45	12/13/2019 10:02
21912135108	ERB-121119WL	Water	12/11/2019 12:40	12/13/2019 10:02
21912135109	AOI 1-SB3-0.5-1	Solid	12/11/2019 08:45	12/13/2019 10:02
21912135110	AOI 1-SB3-1-2	Solid	12/11/2019 09:15	12/13/2019 10:02
21912135111	ERB-121119HA	Water	12/11/2019 12:35	12/13/2019 10:02
21912135112	CS-SD05-0-1	Solid	12/11/2019 15:40	12/13/2019 10:02
21912135113	AOI 2-SB1-0.5-1	Solid	12/10/2019 10:40	12/13/2019 10:02
21912135114	AOI 2-SB1-11-13	Solid	12/10/2019 12:15	12/13/2019 10:02
21912135115	AOI 2-SB1-21-23	Solid	12/10/2019 12:10	12/13/2019 10:02
21912135116	AOI 2-SB1-21-23MS	Solid	12/10/2019 12:10	12/13/2019 10:02
21912135117	AOI 2-SB1-21-23MSD	Solid	12/10/2019 12:10	12/13/2019 10:02
21912135118	AOI 3-SB1-0.5-1	Solid	12/10/2019 14:10	12/13/2019 10:02
21912135119	AOI 3-SB1-1-2	Solid	12/10/2019 14:30	12/13/2019 10:02
21912135120	AOI 3-SB1-1-2-FD	Solid	12/10/2019 14:30	12/13/2019 10:02
21912135121	AOI 3-SB2-0.5-1	Solid	12/10/2019 08:50	12/13/2019 10:02
21912135122	AOI 3-SB2-7-9	Solid	12/10/2019 10:10	12/13/2019 10:02
21912135123	AOI 3-SB2-15-17	Solid	12/10/2019 10:15	12/13/2019 10:02
21912135124	AOI 3-GW2	Water	12/10/2019 10:45	12/13/2019 10:02
21912135125	FRB-121119	Water	12/11/2019 12:45	12/13/2019 10:02
21912135126	AOI 1-GW3	Water	12/11/2019 09:20	12/13/2019 10:02
21912135127	AOI 1-GW1	Water	12/11/2019 11:30	12/13/2019 10:02
21912135128	AOI 1-GW2	Water	12/11/2019 12:25	12/13/2019 10:02
21912135129	AOI 1-GW2MS	Water	12/11/2019 12:25	12/13/2019 10:02
21912135130	AOI 1-GW2MSD	Water	12/11/2019 12:25	12/13/2019 10:02
21912135131	CS-SW05	Water	12/11/2019 15:25	12/13/2019 10:02
21912135132	CS-SW01	Water	12/12/2019 08:30	12/13/2019 10:02
21912135133	CS-SD01-0-1	Solid	12/12/2019 08:35	12/13/2019 10:02
21912135134	CS-SW02	Water	12/12/2019 09:40	12/13/2019 10:02
21912135135	CS-SD02-0-1	Solid	12/12/2019 09:45	12/13/2019 10:02
21912135136	CS-SW03	Water	12/12/2019 10:40	12/13/2019 10:02
21912135137	CS-SD03-0-1	Solid	12/12/2019 10:50	12/13/2019 10:02
21912135138	CS-SW04	Water	12/12/2019 11:20	12/13/2019 10:02
21912135139	CS-SD04-0-1	Solid	12/12/2019 11:30	12/13/2019 10:02
21912135140	CS-SD06-0-1	Solid	12/12/2019 12:15	12/13/2019 10:02
21912135141	CS-SD07-0-1	Solid	12/12/2019 12:35	12/13/2019 10:02
21912135142	CS-SD08-0-1	Solid	12/12/2019 13:20	12/13/2019 10:02
21912135143	ERB-121219SS	Water	12/12/2019 14:00	12/13/2019 10:02

Case Narrative

Client: AECOM-East **Report:** 219071222

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

This report was completed in accordance with DOD QSM 5.1 as specified in the contract.

SEMI-VOLATILES MASS SPECTROMETRY

In the EPA 537 Modified analysis in prep batch 663752, the recovery for the extracted internal standard, M2PFTeDA is outside control limits for the method blank but acceptable in the associated sample. The associated sample was re-extracted and analyzed with a low recovery for this EIS in the sample and associated method blank. No additional sample volume was available to extract a third time.

MISCELLANEOUS

PFOS Abbreviations
6:2 FTS - 6:2 Fluorotelomer sulfonate
8:2 FTS - 8:2 Fluorotelomer sulfonate
FOSA - Perfluorooctane Sulfonamide
PFBA - Perfluorobutanoic acid
PFBS - Perfluorobutanesulfonic acid
PFDA - Perfluorodecanoic acid
PFDS - Perfluorodecane Sulfonate
PFDoA - Perfluorododecanoic acid
PFHpA - Perfluoroheptanoic acid
PFHpS - Perfluoro-1-heptanesulfonate
PFHxA - Perfluorohexanoic acid
PFHxS - Perfluorohexanesulfonic acid
PFNA - Perfluorononanoic acid
PFOA - Perfluorooctanoic acid
PFOS - Perfluorooctane Sulfonate
PFOS - Perfluorooctanesulfonic acid
PFPeA - Perfluoropentanoic acid
PFTeDA - Perfluorotetradecanoic acid
PFTrDA - Perfluorotridecanoic acid
PFUdA - Perfluoroundecanoic acid

Case Narrative

Client: AECOM-East **Report:** 219112207

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

This report was completed in accordance with DOD QSM 5.1 as specified in the contract.

SEMI-VOLATILES MASS SPECTROMETRY

In the EPA 537 Modified analysis of prep batch 671951, the LCS and/or LCSD recoveries are outside control limits for 6:2 FTS, 8:2FTS and PFOS. These analytes were not detected in the associated sample with the exception of a J value for PFOS.

MISCELLANEOUS

PFAS Abbreviations
6:2 FTS - 6:2 Fluorotelomer sulfonate
8:2 FTS - 8:2 Fluorotelomer sulfonate
FOSA - Perfluorooctane Sulfonamide
PFBA - Perfluorobutanoic acid
PFBS - Perfluorobutanesulfonic acid
PFDA - Perfluorodecanoic acid
PFDS - Perfluorodecane Sulfonate
PFDoA - Perfluorododecanoic acid
PFHpA - Perfluoroheptanoic acid
PFHpS - Perfluoro-1-heptanesulfonate
PFHxA - Perfluorohexanoic acid
PFHxS - Perfluorohexanesulfonic acid
PFNA - Perfluorononanoic acid
PFOA - Perfluorooctanoic acid
PFOS - Perfluorooctane Sulfonate
PFOS - Perfluorooctanesulfonic acid
PFPeA - Perfluoropentanoic acid
PFTeDA - Perfluorotetradecanoic acid
PFTrDA - Perfluorotridecanoic acid
PFUdA - Perfluoroundecanoic acid

Case Narrative

Client: AECOM-East **Report:** 219121351

Pace Analytical Gulf Coast received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

This report was completed in accordance with DOD QSM 5.1.1 as specified in the contract.

SEMI-VOLATILES MASS SPECTROMETRY

In the EPA 537 Modified analysis for prep batch 673519, the MS/MSD exhibited recovery and RPD failures. All LCS/LCSD recoveries and RPDs are acceptable.

In the EPA 537 Modified analysis of prep batch 673520, the MS/MSD exhibited recovery and RPD failures. The MS/MSD and LCS/LCSD recoveries are above the upper control limit for Perfluorotridecanoic acid. This analyte was not detected in the associated samples. All other LCS/LCSD recoveries are acceptable. The recovery for the extracted internal standard, M2PFTeDA is outside control limits for the method blank, LCS, and LCSD.

The recoveries for some of the extracted internal standards are outside control limits for samples 21912135101 (AOI 3-GW1), 21912135102 (AOI 3-GW1-FD), 21912135104 (AOI 1-SB1-6-8), 21912135106 (AOI 1-SB2-0.5-1), 21912135107 (ERB-121019CS), 21912135108 (ERB-121119WL), 21912135111 (ERB-121119HA), 21912135112 (CS-SD05-0-1), 21912135124 (AOI 3-GW2), 21912135125 (FRB-121119), 21912135126 (AOI 1-GW3), 21912135127 (AOI 1-GW1), 21912135128 (AOI 1-GW2), 21912135129 (AOI 1-GW2MS), 21912135130 (AOI 1-GW2MSD), 21912135131 (CS-SW05), 21912135132 (CS-SW01), 21912135133 (CS-SD01-0-1), 21912135134 (CS-SW02), 21912135135 (CS-SD02-0-1), 21912135136 (CS-SW03), 21912135137 (CS-SD03-0-1), 21912135138 (CS-SW04), 21912135139 (CS-SD04-0-1), 21912135141 (CS-SD07-0-1), 21912135142 (CS-SD08-0-1), and 21912135143 (ERB-121219SS).

MISCELLANEOUS

Samples 21912135133 (CS-SD01-0-1) and 21912135135 (CS-SD02-0-1) are identified as water samples on the COC but are solid samples.

PFAS Abbreviations
6:2 FTS - 6:2 Fluorotelomer sulfonate
8:2 FTS - 8:2 Fluorotelomer sulfonate
FOSA - Perfluorooctane Sulfonamide
PFBA - Perfluorobutanoic acid
PFBS - Perfluorobutanesulfonic acid
PFDA - Perfluorodecanoic acid
PFDS - Perfluorodecane Sulfonate
PFDoA - Perfluorododecanoic acid
PFHpA - Perfluoroheptanoic acid
PFHpS - Perfluoro-1-heptanesulfonate
PFHxA - Perfluorohexanoic acid
PFHxS - Perfluorohexanesulfonic acid
PFNA - Perfluorononanoic acid
PFOA - Perfluorooctanoic acid
PFOS - Perfluorooctane Sulfonate
PFOS - Perfluorooctanesulfonic acid
PFPeA - Perfluoropentanoic acid
PFTeDA - Perfluorotetradecanoic acid
PFTrDA - Perfluorotridecanoic acid
PFUdA - Perfluoroundecanoic acid

SAMPLE RECEIVING CHECKLIST

SAMPLE DELIVERY GROUP 219071222

Client PM AEC 4859 - AECOM-East	**Transport Method** FEDEX
Profile Number 280645	**Received By** Savage, Tiffany R
Line Item(s) 1 - Ground Water-537 Mod.	**Receive Date(s)** 07/12/19

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by GCAL?	☑	☐

COOLERS

Airbill	Thermometer ID: E34	Temp °C
8142-2904-8111		2.5

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.6

Pace Analytical

SAMPLE RECEIVING CHECKLIST

219112207

SAMPLE DELIVERY GROUP 219112207	
Client PM AEC 4859 - AECOM-East	**Transport Method** FEDEX
Profile Number 280645	**Received By** McCune, Dodie N.
Line Item(s) 1 - Ground Water-18 com 537 Mod.	**Receive Date(s)** 11/22/19

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by Pace Gulf Coast?	☑	☐

COOLERS

Airbill	Thermometer ID: E34	Temp °C
813942824837		2.8

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.6

Pace Analytical

SAMPLE RECEIVING CHECKLIST

219121351

SAMPLE DELIVERY GROUP 219121351	
Client PM AEC 4859 - AECOM-East	**Transport Method** FEDEX
Profile Number 280645	**Received By** McCune, Dodie N.
Line Item(s) 1 - Ground Water-18 com 537 Mod. 2 - Soil	**Receive Date(s)** 12/13/19

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☐	☑
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by Pace Gulf Coast?	☑	☐

COOLERS

Airbill	Thermometer ID: E26	Temp °C
814851456130		1.6
814851456120		1.5

DISCREPANCIES

Sample Discrepancy:
21912135133 - CS-SD01-0-1
21912135135 - CS-SD02-0-1

LAB PRESERVATIONS

None

NOTES COC LIST SAMPLES AS WATERS-LOGGED AS SOLIDS

Revision 1.6

CHAIN OF CUSTODY RECORD

GCAL ANALYTICAL LABORATORIES, LLC
7979 Innovation Park Dr., Baton Rouge, LA 70820-7402
Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

Client ID: 4859 - AECOM-East
SDG: 219071222
PM: AEC

Report to:
Client: AECOM
Address: 20120 Milestone Center Dr., Germantown, MD
Contact: Naum Tavantzis
Phone: 919-461-1178
E-mail: naum.tavantzis@aecom.com

Bill to:
Client: SAME
Address:
Contact: SAME
Phone: SAME
E-mail: SAME

P.O. Number: 104397
Project Name/Number: 60552172 ARNG - Camp Smith
Sampled By: Brooke Perrigo

Analytical Requests & Method: PFAS EPA Method 537 Modified

GCAL use only:
Custody Seal used ☐ yes ☐ no
intact ☑ yes ☐ no E84
Temperature °C 2.5
3704M
☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	Preservative
W	7/10/19	1449		X	CS-Deconwater	4	X NA -1

Air Bill No: 8142-2904-8111

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☑ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
B Perrigo	7/11/19	0900	FedEx		
FedEx	7/12/19	0905		7/12/19	0955
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Note:

By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services.

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT

GCAL ANALYTICAL LABORATORIES, LLC

7979 Innovation Park Dr., Baton Rouge, LA 70820-7402
Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

CHAIN OF CUSTODY RECORD

Client ID: 4859 - AECOM-East
SDG: 219112207
PM: AEC

Report to:
Client: AECOM
Address: 12420 Milestone Center Dr. Germantown MD
Contact: Brooke Perrigo
Phone: 703-399-3966
E-mail: Brooke.perrigo@aecom.com

Bill to:
Client: SAME
Address:
Contact: SAME
Phone:
E-mail:

P.O. Number: 104397
Project Name/Number: 60552172 ARNG - Camp Smith
Sampled By: Gerlinde Wolf

Analytical Requests & Method: PFAS EPA Method 537 Modified

GCAL use only:
Custody Seal
used ☐ yes ☐ no
intact ☑ yes ☐ no
Temperature °C 2.8
E34 21CPM

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	PFAS EPA Method 537 Modified	Preservative
W	11/21/19	1145		X	Cascade - Decon Water 11/21	2	X	1

Air Bill No: ~~8142 2904 8111~~ 8139-4282-4837

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☒ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Gerlinde Wolf	11/21/19	1230	Fed Ex		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
FedEx	11/22/19	0945		11/22/19	0945
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Note:

By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services.

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT

GCAL ANALYTICAL LABORATORIES, LLC
7979 Innovation Park Drive | Baton Rouge, LA 70820-7402
225.769.4900 | www.gcal.com

CHAIN OF CUSTODY RECORD

Client ID: 4859 - AECOM-East
SDG: 219121351
PM: AEC

Report To:		Bill To:	
Client:	AECOM	Client:	AECOM
Address:	12420 Milestone Center Dr. Germantown, MD 20876	Address:	3101 Wilson Blvd., Ste 900 Arlington, Virginia 22201
Contact:	Naoum Tavantzis	Contact:	Brooke Perrigo
Phone:	919-461-1178	Phone:	703-682-4900
Email:	naoum.tavantzis@aecom.com	Email:	brooke.perrigo@aecom.com

P.O. Number: 104397
Project Name/Number: 60552172 - ARNG PFAS - Camp Smith SI
Sampled By: Scott Kalemba/Robert Burns

Custody Seal: Used: Yes No; Intact: Yes No
Temperature: 1.5 E26 (10) 26.23 CPM

Dissolved Analysis Requested: Field Filtered; Lab Filtered

Matrix1	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	*See Notes Section* None	TOC - EPA 9060A / pH - EPA 6045D None	← Preservative / Notes ↓	GCAL ID
W	12/10/19	1455		X	AOI 3-GW1	2	X		Shaker Test = Negative	1
W	12/10/19	1455		X	AOI 3-GW1-FD	2	X		Shaker Test = Negative	2
S	12/11/19	950		X	AOI 1-SB1-0.5-1	2	X	X		3
S	12/11/19	1055		X	AOI 1-SB1-6-8	2	X	X		4
S	12/11/19	1100		X	AOI 1-SB1-12-14	2	X	X		5
S	12/11/19	1115		X	AOI 1-SB2-0.5-1	2	X	X		6
W	12/10/19	845		X	ERB-121019CS	2	X			7
W	12/11/19	1240		X	ERB-121119WL	2	X			8
S	12/11/19	845		X	AOI 1-SB3-0.5-1	2	X	X		9
S	12/11/19	915		X	AOI 1-SB3-1-2	2	X	X		10
W	12/11/19	1235		X	ERB-121119HA	2	X			11
S	12/11/19	1540		X	CS-SD05-0-1	1	X			12

Airbill Number: 8148 5145 6130 / 8148 5145 6120
Turn Around Time(Business Days): Std

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
	12/12/2019 - 1700	FedEx	12/12/2019 - 1700
Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
FedEx	12-13-19 10:02	Dodie McCune	12-13-19 10:02
Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:

Notes:
Analytical Method: PFAS (EPA Method 537M QSM 5.1 Table B-15)

1Matrix: W = Water, S=Solid, L=Liquid, T=Tissue.
*- Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

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CHAIN OF CUSTODY RECORD

Client ID: 4859 - AECOM-East
SDG: 219121351
PM: AEC

Report To:		Bill To:	
Client:	AECOM	Client:	AECOM
Address:	12420 Milestone Center Dr. Germantown, MD 20876	Address:	3101 Wilson Blvd., Ste 900 Arlington, Virginia 22201
Contact:	Naoum Tavantzis	Contact:	Brooke Perrigo
Phone:	919-461-1178	Phone:	703-682-4900
Email:	naoum.tavantzis@aecom.com	Email:	brooke.perrigo@aecom.com

P.O. Number: 104397
Project Name/Number: 60552172 - ARNG PFAS - Camp Smith SI
Sampled By: Scott Kalemba/Robert Burns

Custody Seal: Used: Yes No; Intact: Yes No
Temperature: 1.4, 1.6 EDD 2/6, 730PM

Dissolved Analysis Requested: Field Filtered; Lab Filtered

Matrix1	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	*See Notes Section* None	← Preservative / Notes ↓	GCAL ID
S	12/10/19	1040		X	AOI 2-SB1-0.5-1	1	X		13
S	12/10/19	1215		X	AOI 2-SB1-11-13	1	X		14
S	12/10/19	1210		X	AOI 2-SB1-21-23	1	X		15
S	12/10/19	1210		X	AOI 2-SB1-21-23MS	1	X		16
S	12/10/19	1210		X	AOI 2-SB1-21-23MSD	1	X		17
S	12/10/19	1410		X	AOI 3-SB1-0.5-1	1	X		18
S	12/10/19	1430		X	AOI 3-SB1-1-2	1	X		19
S	12/10/19	1430		X	AOI 3-SB1-1-2-FD	1	X		20
S	12/10/19	850		X	AOI 3-SB2-0.5-1	1	X		21
S	12/10/19	1010		X	AOI 3-SB2-7-9	1	X		22
S	12/10/19	1015		X	AOI 3-SB2-15-17	1	X		23
W	12/10/19	1045		X	AOI 3-GW2	2	X	Shaker Test = Negative	24

Airbill Number: 8148 5145 6130 / 8148 5145 6120

Turn Around Time(Business Days): 5 Std

Relinquished by: (Signature)	Date/Time: 12/12/2019 - 1700	Received by: (Signature) FedEx	Date/Time: 12/12/2019 - 1700
Relinquished by: (Signature) FedEx	Date/Time: 12-13-19 10:02	Received by: (Signature) DDaeMCune	Date/Time: 12-13-19 10:02
Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:

Notes: Analytical Method: PFAS (EPA Method 537M QSM 5.1 Table B-15)

1Matrix: W = Water, S=Solid, L=Liquid, T=Tissue.
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CHAIN OF CUSTODY RECORD

Client ID: 4859 - AECOM-East
SDG: 219121351
PM: AEC

Report To:		Bill To:	
Client:	AECOM	Client:	AECOM
Address:	12420 Milestone Center Dr. Germantown, MD 20876	Address:	3101 Wilson Blvd., Ste 900 Arlington, Virginia 22201
Contact:	Naoum Tavantzis	Contact:	Brooke Perrigo
Phone:	919-461-1178	Phone:	703-682-4900
Email:	naoum.tavantzis@aecom.com	Email:	brooke.perrigo@aecom.com

P.O. Number: 104397
Project Name/Number: 60552172 - ARNG PFAS - Camp Smith SI
Sampled By: Scott Kalemba/Robert Burns

Custody Seal: Used: Yes No; Intact: Yes No
Temperature: 1.6° 1.5 Ed 26, 23 UPM

Dissolved Analysis Requested
Field Filtered
Lab Filtered

Matrix1	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	*See Notes Section* None	← Preservative / Notes ↓	GCAL ID
W	12/11/19	1245		X	FRB-121119	2	X		25
W	12/11/19	920		X	AOI 1-GW3	2	X	Shaker Test = Negative	26
W	12/11/19	1130		X	AOI 1-GW1	2	X	Shaker Test = Negative	27
W	12/11/19	1225		X	AOI 1-GW2	2	X	Shaker Test = Negative	28
W	12/11/19	1225		X	AOI 1-GW2MS	2	X	Shaker Test = Negative	29
W	12/11/19	1225		X	AOI 1-GW2MSD	2	X	Shaker Test = Negative	30
W	12/11/19	1525		X	CS-SW05	2	X		31
W	12/12/19	830		X	CS-SW01	2	X		32
W	12/12/19	835		X	CS-SD01-0-1	1	X		33
W	12/12/19	940		X	CS-SW02	2	X		34
W	12/12/19	945		X	CS-SD02-0-1	1	X		35
W	12/12/19	1040		X	CS-SW03	2	X		36

Airbill Number: 8148 5145 6130 / 8148 5145 6120
Turn Around Time(Business Days): STD

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
	12/12/2019 - 1700	FedEx	12/12/2019 - 1700
FedEx 12-13-19	10:02	Received by: (Signature)	Date/Time:
Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:

Notes:
Analytical Method: PFAS (EPA Method 537M QSM 5.1 Table B-15)

1Matrix: W = Water, S=Solid, L=Liquid, T=Tissue.
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CHAIN OF CUSTODY RECORD

Client ID: 4859 - AECOM-East
SDG: 219121351
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Germantown, MD 20876
Contact: Naoum Tavantzis
Phone: 919-461-1178
Email: naoum.tavantzis@aecom.com

Bill To:
Client: AECOM
Address: 3101 Wilson Blvd., Ste 900
Arlington, Virginia 22201
Contact: Brooke Perrigo
Phone: 703-682-4900
Email: brooke.perrigo@aecom.com

Analytical Requests & Method

Custody Seal:
Used: Yes No
Intact: Yes No
Temperature: 1.6 1.5 EDD 26,23UPM

P.O. Number: 104397
Project Name/Number: 60552172 - ARNG PFAS - Camp Smith SI
Sampled By: Scott Kalemba/Robert Burns

Dissolved Analysis Requested
Field Filtered
Lab Filtered

Matrix1	Date	Time (2400)	Comp	Grab	Sample Description	No. of Containers	*See Notes Section* None	← Preservative / Notes ↓	GCAL ID
S	12/12/19	1050		X	CS-SD03-0-1	1	X		37
W	12/12/19	1120		X	CS-SW04	2	X		38
S	12/12/19	1130		X	CS-SD04-0-1	1	X		39
S	12/12/19	1215		X	CS-SD06-0-1	1	X		40
S	12/12/19	1235		X	CS-SD07-0-1	1	X		41
S	12/12/19	1320		X	CS-SD08-0-1	1	X		42
W	12/12/19	1400		X	ERB-121219SS	2	X		48

Airbill Number: 8148 5145 6130 / 8148 5145 6120

Turn Around Time(Business Days): Std

Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:
	12/12/2019 - 1700	FedEx	12/12/2019 - 1700
Relinquished by: (Signature) FedEx	Date/Time: 12-13-19 10:02	Received by: (Signature) DodieMcCann	Date/Time: 12-13-19 10:02
Relinquished by: (Signature)	Date/Time:	Received by: (Signature)	Date/Time:

Notes:
Analytical Method: PFAS (EPA Method 537M QSM 5.1 Table B-15)

1Matrix: W = Water, S=Solid, L=Liquid, T=Tissue.
*- Requires prior approval, Rush charges may apply. We cannot accept verbal changes. Please email written changes to your GCAL Project Manager.

Data Qualifying Codes

Two types of data qualifying codes or flags are applied in the course of the data review. The data validation flags indicate data that are not usable for decision-making, more than normally biased and/or variable, or not representative of field conditions. These codes and their definitions are presented below in the hierarchy stipulated in the USEPA Contract Laboratory Program National Functional Guidelines for Organic (January 2017) Data Review.

Data Validation Flags

Flag	Interpretation
R	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
U	The analyte was analyzed for, but not detected at a level greater than or equal to the level of the adjusted Detection Limit (DL) for sample and method.
J+	Reported value may not be accurate or precise, but the result may be biased high.
J-	Reported value may not be accurate or precise, but the result may be biased low.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the Limit of Detection (LOD).
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted DL. However, the reported adjusted DL is approximate and may be inaccurate or imprecise.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by gas Chromatograph/Mass Spectrometer (GC/MS)
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which should include a project chemist), but exclusion of the data is recommended.

The other type of code used by AECOM is a "Reason Code". The reason code indicates the type of quality control failure that led to the application of the data validation flag.

Reason Codes

Code	*Description*	*Code*	*Description*
a	Tracer recovery (radiochemical data only)	**ld**	Laboratory duplicate RPDs (matrix duplicate, MSD, LCSD)
be	Equipment blank contamination	**lp**	Laboratory control sample/laboratory control sample duplicate RPDs
bf	Field blank contamination	**m**	Matrix spike recovery
bi	Bias indeterminate	**md**	Matrix spike/matrix spike duplicate RPD
bl	Laboratory blank contamination	**nb**	Negative laboratory blank contamination
bm	Missing Blank Information	**p**	Chemical preservation issue
bt	Trip Blank	**pe**	Post Extraction Spike
c	Calibration issue	**ps**	Performance Evaluation Sample
cl	Clean-up standard recovery	**q**	Quantitation issue
cp	Insufficient in growth (radiochemical data only)	**r**	Dual column RPD
cr	Chromatographic resolution	**rp**	Re-extraction precision issue [PAHs only]
d	Reporting limit raised due to chromatographic interference	**rt**	SIM ions not within + 2 seconds
dt	Dissolved result > total over limit	**s**	Surrogate recovery
e	Ether interference	**sc**	Sample collection issues
fd	Field duplicate RPDs	**sp**	Sample preparation issue
g	Chromatographic pattern match issue	**su**	Evidence of ion suppression
h	Holding times	**t**	Temperature Preservation Issue
i	Internal standard areas	**u**	High combined sample result uncertainty (radiochemical data only)
ii	Injection internal standard area or retention time exceedance	**v**	Compound identification issue
k	Estimated Maximum Possible Concentrations	**x**	Low % solids
l	LCS recoveries	**y**	Serial dilution results
lc	Labeled compound recovery	**z**	ICS results

DATA VALIDATION REPORT - Level III Review

SDG No.:	**221040641 + 72417 + 72807 +72979**	**Analysis:**	**Per- and Polyfluorinated Alkyl Substances**
Laboratory:	**Pace Gulf Coast**	**Project:**	**Camp Smith**
Reviewer:	**Tyler Bryant**	**Date:**	**September 1st, 2021**

This report presents the findings of a review of the referenced data. The report consists of this summary, a listing of the samples included in the review, copies of data reports with data qualifying flags applied, data review worksheets, supporting documentation, and an explanation of the data qualifying flags employed. The review performed is based on the specifics of the analytical method referenced and provisions of the approved project-specific work plan; and, qualified according to the *Contract Laboratory Program National Functional Guidelines* (NFG) *for Superfund Organic Methods Data Review*, EPA-540-R-20-005, November 2020, and Department of Defense (DoD) Data Validation Guidelines Module 3 QSM Table B-15, May 2020. Modifications reflect the level of review requested, the specifications of the project specific QAPP, and the specifics of the analytical methods employed.

Major Anomalies: None.

Minor Anomalies: During the PFAS analysis, the following field and laboratory blanks displayed target analyte concentrations greater than the detection limit:

Blank	Date	Time	Batch	Analyte	Concentration (ng/L)
CS-DECON-040521	4/9/2021	1857	708250	PFBS	2.88
				PFOA	2.09
CS-DECON-040521RE	4/13/2021	0604	708255	PFHxA	1.48
CS-DECON-040521RE1	4/15/2021	0536	708591	PFBA	1.67
				PFPeA	1.03
CS-ERB-01	7/29/2021	1513	717492	6:2 FTS	23.3
CS-DECON-072521	8/11/2021	2153	718596	PFBS	1.51
				PFBA	2.37
				PFHxA	2.09
				PFOS	1.63
				PFOA	1.37
				PFPeA	2.07
2210709A_14	4/9/2021	1405	708250	8:2 FTS	1.51
				PFBS	1.61
				PFBA	0.972
				PFDoA	1.15
				PFHxS	1.01
				PFUnA	1.42
2210414_11	4/14/2021	1408	708591	6:2 FTS	1.85
				PFBA	1.56
2210811B_10	8/11/2021	2013	718586	NEtFOSAA	3.16
				NMeFOSAA	3.07
MB2166311	4/9/2021	1739	708250	8:2 FTS	1.45
				PFTrDA	1.21
				PFUnA	1.59
MB2170472	4/15/2021	0418	708591	PFBA	0.965

The positive field sample results that were less than five times the blank concentrations were qualified U,bf. Non-detect field sample results and those that displayed positive results greater than five times the blank concentrations required no data qualifying action. The following QC samples displayed extraction internal standards (EIS) area counts greater than the upper QC limit of 150% for M_2 8:2 FTS. Field sample results are not qualified based on QC sample EIS area counts; no data qualifying action was required. The following laboratory control spike pairs (LCS/LCSD) displayed percent recoveries or relative percent differences (RPD) outside quality control (QC) limits:

Batch	Analyte	Upper QC Limit (%)	LCS Recovery (%)	LCSD Recovery (%)	RPD (%)
708250	PFDA	129	131	120	9
	PFNA	130	135	144	6
	PFTrDA	144	153	148	3
718449	8:2 FTS	138	81	116	35
	NEtFOSAA	135	73	101	31
	NMeFOSAA	136	76	108	35
	PFBS	130	77	106	32
	PFDoA	134	78	109	33
	PFHpA	130	77	108	33
	PFHxS	131	77	105	31
	PFHxA	129	75	105	33
	PFNA	130	78	107	31
	PFPeA	129	79	107	31
	PFTrDA	144	79	112	34
	PFUnA	133	78	109	33

The field sample results associated with the percent recovery exceedances were non-detect; no data qualifying action was required. No field sample results were reported from batch 718449; no data qualifying action was required. The matrix spike pairs (MS/MSD) performed on the following parent samples displayed percent recoveries less than the lower QC limits:

Parent Sample	QC Batch	Analyte	MS Recovery (%)	MSD Recovery (%)	QC Limits (%)
CS-MW004S-GW	717350	6:2 FTS	-27	-17	64-140
AOI2-SB5-02-04	718007	PFOS	68	67	68-136

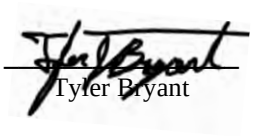
The parent sample results associated with low MS/MSD percent recoveries were positive and were qualified J-,m. Field sample AOI2-SB3-04-04DL displayed injection internal standards (IIS) area counts outside QC limits. Field sample results are not qualified based on IIS area count anomalies; no data qualifying action was required. The parent sample CS-MW003S-SB-40-42 displayed a positive result for PFHxA while the associated field duplicate displayed a non-detect result. The positive parent sample result was qualified J,fd while the non-detect duplicate result was qualified UJ,fd.

During the TOC analysis, lab duplicate pair performed on parent sample CS-MW003S-SB-40-42 displayed a RPD greater than the QC limit of 25% at 26%. The associated field sample result was qualified J,fd.

The technical holding time for the pH analysis is “immediate.” The field sample results associated with the holding time exceedances were qualified J,h.

Correctable Anomalies: None.

Comments: On the basis of this evaluation, the laboratory appears to have followed the specified method, with the exception of anomalies discussed previously. If a given fraction was not discussed, all quality control criteria reviewed were within acceptable limits. All data are usable, as qualified, for their intended purposed based on the quality control data reviewed.

Signed: 
Tyler Bryant

Camp Smith

Laboratory: Pace Gulf Coast

Job: 60552172 SDG#: 221040641 + 72417 + 72807 + 72979

Sample ID	Client ID	Sample Type	Sample Date	Matrix	PFAS - QSM B-15	TOC + pH
22104064101	CS-DECON-040521	Decon Sample	4/5/2021	Aqueous	X	
22107241701	CS-MW004S-SB-07-09	Field Sample	7/19/2021	Soil	X	
22107241702	CS-MW001S-SB-00-02	Field Sample	7/20/2021	Soil	X	X
22107241703	CS-MW001S-SB-00-02-D	Field Duplicate	7/20/2021	Soil	X	X
22107241704	CS-MW001D-SB-08-10	Field Sample	7/20/2021	Soil	X	
22107241705	CS-MW004S-SB-00-02	Field Sample	7/19/2021	Soil	X	
22107241706	CS-MW004S-GW	Field Sample	7/22/2021	Water	X	
22107241709	CS-ERB-01	Equipment Blank	7/22/2021	Aqueous	X	
22107280701	CS-MW002D-SB-39-41	Field Sample	7/23/2021	Soil	X	
22107280702	CS-MW002D-SB-62-63	Field Sample	7/23/2021	Soil		
22107280703	AOI2-SB2-00-02	Field Sample	7/24/2021	Soil	X	
22107280704	AOI2-SB2-02-04	Field Sample	7/24/2021	Soil	X	
22107280705	AOI2-SB3-00-02	Field Sample	7/24/2021	Soil	X	
22107280706	AOI2-SB3-02-04	Field Sample	7/24/2021	Soil	X	
22107280707	AOI2-SB4-00-02	Field Sample	7/24/2021	Soil	X	
22107280710	AOI2-SB5-00-02	Field Sample	7/24/2021	Soil	X	
22107280711	AOI2-SB4-02-04	Field Sample	7/24/2021	Soil	X	X
22107280712	AOI2-SB5-02-04	Field Sample	7/24/2021	Soil	X	
22107280715	CS-ERB-02	Equipment Blank	7/24/2021	Aqueous	X	
22107280716	CS-ERB-03	Equipment Blank	7/25/2021	Aqueous	X	
22107280717	CS-FRB-01	Field Rinsate Blank	7/25/2021	Aqueous	X	
22107280718	CS-MW001S-GW	Field Sample	7/24/2021	Water	X	
22107280719	CS-MW001S-GW-D	Field Duplicate	7/24/2021	Water	X	
22107280720	CS-MW001D-GW	Field Sample	7/24/2021	Water	X	
22107280721	CS-DECON-072521	Decon Sample	7/25/2021	Aqueous	X	
22107280722	CS-MW003S-SB-40-42	Field Sample	7/25/2021	Soil	X	X
22107280723	CS-MW003S-SB-40-42-D	Field Duplicate	7/25/2021	Soil	X	
22107280724	CS-ST-045-072621	Field Sample	7/26/2021	Soil	X	
22107297901	CS-MW003S-GW	Field Sample	7/27/2021	Water	X	
22107297902	CS-MW002D-GW	Field Sample	7/28/2021	Water	X	

Camp Smith
Field Duplicates

Client Sample ID:				CS-MW001S-SB-00-02		CS-MW001S-SB-00-02-D					
Date Sampled:				7/20/21		7/20/21					
	Units	LOQ	5x LOQ	Sample Conc		Duplicate Conc		% RPD	Delta	4x LOQ	Pass/ Fail
Perfluorinated Alkyl Substances											
6:2 FTS	µg/Kg	1.22	1.09	0.244	U	0.236	U	3.3%	0.0080	4.9	Pass
8:2 FTS	µg/Kg	1.22	1.09	0.122	U	0.118	U	3.3%	0.0040	4.9	Pass
NEtFOSAA	µg/Kg	1.22	1.09	0.122	U	0.118	U	3.3%	0.0040	4.9	Pass
NMeFOSAA	µg/Kg	1.22	1.09	0.061	U	0.059	U	3.3%	0.0020	4.9	Pass
PFBA	µg/Kg	1.22	1.09	0.224	J	0.207	J	7.9%	0.017	4.9	Pass
PFBS	µg/Kg	1.22	1.09	0.034	J	0.034	J	0.0%	0.0	4.9	Pass
PFDA	µg/Kg	1.22	1.09	0.093	J	0.085	J	9.0%	0.0080	4.9	Pass
PFDoA	µg/Kg	1.22	1.09	0.032	J	0.030	J	6.5%	0.0020	4.9	Pass
PFHpA	µg/Kg	1.22	1.09	0.134	J	0.126	J	6.2%	0.0080	4.9	Pass
PFHxA	µg/Kg	1.22	1.09	0.123	J	0.113	J	8.5%	0.010	4.9	Pass
PFHxS	µg/Kg	1.22	1.09	0.122	U	0.118	U	3.3%	0.0040	4.9	Pass
PFNA	µg/Kg	1.22	1.09	0.217	J	0.197	J	9.7%	0.020	4.9	Pass
PFOA	µg/Kg	1.22	1.09	0.669	J	0.627	J	6.5%	0.042	4.9	Pass
PFOS	µg/Kg	1.22	1.09	0.396	J	0.334	J	17.0%	0.062	4.9	Pass
PFPeA	µg/Kg	1.22	1.09	0.129	J	0.110	J	15.9%	0.019	4.9	Pass
PFTeDA	µg/Kg	1.22	1.09	0.061	U	0.059	U	3.3%	0.0020	4.9	Pass
PFTrDA	µg/Kg	1.22	1.09	0.122	U	0.118	U	3.3%	0.0040	4.9	Pass
PFUnDA	µg/Kg	1.22	1.09	0.073	J	0.072	J	1.4%	0.0010	4.9	Pass
General Chemistry											
pH	SU	1.00	5.00	7.26		7.22		0.55%	0.040	4.0	Pass
TOC	mg/Kg	250	1250	14400		15000		4.1%	600	1000	Pass

Control limit [sample]>5xLOQ use 50%
[sample]<5xLOQ use Delta<4xLOQ

Camp Smith
Field Duplicates

Client Sample ID:				CS-MW001S-GW		CS-MW001S-GW-D					
Date Sampled:				7/24/21		7/24/21					
	Units	LOQ	5x LOQ	Sample Conc		Duplicate Conc		% RPD	Delta	2x LOQ	Pass/ Fail
Perfluorinated Alkyl Substances											
6:2 FTS	ng/L	4.00	1.09	9.15		8.61		6.1%	0.54	8.0	Pass
8:2 FTS	ng/L	4.00	1.09	3.00	U	3.00	U	0.0%	0.0	8.0	Pass
NEtFOSAA	ng/L	8.00	1.09	4.00	U	4.00	U	0.0%	0.0	16	Pass
NMeFOSAA	ng/L	8.00	1.09	4.00	U	4.00	U	0.0%	0.0	16	Pass
PFBA	ng/L	4.00	1.09	2.66	J	2.78	J	4.4%	0.120	8.0	Pass
PFBS	ng/L	4.00	1.09	2.43	J	2.48	J	2.0%	0.050	8.0	Pass
PFDA	ng/L	4.00	1.09	3.00	U	3.00	U	0.0%	0.0	8.0	Pass
PFDoA	ng/L	4.00	1.09	3.00	U	3.00	U	0.0%	0.0	8.0	Pass
PFHpA	ng/L	4.00	1.09	1.74	J	1.85	J	6.1%	0.11	8.0	Pass
PFHxA	ng/L	4.00	1.09	2.37	J	2.45	J	3.3%	0.080	8.0	Pass
PFHxS	ng/L	4.00	1.09	3.81	J	3.80	J	0.3%	0.010	8.0	Pass
PFNA	ng/L	4.00	1.09	2.00	U	2.00	U	0.0%	0.0	8.0	Pass
PFOA	ng/L	4.00	1.09	14.3		14.5		1.4%	0.20	8.0	Pass
PFOS	ng/L	4.00	1.09	5.75		5.81		1.0%	0.060	8.0	Pass
PFPeA	ng/L	4.00	1.09	1.72	J	1.85	J	7.3%	0.13	8.0	Pass
PFTeDA	ng/L	4.00	1.09	3.00	U	3.00	U	0.0%	0.0	8.0	Pass
PFTrDA	ng/L	4.00	1.09	3.00	U	3.00	U	0.0%	0.0	8.0	Pass
PFUnDA	ng/L	4.00	1.09	3.00	U	3.00	U	0.0%	0.0	8.0	Pass

Control limit [sample]>5xLOQ use 35%
[sample]<5xLOQ use Delta<2xLOQ

Camp Smith
Field Duplicates

Client Sample ID:				CS-MW003S-SB-40-42		CS-MW003S-SB-40-42-D					
Date Sampled:				7/25/21		7/25/21					
	Units	LOQ	5x LOQ	Sample Conc		Duplicate Conc		% RPD	Delta	4x LOQ	Pass/ Fail
Perfluorinated Alkyl Substances											
6:2 FTS	µg/Kg	1.28	1.09	0.257	U	0.260	U	1.2%	0.0030	5.1	Pass
8:2 FTS	µg/Kg	1.28	1.09	0.128	U	0.130	U	1.6%	0.0020	5.1	Pass
NEtFOSAA	µg/Kg	1.28	1.09	0.128	U	0.130	U	1.6%	0.0020	5.1	Pass
NMeFOSAA	µg/Kg	1.28	1.09	0.064	U	0.065	U	1.6%	0.0010	5.1	Pass
PFBA	µg/Kg	1.28	1.09	0.128	U	0.130	U	1.6%	0.0020	5.1	Pass
PFBS	µg/Kg	1.28	1.09	0.064	U	0.065	U	1.6%	0.0010	5.1	Pass
PFDA	µg/Kg	1.28	1.09	0.128	U	0.130	U	1.6%	0.0020	5.1	Pass
PFDoA	µg/Kg	1.28	1.09	0.128	U	0.130	U	1.6%	0.0020	5.1	Pass
PFHpA	µg/Kg	1.28	1.09	0.064	U	0.065	U	1.6%	0.0010	5.1	Pass
PFHxA	µg/Kg	1.28	1.09	0.026	J	0.065	U	85.7%	0.039	5.1	Pass
PFHxS	µg/Kg	1.28	1.09	0.128	U	0.130	U	1.6%	0.0020	5.1	Pass
PFNA	µg/Kg	1.28	1.09	0.064	U	0.065	U	1.6%	0.0010	5.1	Pass
PFOA	µg/Kg	1.28	1.09	0.257	U	0.260	U	1.2%	0.0030	5.1	Pass
PFOS	µg/Kg	1.28	1.09	0.131	J	0.101	J	25.9%	0.030	5.1	Pass
PFPeA	µg/Kg	1.28	1.09	0.064	U	0.065	U	1.6%	0.0	5.1	Pass
PFTeDA	µg/Kg	1.28	1.09	0.064	U	0.065	U	1.6%	0.0010	5.1	Pass
PFTrDA	µg/Kg	1.28	1.09	0.128	U	0.130	U	1.6%	0.0020	5.1	Pass
PFUnDA	µg/Kg	1.28	1.09	0.064	U	0.065	U	1.6%	0.0010	5.1	Pass

Control limit [sample]>5xLOQ use 50%
[sample]<5xLOQ use Delta<4xLOQ

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221040641	Client Sample ID:	CS-DECON-040521
Collect Date:	04/05/21 Time: 1230	GCAL Sample ID:	22104064101
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ2
Sample Amt:	125 mL	Lab File ID:	2210409A_34.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: MRA
Prep Date:		Analysis Date:	04/09/21 Time: 1857
Prep Batch:	707793	Analytical Batch:	708250
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	2.00	U	0.940	2.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	2.00	U	0.900	2.00	4.00
2991-50-6	NEtFOSAA	4.00	U	0.970	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.910	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	2.88	J	0.810	2.00	4.00
335-76-2	Perfluorodecanoic acid	2.00	UQ	0.860	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	UQ	0.780	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	2.00	U	0.810	2.00	4.00
335-67-1	Perfluorooctanoic acid	2.09	J	0.950	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	2.00	U	0.980	2.00	4.00
72629-94-8	Perfluorotridecanoic acid	2.00	UQ	0.990	2.00	4.00
2058-94-8	Perfluoroundecanoic acid	2.00	U	0.950	2.00	4.00

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221040641	Client Sample ID:	CS-DECON-040521RE
Collect Date:	04/05/21 Time: 1230	GCAL Sample ID:	22104064101RE
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ2
Sample Amt:	125 mL	Lab File ID:	2210412B_72.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: MRA
Prep Date:		Analysis Date:	04/13/21 Time: 0604
Prep Batch:	707793	Analytical Batch:	708255
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
307-55-1	Perfluorododecanoic acid	2.00	U	0.880	2.00	4.00
375-85-9	Perfluoroheptanoic acid	2.00	U	0.480	2.00	4.00
355-46-4	Perfluorohexanesulfonic acid	2.00	U	0.950	2.00	4.00
307-24-4	Perfluorohexanoic acid	1.48	J	0.990	2.00	4.00

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221040641	Client Sample ID:	CS-DECON-040521RE1
Collect Date:	04/05/21 Time: 1230	GCAL Sample ID:	22104064101RE1
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ2
Sample Amt:	125 mL	Lab File ID:	2210414A_81.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: MRA
Prep Date:		Analysis Date:	04/15/21 Time: 0536
Prep Batch:	708431	Analytical Batch:	708591
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
375-22-4	Perfluorobutanoic acid	1.67	J	0.900	2.00	4.00
2706-90-3	Perfluoropentanoic acid	1.03	J	0.850	2.00	4.00

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072417	Client Sample ID:	CS-MW004S-SB-07-09
Collect Date:	07/19/21 Time: 1115	GCAL Sample ID:	22107241701
Matrix:	Solid % Moisture: 19.8	Instrument ID:	QQQ3
Sample Amt:	5.02 g	Lab File ID:	2210731A_11.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	07/29/21	Analysis Date:	07/31/21 Time: 1326
Prep Batch:	717227	Analytical Batch:	717622
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.248	U	0.075	0.248	1.24
39108-34-4	8:2 Fluorotelomersulfonic acid	0.124	U	0.037	0.124	1.24
2991-50-6	NEtFOSAA	0.124	U	0.037	0.124	1.24
2355-31-9	NMeFOSAA	0.062	U	0.025	0.062	1.24
375-73-5	Perfluorobutanesulfonic acid	0.062	U	0.025	0.062	1.24
375-22-4	Perfluorobutanoic acid	0.124	U	0.050	0.124	1.24
335-76-2	Perfluorodecanoic acid	0.124	U	0.050	0.124	1.24
307-55-1	Perfluorododecanoic acid	0.062	U	0.025	0.062	1.24
375-85-9	Perfluoroheptanoic acid	0.062	U	0.025	0.062	1.24
355-46-4	Perfluorohexanesulfonic acid	0.124	U	0.037	0.124	1.24
307-24-4	Perfluorohexanoic acid	0.062	U	0.025	0.062	1.24
375-95-1	Perfluorononanoic acid	0.062	U	0.025	0.062	1.24
1763-23-1	Perfluorooctanesulfonic acid	0.248	U	0.062	0.248	1.24
335-67-1	Perfluorooctanoic acid	0.248	U	0.099	0.248	1.24
2706-90-3	Perfluoropentanoic acid	0.062	U	0.025	0.062	1.24
376-06-7	Perfluorotetradecanoic acid	0.062	U	0.025	0.062	1.24
72629-94-8	Perfluorotridecanoic acid	0.124	U	0.037	0.124	1.24
2058-94-8	Perfluoroundecanoic acid	0.062	U	0.025	0.062	1.24

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072417	Client Sample ID:	CS-MW001S-SB-00-02
Collect Date:	07/20/21 Time: 1315	GCAL Sample ID:	22107241702
Matrix:	Solid % Moisture: 19.0	Instrument ID:	QQQ3
Sample Amt:	5.05 g	Lab File ID:	2210731A_12.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	07/29/21	Analysis Date:	07/31/21 Time: 1341
Prep Batch:	717227	Analytical Batch:	717622
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.244	U	0.073	0.244	1.22
39108-34-4	8:2 Fluorotelomersulfonic acid	0.122	U	0.037	0.122	1.22
2991-50-6	NEtFOSAA	0.122	U	0.037	0.122	1.22
2355-31-9	NMeFOSAA	0.061	U	0.024	0.061	1.22
375-73-5	Perfluorobutanesulfonic acid	0.034	J	0.024	0.061	1.22
375-22-4	Perfluorobutanoic acid	0.224	J	0.049	0.122	1.22
335-76-2	Perfluorodecanoic acid	0.093	J	0.049	0.122	1.22
307-55-1	Perfluorododecanoic acid	0.032	J	0.024	0.061	1.22
375-85-9	Perfluoroheptanoic acid	0.134	J	0.024	0.061	1.22
355-46-4	Perfluorohexanesulfonic acid	0.122	U	0.037	0.122	1.22
307-24-4	Perfluorohexanoic acid	0.123	J	0.024	0.061	1.22
375-95-1	Perfluorononanoic acid	0.217	J	0.024	0.061	1.22
1763-23-1	Perfluorooctanesulfonic acid	0.396	J	0.061	0.244	1.22
335-67-1	Perfluorooctanoic acid	0.669	J	0.098	0.244	1.22
2706-90-3	Perfluoropentanoic acid	0.129	J	0.024	0.061	1.22
376-06-7	Perfluorotetradecanoic acid	0.061	U	0.024	0.061	1.22
72629-94-8	Perfluorotridecanoic acid	0.122	U	0.037	0.122	1.22
2058-94-8	Perfluoroundecanoic acid	0.073	J	0.024	0.061	1.22

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072417	Client Sample ID:	CS-MW001S-SB-00-02-D
Collect Date:	07/20/21 Time: 1315	GCAL Sample ID:	22107241703
Matrix:	Solid % Moisture: 15.7	Instrument ID:	QQQ3
Sample Amt:	5.03 g	Lab File ID:	2210731A_13.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	07/29/21	Analysis Date:	07/31/21 Time: 1355
Prep Batch:	717227	Analytical Batch:	717622
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.236	U	0.071	0.236	1.18
39108-34-4	8:2 Fluorotelomersulfonic acid	0.118	U	0.035	0.118	1.18
2991-50-6	NEtFOSAA	0.118	U	0.035	0.118	1.18
2355-31-9	NMeFOSAA	0.059	U	0.024	0.059	1.18
375-73-5	Perfluorobutanesulfonic acid	0.034	J	0.024	0.059	1.18
375-22-4	Perfluorobutanoic acid	0.207	J	0.047	0.118	1.18
335-76-2	Perfluorodecanoic acid	0.085	J	0.047	0.118	1.18
307-55-1	Perfluorododecanoic acid	0.030	J	0.024	0.059	1.18
375-85-9	Perfluoroheptanoic acid	0.126	J	0.024	0.059	1.18
355-46-4	Perfluorohexanesulfonic acid	0.118	U	0.035	0.118	1.18
307-24-4	Perfluorohexanoic acid	0.113	J	0.024	0.059	1.18
375-95-1	Perfluorononanoic acid	0.197	J	0.024	0.059	1.18
1763-23-1	Perfluorooctanesulfonic acid	0.334	J	0.059	0.236	1.18
335-67-1	Perfluorooctanoic acid	0.627	J	0.094	0.236	1.18
2706-90-3	Perfluoropentanoic acid	0.110	J	0.024	0.059	1.18
376-06-7	Perfluorotetradecanoic acid	0.059	U	0.024	0.059	1.18
72629-94-8	Perfluorotridecanoic acid	0.118	U	0.035	0.118	1.18
2058-94-8	Perfluoroundecanoic acid	0.072	J	0.024	0.059	1.18

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072417	Client Sample ID:	CS-MW001D-SB-08-10
Collect Date:	07/20/21 Time: 1415	GCAL Sample ID:	22107241704
Matrix:	Solid % Moisture: 16.8	Instrument ID:	QQQ3
Sample Amt:	5.02 g	Lab File ID:	2210731A_14.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	07/29/21	Analysis Date:	07/31/21 Time: 1410
Prep Batch:	717227	Analytical Batch:	717622
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.239	U	0.072	0.239	1.20
39108-34-4	8:2 Fluorotelomersulfonic acid	0.120	U	0.036	0.120	1.20
2991-50-6	NEtFOSAA	0.120	U	0.036	0.120	1.20
2355-31-9	NMeFOSAA	0.060	U	0.024	0.060	1.20
375-73-5	Perfluorobutanesulfonic acid	0.025	J	0.024	0.060	1.20
375-22-4	Perfluorobutanoic acid	0.120	U	0.048	0.120	1.20
335-76-2	Perfluorodecanoic acid	0.120	U	0.048	0.120	1.20
307-55-1	Perfluorododecanoic acid	0.060	U	0.024	0.060	1.20
375-85-9	Perfluoroheptanoic acid	0.060	U	0.024	0.060	1.20
355-46-4	Perfluorohexanesulfonic acid	0.120	U	0.036	0.120	1.20
307-24-4	Perfluorohexanoic acid	0.034	J	0.024	0.060	1.20
375-95-1	Perfluorononanoic acid	0.060	U	0.024	0.060	1.20
1763-23-1	Perfluorooctanesulfonic acid	0.117	J	0.060	0.239	1.20
335-67-1	Perfluorooctanoic acid	0.129	J	0.096	0.239	1.20
2706-90-3	Perfluoropentanoic acid	0.060	U	0.024	0.060	1.20
376-06-7	Perfluorotetradecanoic acid	0.060	U	0.024	0.060	1.20
72629-94-8	Perfluorotridecanoic acid	0.120	U	0.036	0.120	1.20
2058-94-8	Perfluoroundecanoic acid	0.060	U	0.024	0.060	1.20

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072417	Client Sample ID:	CS-MW004S-SB-00-02
Collect Date:	07/19/21 Time: 1100	GCAL Sample ID:	22107241705
Matrix:	Solid % Moisture: 14.3	Instrument ID:	QQQ3
Sample Amt:	5.01 g	Lab File ID:	2210731A_15.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	07/29/21	Analysis Date:	07/31/21 Time: 1425
Prep Batch:	717227	Analytical Batch:	717622
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.233	U	0.070	0.233	1.16
39108-34-4	8:2 Fluorotelomersulfonic acid	0.116	U	0.035	0.116	1.16
2991-50-6	NEtFOSAA	0.116	U	0.035	0.116	1.16
2355-31-9	NMeFOSAA	0.058	U	0.023	0.058	1.16
375-73-5	Perfluorobutanesulfonic acid	0.058	U	0.023	0.058	1.16
375-22-4	Perfluorobutanoic acid	0.059	J	0.047	0.116	1.16
335-76-2	Perfluorodecanoic acid	0.116	U	0.047	0.116	1.16
307-55-1	Perfluorododecanoic acid	0.058	U	0.023	0.058	1.16
375-85-9	Perfluoroheptanoic acid	0.033	J	0.023	0.058	1.16
355-46-4	Perfluorohexanesulfonic acid	0.048	J	0.035	0.116	1.16
307-24-4	Perfluorohexanoic acid	0.042	J	0.023	0.058	1.16
375-95-1	Perfluorononanoic acid	0.058	U	0.023	0.058	1.16
1763-23-1	Perfluorooctanesulfonic acid	0.283	J	0.058	0.233	1.16
335-67-1	Perfluorooctanoic acid	0.110	J	0.093	0.233	1.16
2706-90-3	Perfluoropentanoic acid	0.040	J	0.023	0.058	1.16
376-06-7	Perfluorotetradecanoic acid	0.058	U	0.023	0.058	1.16
72629-94-8	Perfluorotridecanoic acid	0.116	U	0.035	0.116	1.16
2058-94-8	Perfluoroundecanoic acid	0.058	U	0.023	0.058	1.16

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072417	Client Sample ID:	CS-MW004S-GW
Collect Date:	07/22/21 Time: 1350	GCAL Sample ID:	22107241706
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ3
Sample Amt:	125 mL	Lab File ID:	2210728B_12.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	07/27/21	Analysis Date:	07/28/21 Time: 2312
Prep Batch:	717017	Analytical Batch:	717350
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	224	J	1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	2.00	U	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	4.57		1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	3.00	U	1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	3.00	U	1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	2.20	J	0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	1.04	J	0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	1.22	J	0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	1.46	J	0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072417	Client Sample ID:	CS-ERB-01
Collect Date:	07/22/21 Time: 1520	GCAL Sample ID:	22107241709
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ3
Sample Amt:	125 mL	Lab File ID:	2210729B_5.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	07/28/21	Analysis Date:	07/29/21 Time: 1513
Prep Batch:	717224	Analytical Batch:	717492
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	23.3		1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	2.00	U	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	3.50	U	1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	3.00	U	1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	3.00	U	1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	2.00	U	0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	2.00	U	0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	2.00	U	0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	2.00	U	0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	CS-MW002D-SB-39-41
Collect Date:	07/23/21 Time: 1050	GCAL Sample ID:	22107280701
Matrix:	Solid % Moisture: 10.1	Instrument ID:	QQQ3
Sample Amt:	5.03 g	Lab File ID:	2210804D_20.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/02/21	Analysis Date:	08/05/21 Time: 0315
Prep Batch:	717471	Analytical Batch:	718007
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.221	U	0.066	0.221	1.11
39108-34-4	8:2 Fluorotelomersulfonic acid	0.111	U	0.033	0.111	1.11
2991-50-6	NEtFOSAA	0.111	U	0.033	0.111	1.11
2355-31-9	NMeFOSAA	0.055	U	0.022	0.055	1.11
375-73-5	Perfluorobutanesulfonic acid	0.055	U	0.022	0.055	1.11
375-22-4	Perfluorobutanoic acid	0.111	U	0.044	0.111	1.11
335-76-2	Perfluorodecanoic acid	0.111	U	0.044	0.111	1.11
307-55-1	Perfluorododecanoic acid	0.055	U	0.022	0.055	1.11
375-85-9	Perfluoroheptanoic acid	0.055	U	0.022	0.055	1.11
355-46-4	Perfluorohexanesulfonic acid	0.111	U	0.033	0.111	1.11
307-24-4	Perfluorohexanoic acid	0.055	U	0.022	0.055	1.11
375-95-1	Perfluorononanoic acid	0.055	U	0.022	0.055	1.11
1763-23-1	Perfluorooctanesulfonic acid	0.151	J	0.055	0.221	1.11
335-67-1	Perfluorooctanoic acid	0.221	U	0.088	0.221	1.11
2706-90-3	Perfluoropentanoic acid	0.055	U	0.022	0.055	1.11
376-06-7	Perfluorotetradecanoic acid	0.055	U	0.022	0.055	1.11
72629-94-8	Perfluorotridecanoic acid	0.111	U	0.033	0.111	1.11
2058-94-8	Perfluoroundecanoic acid	0.055	U	0.022	0.055	1.11

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	AOI2-SB2-00-02
Collect Date:	07/24/21 Time: 1000	GCAL Sample ID:	22107280703
Matrix:	Solid % Moisture: 7.9	Instrument ID:	QQQ3
Sample Amt:	5.02 g	Lab File ID:	2210804D_21.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/02/21	Analysis Date:	08/05/21 Time: 0330
Prep Batch:	717471	Analytical Batch:	718007
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.216	U	0.065	0.216	1.08
39108-34-4	8:2 Fluorotelomersulfonic acid	0.077	J	0.032	0.108	1.08
2991-50-6	NEtFOSAA	0.108	U	0.032	0.108	1.08
2355-31-9	NMeFOSAA	0.054	U	0.022	0.054	1.08
375-73-5	Perfluorobutanesulfonic acid	0.054	U	0.022	0.054	1.08
375-22-4	Perfluorobutanoic acid	0.108	U	0.043	0.108	1.08
335-76-2	Perfluorodecanoic acid	0.108	U	0.043	0.108	1.08
307-55-1	Perfluorododecanoic acid	0.025	J	0.022	0.054	1.08
375-85-9	Perfluoroheptanoic acid	0.054	U	0.022	0.054	1.08
355-46-4	Perfluorohexanesulfonic acid	0.053	J	0.032	0.108	1.08
307-24-4	Perfluorohexanoic acid	0.054	U	0.022	0.054	1.08
375-95-1	Perfluorononanoic acid	0.054	U	0.022	0.054	1.08
1763-23-1	Perfluorooctanesulfonic acid	4.56		0.054	0.216	1.08
335-67-1	Perfluorooctanoic acid	0.216	U	0.086	0.216	1.08
2706-90-3	Perfluoropentanoic acid	0.054	U	0.022	0.054	1.08
376-06-7	Perfluorotetradecanoic acid	0.054	U	0.022	0.054	1.08
72629-94-8	Perfluorotridecanoic acid	0.108	U	0.032	0.108	1.08
2058-94-8	Perfluoroundecanoic acid	0.027	J	0.022	0.054	1.08

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	AOI2-SB2-02-04
Collect Date:	07/24/21 Time: 1010	GCAL Sample ID:	22107280704
Matrix:	Solid % Moisture: 25.6	Instrument ID:	QQQ3
Sample Amt:	5 g	Lab File ID:	2210804D_22.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/02/21	Analysis Date:	08/05/21 Time: 0344
Prep Batch:	717471	Analytical Batch:	718007
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.269	U	0.081	0.269	1.34
39108-34-4	8:2 Fluorotelomersulfonic acid	0.670	J	0.040	0.134	1.34
2991-50-6	NEtFOSAA	0.134	U	0.040	0.134	1.34
2355-31-9	NMeFOSAA	0.067	U	0.027	0.067	1.34
375-73-5	Perfluorobutanesulfonic acid	0.067	U	0.027	0.067	1.34
375-22-4	Perfluorobutanoic acid	0.134	U	0.054	0.134	1.34
335-76-2	Perfluorodecanoic acid	0.066	J	0.054	0.134	1.34
307-55-1	Perfluorododecanoic acid	0.067	U	0.027	0.067	1.34
375-85-9	Perfluoroheptanoic acid	0.031	J	0.027	0.067	1.34
355-46-4	Perfluorohexanesulfonic acid	0.168	J	0.040	0.134	1.34
307-24-4	Perfluorohexanoic acid	0.033	J	0.027	0.067	1.34
375-95-1	Perfluorononanoic acid	0.046	J	0.027	0.067	1.34
1763-23-1	Perfluorooctanesulfonic acid	24.4		0.067	0.269	1.34
335-67-1	Perfluorooctanoic acid	0.269	U	0.108	0.269	1.34
2706-90-3	Perfluoropentanoic acid	0.067	U	0.027	0.067	1.34
376-06-7	Perfluorotetradecanoic acid	0.067	U	0.027	0.067	1.34
72629-94-8	Perfluorotridecanoic acid	0.134	U	0.040	0.134	1.34
2058-94-8	Perfluoroundecanoic acid	0.037	J	0.027	0.067	1.34

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	AOI2-SB3-00-02
Collect Date:	07/24/21 Time: 1040	GCAL Sample ID:	22107280705
Matrix:	Solid % Moisture: 4.6	Instrument ID:	QQQ3
Sample Amt:	5.01 g	Lab File ID:	2210804D_23.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/02/21	Analysis Date:	08/05/21 Time: 0359
Prep Batch:	717471	Analytical Batch:	718007
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.460	J	0.063	0.209	1.05
39108-34-4	8:2 Fluorotelomersulfonic acid	7.65		0.031	0.105	1.05
2991-50-6	NEtFOSAA	0.105	U	0.031	0.105	1.05
2355-31-9	NMeFOSAA	0.052	U	0.021	0.052	1.05
375-73-5	Perfluorobutanesulfonic acid	0.052	U	0.021	0.052	1.05
375-22-4	Perfluorobutanoic acid	0.105	U	0.042	0.105	1.05
335-76-2	Perfluorodecanoic acid	0.111	J	0.042	0.105	1.05
307-55-1	Perfluorododecanoic acid	0.052	U	0.021	0.052	1.05
375-85-9	Perfluoroheptanoic acid	0.061	J	0.021	0.052	1.05
355-46-4	Perfluorohexanesulfonic acid	0.150	J	0.031	0.105	1.05
307-24-4	Perfluorohexanoic acid	0.033	J	0.021	0.052	1.05
375-95-1	Perfluorononanoic acid	0.071	J	0.021	0.052	1.05
1763-23-1	Perfluorooctanesulfonic acid	34.2		0.052	0.209	1.05
335-67-1	Perfluorooctanoic acid	0.126	J	0.084	0.209	1.05
2706-90-3	Perfluoropentanoic acid	0.021	J	0.021	0.052	1.05
376-06-7	Perfluorotetradecanoic acid	0.052	U	0.021	0.052	1.05
72629-94-8	Perfluorotridecanoic acid	0.105	U	0.031	0.105	1.05
2058-94-8	Perfluoroundecanoic acid	0.021	J	0.021	0.052	1.05

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	AOI2-SB3-02-04
Collect Date:	07/24/21 Time: 1050	GCAL Sample ID:	22107280706
Matrix:	Solid % Moisture: 16.8	Instrument ID:	QQQ3
Sample Amt:	5.04 g	Lab File ID:	2210804D_39.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/02/21	Analysis Date:	08/05/21 Time: 0753
Prep Batch:	717471	Analytical Batch:	718007
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	3.10		0.072	0.239	1.19
39108-34-4	8:2 Fluorotelomersulfonic acid	30.2		0.036	0.119	1.19
2991-50-6	NEtFOSAA	0.119	U	0.036	0.119	1.19
2355-31-9	NMeFOSAA	0.060	U	0.024	0.060	1.19
375-73-5	Perfluorobutanesulfonic acid	0.060	U	0.024	0.060	1.19
375-22-4	Perfluorobutanoic acid	0.050	J	0.048	0.119	1.19
335-76-2	Perfluorodecanoic acid	0.199	J	0.048	0.119	1.19
307-55-1	Perfluorododecanoic acid	0.025	J	0.024	0.060	1.19
375-85-9	Perfluoroheptanoic acid	0.195	J	0.024	0.060	1.19
355-46-4	Perfluorohexanesulfonic acid	0.860	J	0.036	0.119	1.19
307-24-4	Perfluorohexanoic acid	0.198	J	0.024	0.060	1.19
375-95-1	Perfluorononanoic acid	0.285	J	0.024	0.060	1.19
335-67-1	Perfluorooctanoic acid	0.588	J	0.095	0.239	1.19
2706-90-3	Perfluoropentanoic acid	0.121	J	0.024	0.060	1.19
376-06-7	Perfluorotetradecanoic acid	0.060	U	0.024	0.060	1.19
72629-94-8	Perfluorotridecanoic acid	0.119	U	0.036	0.119	1.19
2058-94-8	Perfluoroundecanoic acid	0.028	J	0.024	0.060	1.19

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	AOI2-SB4-00-02
Collect Date:	07/24/21 Time: 1100	GCAL Sample ID:	22107280707
Matrix:	Solid % Moisture: 13.2	Instrument ID:	QQQ3
Sample Amt:	5.02 g	Lab File ID:	2210804D_25.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/02/21	Analysis Date:	08/05/21 Time: 0428
Prep Batch:	717471	Analytical Batch:	718007
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.230	U	0.069	0.230	1.15
39108-34-4	8:2 Fluorotelomersulfonic acid	0.065	J	0.034	0.115	1.15
2991-50-6	NEtFOSAA	0.115	U	0.034	0.115	1.15
2355-31-9	NMeFOSAA	0.057	U	0.023	0.057	1.15
375-73-5	Perfluorobutanesulfonic acid	0.057	U	0.023	0.057	1.15
375-22-4	Perfluorobutanoic acid	0.115	U	0.046	0.115	1.15
335-76-2	Perfluorodecanoic acid	0.115	U	0.046	0.115	1.15
307-55-1	Perfluorododecanoic acid	0.057	U	0.023	0.057	1.15
375-85-9	Perfluoroheptanoic acid	0.057	U	0.023	0.057	1.15
355-46-4	Perfluorohexanesulfonic acid	0.067	J	0.034	0.115	1.15
307-24-4	Perfluorohexanoic acid	0.057	U	0.023	0.057	1.15
375-95-1	Perfluorononanoic acid	0.057	U	0.023	0.057	1.15
1763-23-1	Perfluorooctanesulfonic acid	1.25		0.057	0.230	1.15
335-67-1	Perfluorooctanoic acid	0.230	U	0.092	0.230	1.15
2706-90-3	Perfluoropentanoic acid	0.057	U	0.023	0.057	1.15
376-06-7	Perfluorotetradecanoic acid	0.057	U	0.023	0.057	1.15
72629-94-8	Perfluorotridecanoic acid	0.115	U	0.034	0.115	1.15
2058-94-8	Perfluoroundecanoic acid	0.057	U	0.023	0.057	1.15

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	AOI2-SB5-00-02
Collect Date:	07/24/21 Time: 1125	GCAL Sample ID:	22107280710
Matrix:	Solid % Moisture: 6.3	Instrument ID:	QQQ3
Sample Amt:	5 g	Lab File ID:	2210804D_27.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/02/21	Analysis Date:	08/05/21 Time: 0457
Prep Batch:	717471	Analytical Batch:	718007
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.213	U	0.064	0.213	1.07
39108-34-4	8:2 Fluorotelomersulfonic acid	0.107	U	0.032	0.107	1.07
2991-50-6	NEtFOSAA	0.107	U	0.032	0.107	1.07
2355-31-9	NMeFOSAA	0.053	U	0.021	0.053	1.07
375-73-5	Perfluorobutanesulfonic acid	0.053	U	0.021	0.053	1.07
375-22-4	Perfluorobutanoic acid	0.107	U	0.043	0.107	1.07
335-76-2	Perfluorodecanoic acid	0.107	U	0.043	0.107	1.07
307-55-1	Perfluorododecanoic acid	0.053	U	0.021	0.053	1.07
375-85-9	Perfluoroheptanoic acid	0.030	J	0.021	0.053	1.07
355-46-4	Perfluorohexanesulfonic acid	0.107	U	0.032	0.107	1.07
307-24-4	Perfluorohexanoic acid	0.095	J	0.021	0.053	1.07
375-95-1	Perfluorononanoic acid	0.032	J	0.021	0.053	1.07
1763-23-1	Perfluorooctanesulfonic acid	0.099	J	0.053	0.213	1.07
335-67-1	Perfluorooctanoic acid	0.213	U	0.085	0.213	1.07
2706-90-3	Perfluoropentanoic acid	0.095	J	0.021	0.053	1.07
376-06-7	Perfluorotetradecanoic acid	0.053	U	0.021	0.053	1.07
72629-94-8	Perfluorotridecanoic acid	0.107	U	0.032	0.107	1.07
2058-94-8	Perfluoroundecanoic acid	0.053	U	0.021	0.053	1.07

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	AOI2-SB4-02-04
Collect Date:	07/24/21 Time: 1110	GCAL Sample ID:	22107280711
Matrix:	Solid % Moisture: 4.6	Instrument ID:	QQQ3
Sample Amt:	5.05 g	Lab File ID:	2210804D_28.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/02/21	Analysis Date:	08/05/21 Time: 0512
Prep Batch:	717471	Analytical Batch:	718007
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.208	U	0.062	0.208	1.04
39108-34-4	8:2 Fluorotelomersulfonic acid	2.08		0.031	0.104	1.04
2991-50-6	NEtFOSAA	0.104	U	0.031	0.104	1.04
2355-31-9	NMeFOSAA	0.052	U	0.021	0.052	1.04
375-73-5	Perfluorobutanesulfonic acid	0.052	U	0.021	0.052	1.04
375-22-4	Perfluorobutanoic acid	0.104	U	0.042	0.104	1.04
335-76-2	Perfluorodecanoic acid	0.104	U	0.042	0.104	1.04
307-55-1	Perfluorododecanoic acid	0.052	U	0.021	0.052	1.04
375-85-9	Perfluoroheptanoic acid	0.022	J	0.021	0.052	1.04
355-46-4	Perfluorohexanesulfonic acid	0.079	J	0.031	0.104	1.04
307-24-4	Perfluorohexanoic acid	0.052	U	0.021	0.052	1.04
375-95-1	Perfluorononanoic acid	0.052	U	0.021	0.052	1.04
1763-23-1	Perfluorooctanesulfonic acid	17.6		0.052	0.208	1.04
335-67-1	Perfluorooctanoic acid	0.208	U	0.083	0.208	1.04
2706-90-3	Perfluoropentanoic acid	0.025	J	0.021	0.052	1.04
376-06-7	Perfluorotetradecanoic acid	0.052	U	0.021	0.052	1.04
72629-94-8	Perfluorotridecanoic acid	0.104	U	0.031	0.104	1.04
2058-94-8	Perfluoroundecanoic acid	0.022	J	0.021	0.052	1.04

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	AOI2-SB5-02-04
Collect Date:	07/24/21 Time: 1130	GCAL Sample ID:	22107280712
Matrix:	Solid % Moisture: 10.5	Instrument ID:	QQQ3
Sample Amt:	5.03 g	Lab File ID:	2210804D_29.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/02/21	Analysis Date:	08/05/21 Time: 0526
Prep Batch:	717471	Analytical Batch:	718007
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.222	U	0.067	0.222	1.11
39108-34-4	8:2 Fluorotelomersulfonic acid	0.426	J	0.033	0.111	1.11
2991-50-6	NEtFOSAA	0.111	U	0.033	0.111	1.11
2355-31-9	NMeFOSAA	0.056	U	0.022	0.056	1.11
375-73-5	Perfluorobutanesulfonic acid	0.056	U	0.022	0.056	1.11
375-22-4	Perfluorobutanoic acid	0.111	U	0.044	0.111	1.11
335-76-2	Perfluorodecanoic acid	0.111	U	0.044	0.111	1.11
307-55-1	Perfluorododecanoic acid	0.056	U	0.022	0.056	1.11
375-85-9	Perfluoroheptanoic acid	0.056	U	0.022	0.056	1.11
355-46-4	Perfluorohexanesulfonic acid	0.213	J	0.033	0.111	1.11
307-24-4	Perfluorohexanoic acid	0.033	J	0.022	0.056	1.11
375-95-1	Perfluorononanoic acid	0.056	U	0.022	0.056	1.11
1763-23-1	Perfluorooctanesulfonic acid	1.42	J	0.056	0.222	1.11
335-67-1	Perfluorooctanoic acid	0.222	U	0.089	0.222	1.11
2706-90-3	Perfluoropentanoic acid	0.056	U	0.022	0.056	1.11
376-06-7	Perfluorotetradecanoic acid	0.056	U	0.022	0.056	1.11
72629-94-8	Perfluorotridecanoic acid	0.111	U	0.033	0.111	1.11
2058-94-8	Perfluoroundecanoic acid	0.056	U	0.022	0.056	1.11

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	CS-ERB-02
Collect Date:	07/24/21 Time: 1145	GCAL Sample ID:	22107280715
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210818B_31.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/18/21	Analysis Date:	08/19/21 Time: 1349
Prep Batch:	719070	Analytical Batch:	719175
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	3.00	U	1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	2.00	U	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	3.50	U	1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	3.00	U	1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	3.00	U	1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	2.00	U	0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	2.00	U	0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	2.00	U	0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	2.00	U	0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	CS-ERB-03
Collect Date:	07/25/21 Time: 0815	GCAL Sample ID:	22107280716
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210804A_09.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: RXJ
Prep Date:	07/29/21	Analysis Date:	08/04/21 Time: 1340
Prep Batch:	717433	Analytical Batch:	717959
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	3.00	U	1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	2.00	U	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	3.50	U	1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	3.00	U	1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	3.00	U	1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	2.00	U	0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	2.00	U	0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	2.00	U	0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	2.00	U	0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	CS-FRB-01
Collect Date:	07/25/21 Time: 0845	GCAL Sample ID:	22107280717
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210804A_10.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: RXJ
Prep Date:	07/29/21	Analysis Date:	08/04/21 Time: 1355
Prep Batch:	717433	Analytical Batch:	717959
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	3.00	U	1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	2.00	U	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	3.50	U	1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	3.00	U	1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	3.00	U	1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	2.00	U	0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	2.00	U	0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	2.00	U	0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	2.00	U	0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	CS-MW001S-GW
Collect Date:	07/24/21 Time: 1045	GCAL Sample ID:	22107280718
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210804A_11.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: RXJ
Prep Date:	07/29/21	Analysis Date:	08/04/21 Time: 1409
Prep Batch:	717433	Analytical Batch:	717959
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	9.15		1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	2.43	J	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	2.66	J	1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	1.74	J	1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	3.81	J	1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	2.37	J	0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	5.75		0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	14.3		0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	1.72	J	0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	CS-MW001S-GW-D
Collect Date:	07/24/21 Time: 1045	GCAL Sample ID:	22107280719
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210804A_12.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: RXJ
Prep Date:	07/29/21	Analysis Date:	08/04/21 Time: 1424
Prep Batch:	717433	Analytical Batch:	717959
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	8.61		1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	2.48	J	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	2.78	J	1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	1.85	J	1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	3.80	J	1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	2.45	J	0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	5.81		0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	14.5		0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	1.85	J	0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	CS-MW001D-GW
Collect Date:	07/24/21 Time: 1320	GCAL Sample ID:	22107280720
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210804A_13.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: RXJ
Prep Date:	07/29/21	Analysis Date:	08/04/21 Time: 1438
Prep Batch:	717433	Analytical Batch:	717959
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	3.00	U	1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	1.75	J	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	5.12		1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	3.00	J	1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	7.05		1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	8.21		0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	10.8		0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	16.1		0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	7.28		0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	CS-DECON-072521
Collect Date:	07/25/21 Time: 0915	GCAL Sample ID:	22107280721
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210811B_16.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: RXJ
Prep Date:	08/10/21	Analysis Date:	08/11/21 Time: 2153
Prep Batch:	718318	Analytical Batch:	718586
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	3.00	U	1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	1.51	J	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	2.37	J	1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	3.00	U	1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	3.00	U	1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	2.09	J	0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	1.63	J	0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	1.37	J	0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	2.07	J	0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	CS-MW003S-SB-40-42
Collect Date:	07/25/21 Time: 0955	GCAL Sample ID:	22107280722
Matrix:	Solid % Moisture: 22.5	Instrument ID:	QQQ3
Sample Amt:	5.02 g	Lab File ID:	2210804D_32.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/02/21	Analysis Date:	08/05/21 Time: 0610
Prep Batch:	717471	Analytical Batch:	718007
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.257	U	0.077	0.257	1.28
39108-34-4	8:2 Fluorotelomersulfonic acid	0.128	U	0.039	0.128	1.28
2991-50-6	NEtFOSAA	0.128	U	0.039	0.128	1.28
2355-31-9	NMeFOSAA	0.064	U	0.026	0.064	1.28
375-73-5	Perfluorobutanesulfonic acid	0.064	U	0.026	0.064	1.28
375-22-4	Perfluorobutanoic acid	0.128	U	0.051	0.128	1.28
335-76-2	Perfluorodecanoic acid	0.128	U	0.051	0.128	1.28
307-55-1	Perfluorododecanoic acid	0.064	U	0.026	0.064	1.28
375-85-9	Perfluoroheptanoic acid	0.064	U	0.026	0.064	1.28
355-46-4	Perfluorohexanesulfonic acid	0.128	U	0.039	0.128	1.28
307-24-4	Perfluorohexanoic acid	0.026	J	0.026	0.064	1.28
375-95-1	Perfluorononanoic acid	0.064	U	0.026	0.064	1.28
1763-23-1	Perfluorooctanesulfonic acid	0.131	J	0.064	0.257	1.28
335-67-1	Perfluorooctanoic acid	0.257	U	0.103	0.257	1.28
2706-90-3	Perfluoropentanoic acid	0.064	U	0.026	0.064	1.28
376-06-7	Perfluorotetradecanoic acid	0.064	U	0.026	0.064	1.28
72629-94-8	Perfluorotridecanoic acid	0.128	U	0.039	0.128	1.28
2058-94-8	Perfluoroundecanoic acid	0.064	U	0.026	0.064	1.28

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	CS-MW003S-SB-40-42-D
Collect Date:	07/25/21 Time: 0955	GCAL Sample ID:	22107280723
Matrix:	Solid % Moisture: 23.3	Instrument ID:	QQQ3
Sample Amt:	5.01 g	Lab File ID:	2210804D_33.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/02/21	Analysis Date:	08/05/21 Time: 0625
Prep Batch:	717471	Analytical Batch:	718007
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.260	U	0.078	0.260	1.30
39108-34-4	8:2 Fluorotelomersulfonic acid	0.130	U	0.039	0.130	1.30
2991-50-6	NEtFOSAA	0.130	U	0.039	0.130	1.30
2355-31-9	NMeFOSAA	0.065	U	0.026	0.065	1.30
375-73-5	Perfluorobutanesulfonic acid	0.065	U	0.026	0.065	1.30
375-22-4	Perfluorobutanoic acid	0.130	U	0.052	0.130	1.30
335-76-2	Perfluorodecanoic acid	0.130	U	0.052	0.130	1.30
307-55-1	Perfluorododecanoic acid	0.065	U	0.026	0.065	1.30
375-85-9	Perfluoroheptanoic acid	0.065	U	0.026	0.065	1.30
355-46-4	Perfluorohexanesulfonic acid	0.130	U	0.039	0.130	1.30
307-24-4	Perfluorohexanoic acid	0.065	U	0.026	0.065	1.30
375-95-1	Perfluorononanoic acid	0.065	U	0.026	0.065	1.30
1763-23-1	Perfluorooctanesulfonic acid	0.101	J	0.065	0.260	1.30
335-67-1	Perfluorooctanoic acid	0.260	U	0.104	0.260	1.30
2706-90-3	Perfluoropentanoic acid	0.065	U	0.026	0.065	1.30
376-06-7	Perfluorotetradecanoic acid	0.065	U	0.026	0.065	1.30
72629-94-8	Perfluorotridecanoic acid	0.130	U	0.039	0.130	1.30
2058-94-8	Perfluoroundecanoic acid	0.065	U	0.026	0.065	1.30

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	CS-ST-045-072621
Collect Date:	07/26/21 Time: 1200	GCAL Sample ID:	22107280724
Matrix:	Solid % Moisture: 37.2	Instrument ID:	QQQ3
Sample Amt:	5.03 g	Lab File ID:	2210809C_6.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/06/21	Analysis Date:	08/10/21 Time: 0738
Prep Batch:	718109	Analytical Batch:	718366
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.316	U	0.095	0.316	1.58
39108-34-4	8:2 Fluorotelomersulfonic acid	0.158	UQ	0.047	0.158	1.58
2991-50-6	NEtFOSAA	0.158	UQ	0.047	0.158	1.58
2355-31-9	NMeFOSAA	0.079	UQ	0.032	0.079	1.58
375-73-5	Perfluorobutanesulfonic acid	0.079	UQ	0.032	0.079	1.58
375-22-4	Perfluorobutanoic acid	0.090	J	0.063	0.158	1.58
335-76-2	Perfluorodecanoic acid	0.158	U	0.063	0.158	1.58
307-55-1	Perfluorododecanoic acid	0.079	UQ	0.032	0.079	1.58
375-85-9	Perfluoroheptanoic acid	0.079	UQ	0.032	0.079	1.58
355-46-4	Perfluorohexanesulfonic acid	0.158	UQ	0.047	0.158	1.58
307-24-4	Perfluorohexanoic acid	0.032	JQ	0.032	0.079	1.58
375-95-1	Perfluorononanoic acid	0.079	UQ	0.032	0.079	1.58
1763-23-1	Perfluorooctanesulfonic acid	0.316	U	0.079	0.316	1.58
335-67-1	Perfluorooctanoic acid	0.316	U	0.127	0.316	1.58
2706-90-3	Perfluoropentanoic acid	0.079	UQ	0.032	0.079	1.58
376-06-7	Perfluorotetradecanoic acid	0.079	U	0.032	0.079	1.58
72629-94-8	Perfluorotridecanoic acid	0.158	UQ	0.047	0.158	1.58
2058-94-8	Perfluoroundecanoic acid	0.079	UQ	0.032	0.079	1.58

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072979	Client Sample ID:	CS-MW003S-GW
Collect Date:	07/27/21 Time: 1145	GCAL Sample ID:	22107297901
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210811B_17.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: RXJ
Prep Date:	08/10/21	Analysis Date:	08/11/21 Time: 2207
Prep Batch:	718318	Analytical Batch:	718586
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	12.6		1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	3.52	J	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	14.3		1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	27.0		1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	64.1		1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	43.2		0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	1.70	J	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	147		0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	21.2		0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	48.5		0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

FORM I SV-1

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072979	Client Sample ID:	CS-MW002D-GW
Collect Date:	07/28/21 Time: 0930	GCAL Sample ID:	22107297902
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210811B_18.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: RXJ
Prep Date:	08/10/21	Analysis Date:	08/11/21 Time: 2222
Prep Batch:	718318	Analytical Batch:	718586
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	10.1		1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	2.80	J	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	3.35	J	1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	2.75	J	1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	17.9		1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	8.52		0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	37.7		0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	4.80		0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	8.02		0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

FORM I SV-1

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	221072417	Client Sample ID:	CS-MW001S-SB-00-02
Collect Date:	07/20/21 1315	LAB Sample ID:	22107241702
Matrix:	Solid	Instrument ID:	PH01
% Solids:	NA	Analyst:	SLL2
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	07/24/21 1737
Prep Batch:	NA	Analytical Batch:	717009
Prep Method:	NA	Analytical Method:	EPA 9045D

ANALYTE	*RESULT*	*UNITS*	*Q*	*DL*	*LOD*	*LOQ*
pH	7.26	pH UNITS		1.00	1.00	1.00

FORM I - GENCHEM

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	221072417	Client Sample ID:	CS-MW001S-SB-00-02-D
Collect Date:	07/20/21 1315	LAB Sample ID:	22107241703
Matrix:	Solid	Instrument ID:	PH01
% Solids:	NA	Analyst:	SLL2
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	07/24/21 1741
Prep Batch:	NA	Analytical Batch:	717009
Prep Method:	NA	Analytical Method:	EPA 9045D

ANALYTE	*RESULT*	*UNITS*	*Q*	*DL*	*LOD*	*LOQ*
pH	7.22	pH UNITS		1.00	1.00	1.00

FORM I - GENCHEM

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	AOI2-SB4-00-02
Collect Date:	07/24/21 1100	LAB Sample ID:	22107280707
Matrix:	Solid	Instrument ID:	PH01
% Solids:	NA	Analyst:	SLL2
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	07/28/21 1343
Prep Batch:	NA	Analytical Batch:	717293
Prep Method:	NA	Analytical Method:	EPA 9045D

ANALYTE	*RESULT*	*UNITS*	*Q*	*DL*	*LOD*	*LOQ*
pH	7.86	pH UNITS		1.00	1.00	1.00

FORM I - GENCHEM

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	CS-MW003S-SB-40-42
Collect Date:	07/25/21 0955	LAB Sample ID:	22107280722
Matrix:	Solid	Instrument ID:	PH01
% Solids:	NA	Analyst:	SLL2
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	07/28/21 1344
Prep Batch:	NA	Analytical Batch:	717293
Prep Method:	NA	Analytical Method:	EPA 9045D

ANALYTE	*RESULT*	*UNITS*	*Q*	*DL*	*LOD*	*LOQ*
pH	8.31	pH UNITS		1.00	1.00	1.00

FORM I - GENCHEM

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	AOI2-SB4-00-02
Collect Date:	07/24/21 1100	LAB Sample ID:	22107280707
Matrix:	Solid	Instrument ID:	TOC6
% Solids:	NA	Analyst:	JGD
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	08/06/21 1234
Prep Batch:	NA	Analytical Batch:	718152
Prep Method:	NA	Analytical Method:	EPA 9060A

ANALYTE	*RESULT*	*UNITS*	*Q*	*DL*	*LOD*	*LOQ*
Total Organic Carbon	938	mg/kg		153	200	250

FORM I - GENCHEM

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	221072417	Client Sample ID:	CS-MW001S-SB-00-02
Collect Date:	07/20/21 1315	LAB Sample ID:	22107241702
Matrix:	Solid	Instrument ID:	TOC6
% Solids:	NA	Analyst:	JGD
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	08/05/21 1254
Prep Batch:	NA	Analytical Batch:	718045
Prep Method:	NA	Analytical Method:	EPA 9060A

ANALYTE	*RESULT*	*UNITS*	*Q*	*DL*	*LOD*	*LOQ*
Total Organic Carbon	14400	mg/kg		153	200	250

FORM I - GENCHEM

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	221072417	Client Sample ID:	CS-MW001S-SB-00-02-D
Collect Date:	07/20/21 1315	LAB Sample ID:	22107241703
Matrix:	Solid	Instrument ID:	TOC6
% Solids:	NA	Analyst:	JGD
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	08/05/21 1305
Prep Batch:	NA	Analytical Batch:	718045
Prep Method:	NA	Analytical Method:	EPA 9060A

ANALYTE	*RESULT*	*UNITS*	*Q*	*DL*	*LOD*	*LOQ*
Total Organic Carbon	15000	mg/kg		153	200	250

FORM I - GENCHEM

I

GENERAL CHEMISTRY ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	CS-MW003S-SB-40-42
Collect Date:	07/25/21 0955	LAB Sample ID:	22107280722
Matrix:	Solid	Instrument ID:	TOC6
% Solids:	NA	Analyst:	JGD
Sample Amt:	NA	Lab File ID:	NA
Prep Vol.:	NA	Dilution Factor:	1
Prep Date:	NA	Analysis Date:	08/06/21 1316
Prep Batch:	NA	Analytical Batch:	718152
Prep Method:	NA	Analytical Method:	EPA 9060A

ANALYTE	*RESULT*	*UNITS*	*Q*	*DL*	*LOD*	*LOQ*
Total Organic Carbon	529	mg/kg		153	200	250

FORM I - GENCHEM

DATA VALIDATION WORKSHEET

Per- and Polyfluorinated Compounds by LC/MS/MS

Reviewer: Tyler Bryant
Date: 9/1/2021
DV Level: **II** **III** **IV**

Project Name: Camp Smith
Project Number: 60552172
Laboratory: Pace Gulf Coast
SDG No.: 221040641 + 72417 + 72807 + 72979
Test Name: PFAS

Review Document:

__X__ National Functional Guidelines for Organic Data Review
__X__ DOD QSM 5.1, Table B-15
_____ Method 537 Rev. 1.1

1.0 Laboratory Deliverables		**Yes**	**No**	**NA**
1.1	Do Chain-of-Custody forms list all samples that were analyzed?	**X**		
1.2	Are all Chain-of-Custody forms signed, indicating sample chain-of-custody was maintained?	**X**		
1.3	Do sample preservation, collection and storage condition meet method requirement? 4±2°C If samples were received with the cooler temperature exceeding 6°C, then flag J(+)/UJ(-). If >20°C, J(+)/X(-)	**X**		
1.4	Do the traffic Reports, chain-of-custody, and lab narrative indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data?		**X**	

Notes:

2.0 Holding Times		**Yes**	**No**	**NA**
2.1	Have any technical holding times, determined from date of sampling to date of analysis, been exceeded? If yes, J(+)/UJ(-). Extraction: 14 days; Analysis: 40 days.		**X**	
2.2	Have any technical holding time grossly (twice the holding time) been exceeded? If yes, J(+)/X(-) .		**X**	

Notes:

3.0 Blanks (Laboratory and Field)		**Yes**	**No**	**NA**
3.1	Were method blanks (MB) prepared at the appropriate frequency (one per 20 samples, per batch per matrix?)	**X**		
3.2	Do any instrument/method blanks have positive results?	**X**		
3.3	Do any field equipment blanks/trip blanks have positive results?	**X**		

Notes: Several field and instrument blanks displayed target analyte concentrations greater than the detection limit.

DATA VALIDATION WORKSHEET

Per- and Polyfluorinated Compounds by LC/MS/MS

Reviewer: Tyler Bryant
Date: 9/1/2021
DV Level: **II** **III** **IV**

Project Name: Camp Smith
Project Number: 60552172
Laboratory: Pace Gulf Coast
SDG No.: 221040641 + 72417 + 72807 + 72979
Test Name: PFAS

Review Document:

__X__ National Functional Guidelines for Organic Data Review
__X__ DOD QSM 5.1, Table B-15
_____ Method 537 Rev. 1.1

1.0 Laboratory Deliverables		**Yes**	**No**	**NA**
1.1	Do Chain-of-Custody forms list all samples that were analyzed?	**X**		
1.2	Are all Chain-of-Custody forms signed, indicating sample chain-of-custody was maintained?	**X**		
1.3	Do sample preservation, collection and storage condition meet method requirement? 4±2°C If samples were received with the cooler temperature exceeding 6°C, then flag J(+)/UJ(-). If >20°C, J(+)/X(-)	**X**		
1.4	Do the traffic Reports, chain-of-custody, and lab narrative indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data?		**X**	

Notes:

2.0 Holding Times		**Yes**	**No**	**NA**
2.1	Have any technical holding times, determined from date of sampling to date of analysis, been exceeded? If yes, J(+)/UJ(-). Extraction: 14 days; Analysis: 40 days.		**X**	
2.2	Have any technical holding time grossly (twice the holding time) been exceeded? If yes, J(+)/X(-) .		**X**	

Notes:

3.0 Blanks (Laboratory and Field)		**Yes**	**No**	**NA**
3.1	Were method blanks (MB) prepared at the appropriate frequency (one per 20 samples, per batch per matrix?)	**X**		
3.2	Do any instrument/method blanks have positive results?	**X**		
3.3	Do any field equipment blanks/trip blanks have positive results?	**X**		

Notes: Several field and instrument blanks displayed target analyte concentrations greater than the detection limit.

QQQ2 Run Log

Analyst:	MRA	Expiration:
Instrument:	QQQ2	
Batch:	2210409A	
Current ICAL Bath:	2210409ACAL	
20mM Amm Acetate	016-51-6	4/11/2021
Methanol	2130017	6/30/2025
Calibration Std	016-45-2	9/30/2021
ICV Std	016-21-3	8/2/2021
EIS Mix	016-48-8	9/2/2021
IIS Mix	016-50-1	10/7/2021

Name	Data File	Type	Acq. Date-Time	Comment	Dil.
MeOH Shot	2210409A_01.d	MeOH Shot	4/9/2021 10:45	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
1206 RT Check	2210409A_02.d	QC	4/9/2021 10:58	MRA,QQQ2	1
MeOH Shot	2210409A_03.d	MeOH Shot	4/9/2021 11:11	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
MeOH Shot	2210409A_04.d	MeOH Shot	4/9/2021 11:40	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
1206 RT Check	2210409A_05.d	QC	4/9/2021 11:53	MRA,QQQ2	1
MeOH Shot	2210409A_06.d	MeOH Shot	4/9/2021 12:19	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
1201	2210409A_07.d	Cal	4/9/2021 12:32	MRA,QQQ2;Cal	1
1202	2210409A_08.d	Cal	4/9/2021 12:46	MRA,QQQ2;Cal	1
1203	2210409A_09.d	Cal	4/9/2021 12:59	MRA,QQQ2;Cal	1
1204	2210409A_10.d	Cal	4/9/2021 13:12	MRA,QQQ2;Cal	1
1205	2210409A_11.d	Cal	4/9/2021 13:25	MRA,QQQ2;Cal	1
1206	2210409A_12.d	Cal	4/9/2021 13:38	MRA,QQQ2;Cal	1
MeOH Shot	2210409A_13.d	MeOH Shot	4/9/2021 13:51	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
1500	2210409A_14.d	Sample	4/9/2021 14:05	MRA,QQQ2	1
1600	2210409A_15.d	Sample	4/9/2021 14:18	MRA,QQQ2	1
1450	2210409A_16.d	QC	4/9/2021 14:31	MRA,QQQ2	1
1450	2210409A_17.d	QC	4/9/2021 14:44	MRA,QQQ2	1
MeOH Shot	2210409A_18.d	MeOH Shot	4/9/2021 15:21	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
1450	2210409A_19.d	QC	4/9/2021 15:34	MRA,QQQ2	1
MeOH Shot	2210409A_20.d	MeOH Shot	4/9/2021 15:54	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1

22104026301 50x	2210409A_21.d	Sample	4/9/2021 16:07	MRA,QQQ2;707694;M2PFDA spiked at 1/4 ICAL	50
2161507	2210409A_22.d	Sample	4/9/2021 16:20	MRA,QQQ2;707694;M2PFDA spiked at 1/4 ICAL	1
2161508	2210409A_23.d	QC	4/9/2021 16:33	MRA,QQQ2;706944	1
22103255721	2210409A_24.d	Sample	4/9/2021 16:46	MRA,QQQ2;707694;M2PFDA spiked at 1/4 ICAL	1
22103255722	2210409A_25.d	Sample	4/9/2021 16:59	MRA,QQQ2;707694;M2PFDA spiked at 1/4 ICAL	1
2161509	2210409A_26.d	QC	4/9/2021 17:12	MRA,QQQ2;707694;M2PFDA spiked at 1/4 ICAL	1
2161510	2210409A_27.d	QC	4/9/2021 17:26	MRA,QQQ2;707694;M2PFDA spiked at 1/4 ICAL	1
2166311	2210409A_28.d	Sample	4/9/2021 17:39	MRA,QQQ2;707793	1
2166312	2210409A_29.d	QC	4/9/2021 17:52	MRA,QQQ2;707793	1
2166313	2210409A_30.d	QC	4/9/2021 18:05	MRA,QQQ2;707793	1
22104024001	2210409A_31.d	Sample	4/9/2021 18:18	MRA,QQQ2;707793	1
22104024002	2210409A_32.d	Sample	4/9/2021 18:31	MRA,QQQ2;707793	1
22104062401	2210409A_33.d	Sample	4/9/2021 18:44	MRA,QQQ2;707793	1
22104064101	2210409A_34.d	Sample	4/9/2021 18:57	MRA,QQQ2;707793	1
2166243	2210409A_35.d	Sample	4/9/2021 19:11	MRA,QQQ2;707768;M2PFDA spiked at 1/4 ICAL	1
2166244	2210409A_36.d	QC	4/9/2021 19:24	MRA,QQQ2;707768;M2PFDA spiked at 1/4 ICAL	1
2166245	2210409A_37.d	QC	4/9/2021 19:37	MRA,QQQ2;707768;M2PFDA spiked at 1/4 ICAL	1
22104023101	2210409A_38.d	Sample	4/9/2021 19:50	MRA,QQQ2;707768	1
22104023105	2210409A_39.d	Sample	4/9/2021 20:03	MRA,QQQ2;707768	1
22104023106	2210409A_40.d	Sample	4/9/2021 20:16	MRA,QQQ2;707768	1
1400	2210409A_41.d	QC	4/9/2021 20:29	MRA,QQQ2;CCV	1
2161491	2210409A_42.d	Sample	4/9/2021 20:42	MRA,QQQ2;706939	1
2161492	2210409A_43.d	QC	4/9/2021 20:56	MRA,QQQ2;706939	1
22103255701	2210409A_44.d	Sample	4/9/2021 21:09	MRA,QQQ2;706939	1
22103255702	2210409A_45.d	Sample	4/9/2021 21:22	MRA,QQQ2;706939	1
22103255703	2210409A_46.d	Sample	4/9/2021 21:35	MRA,QQQ2;706939	1
22103255704	2210409A_47.d	Sample	4/9/2021 21:48	MRA,QQQ2;706939	1
22103255705	2210409A_48.d	Sample	4/9/2021 22:01	MRA,QQQ2;706939	1
22103255706	2210409A_49.d	QC	4/9/2021 22:14	MRA,QQQ2;706939	1
22103255707	2210409A_50.d	QC	4/9/2021 22:27	MRA,QQQ2;706939	1
22103255708	2210409A_51.d	Sample	4/9/2021 22:41	MRA,QQQ2;706939	1
22103255709	2210409A_52.d	Sample	4/9/2021 22:54	MRA,QQQ2;706939	1
22103255710	2210409A_53.d	Sample	4/9/2021 23:07	MRA,QQQ2;706939	1
22103255711	2210409A_54.d	Sample	4/9/2021 23:20	MRA,QQQ2;706939	1

22103255712	2210409A_55.d	Sample	4/9/2021 23:33	MRA,QQQ2;706939	1
1450	2210409A_56.d	QC	4/9/2021 23:46	MRA,QQQ2;CCV	1
1450	2210409A_57.d	QC	4/9/2021 23:59	MRA,QQQ2;CCV	1
22103255713	2210409A_58.d	Sample	4/10/2021 0:12	MRA,QQQ2;706939	1
22103255714	2210409A_59.d	Sample	4/10/2021 0:26	MRA,QQQ2;706939	1
22103255715	2210409A_60.d	Sample	4/10/2021 0:39	MRA,QQQ2;706939	1
22103255716	2210409A_61.d	Sample	4/10/2021 0:52	MRA,QQQ2;706939	1
22103255717	2210409A_62.d	Sample	4/10/2021 1:05	MRA,QQQ2;706939	1
22103255718	2210409A_63.d	Sample	4/10/2021 1:18	MRA,QQQ2;706939	1
22103255719	2210409A_64.d	Sample	4/10/2021 1:31	MRA,QQQ2;706939	1
22103255720	2210409A_65.d	Sample	4/10/2021 1:44	MRA,QQQ2;706939	1
22104023103 20x	2210409A_66.d	Sample	4/10/2021 1:58	MRA,QQQ2;707694	20
1400	2210409A_67.d	QC	4/10/2021 2:11	MRA,QQQ2;CCV	1
2163567	2210409A_68.d	Sample	4/10/2021 2:24	MRA,QQQ2;707329	1
2163568	2210409A_69.d	QC	4/10/2021 2:37	MRA,QQQ2;707329	1
2163569	2210409A_70.d	QC	4/10/2021 2:50	MRA,QQQ2;707329	1
22103265101	2210409A_71.d	Sample	4/10/2021 3:03	MRA,QQQ2;707329	1
22103265103	2210409A_72.d	Sample	4/10/2021 3:16	MRA,QQQ2;707329	1
22103265104	2210409A_73.d	Sample	4/10/2021 3:30	MRA,QQQ2;707329	1
22103265105	2210409A_74.d	Sample	4/10/2021 3:43	MRA,QQQ2;707329	1
22103265107	2210409A_75.d	Sample	4/10/2021 3:56	MRA,QQQ2;707329	1
22103265108	2210409A_76.d	Sample	4/10/2021 4:09	MRA,QQQ2;707329	1
22103265110	2210409A_77.d	Sample	4/10/2021 4:22	MRA,QQQ2;707329	1
22103265112	2210409A_78.d	Sample	4/10/2021 4:35	MRA,QQQ2;707329	1
22103265113	2210409A_79.d	Sample	4/10/2021 4:48	MRA,QQQ2;707329	1
22103265114	2210409A_80.d	Sample	4/10/2021 5:02	MRA,QQQ2;707329	1
1400	2210409A_81.d	QC	4/10/2021 5:15	MRA,QQQ2;CCV	1
22103302201 10x	2210409A_82.d	Sample	4/10/2021 5:28	MRA,QQQ2;707329	10
22103302201 1x	2210409A_83.d	Sample	4/10/2021 5:41	MRA,QQQ2;707329	1
22103302202 10x	2210409A_84.d	Sample	4/10/2021 5:54	MRA,QQQ2;707329	10
22103302202 1x	2210409A_85.d	Sample	4/10/2021 6:07	MRA,QQQ2;707329	1
22103302203	2210409A_86.d	Sample	4/10/2021 6:20	MRA,QQQ2;707329	1
22103302204	2210409A_87.d	Sample	4/10/2021 6:34	MRA,QQQ2;707329	1
22103302401	2210409A_88.d	Sample	4/10/2021 6:47	MRA,QQQ2;707329	1

22103302402	2210409A_89.d	Sample	4/10/2021 7:00	MRA,QQQ2;707329	1
22103302403 10x	2210409A_90.d	Sample	4/10/2021 7:13	MRA,QQQ2;707329	10
22103302403 1x	2210409A_91.d	Sample	4/10/2021 7:26	MRA,QQQ2;707329	1
1400	2210409A_92.d	QC	4/10/2021 7:39	MRA,QQQ2;CCV	1
22103302404 20x	2210409A_93.d	Sample	4/10/2021 7:52	MRA,QQQ2;707329	20
22103302404 1x	2210409A_94.d	Sample	4/10/2021 8:05	MRA,QQQ2;707329	1
22103302405	2210409A_95.d	Sample	4/10/2021 8:19	MRA,QQQ2;707329	1
2167850	2210409A_96.d	Sample	4/10/2021 8:32	MRA,QQQ2;708034	1
2167851	2210409A_97.d	QC	4/10/2021 8:45	MRA,QQQ2;708034	1
2167852	2210409A_98.d	QC	4/10/2021 8:58	MRA,QQQ2;708034	1
22103245301	2210409A_99.d	Sample	4/10/2021 9:11	MRA,QQQ2;708034	1
2167845	2210409A_100.d	Sample	4/10/2021 9:24	MRA,QQQ2;708033	1
2167846	2210409A_101.d	QC	4/10/2021 9:37	MRA,QQQ2;708033	1
2167849	2210409A_102.d	QC	4/10/2021 9:51	MRA,QQQ2;708033	1
22103265109 10x	2210409A_103.d	Sample	4/10/2021 10:04	MRA,QQQ2;708033	10
22104022002	2210409A_104.d	Sample	4/10/2021 10:17	MRA,QQQ2;708033	1
1400	2210409A_105.d	QC	4/10/2021 10:30	MRA,QQQ2;CCV	1
MeOH Shot	2210409A_106.d	MeOH Shot	4/10/2021 10:43	MRA,QQQ2;Instrument Blank	1
MeOH Shot	2210409A_107.d	MeOH Shot	4/10/2021 10:56	MRA,QQQ2;Instrument Blank	1

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	221040641	Instrument ID:	QQQ2
Analysis Date:	04/09/2021 14:31	Lab File ID:	2210409A_16.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	708250

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	38.1	30.4	80	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	38.4	33.3	87	70	130	
NEtFOSAA	ng/L	40.0	35.3	88	70	130	
NMeFOSAA	ng/L	40.0	34.4	86	70	130	
Perfluorobutanoic acid	ng/L	40.0	35.4	89	70	130	
Perfluorobutanesulfonic acid	ng/L	35.5	30.7	87	70	130	
Perfluorodecanoic acid	ng/L	40.0	35.9	90	70	130	
Perfluorododecanoic acid	ng/L	40.0	39.9	100	70	130	
Perfluoroheptanoic acid	ng/L	40.0	34.1	85	70	130	
Perfluorohexanoic acid	ng/L	40.0	34.5	86	70	130	
Perfluorohexanesulfonic acid	ng/L	36.6	35.3	97	70	130	
Perfluorononanoic acid	ng/L	40.0	37.4	94	70	130	
Perfluorooctanoic acid	ng/L	40.0	33.2	83	70	130	
Perfluorooctanesulfonic acid	ng/L	37.1	31.4	85	70	130	
Perfluoropentanoic acid	ng/L	40.0	35.7	89	70	130	
Perfluorotetradecanoic acid	ng/L	40.0	32.3	81	70	130	
Perfluorotridecanoic acid	ng/L	40.0	37.1	93	70	130	
Perfluoroundecanoic acid	ng/L	40.0	38.9	97	70	130	

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	221040641	Instrument ID:	QQQ2
Analysis Date:	04/09/2021 14:18	Lab File ID:	2210409A_15.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	708250

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	10000	9430	94	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	10100	10200	101	70	130	
NEtFOSAA	ng/L	10000	9780	98	70	130	
NMeFOSAA	ng/L	10000	8810	88	70	130	
Perfluorobutanoic acid	ng/L	10000	10100	101	70	130	
Perfluorobutanesulfonic acid	ng/L	10000	9480	95	70	130	
Perfluorodecanoic acid	ng/L	10000	10300	103	70	130	
Perfluorododecanoic acid	ng/L	10000	8690	87	70	130	
Perfluoroheptanoic acid	ng/L	10000	10200	102	70	130	
Perfluorohexanoic acid	ng/L	10100	9550	95	70	130	
Perfluorohexanesulfonic acid	ng/L	10000	10500	105	70	130	
Perfluorononanoic acid	ng/L	10000	12200	122	70	130	
Perfluorooctanoic acid	ng/L	10100	10400	103	70	130	
Perfluorooctanesulfonic acid	ng/L	10000	8660	87	70	130	
Perfluoropentanoic acid	ng/L	10100	10300	102	70	130	
Perfluorotetradecanoic acid	ng/L	10000	12300	123	70	130	
Perfluorotridecanoic acid	ng/L	10000	7950	80	70	130	
Perfluoroundecanoic acid	ng/L	10000	9630	96	70	130	

4I

ORGANICS INSTRUMENT BLANK

Report No:	221040641	Instrument ID:	QQQ2
Analysis Date:	04/09/2021 14:05	Lab File ID:	2210409A_14.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	708250

ANALYTE	*UNITS*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*	*#*
6:2 Fluorotelomersulfonic acid	ng/L	2.00	U	0.94	2.00	4.00	
8:2 Fluorotelomersulfonic acid	ng/L	1.51	J	0.90	2.00	4.00	
NEtFOSAA	ng/L	4.00	U	0.97	4.00	8.00	
NMeFOSAA	ng/L	4.00	U	0.91	4.00	8.00	
Perfluorobutanesulfonic acid	ng/L	1.68	J	0.81	2.00	4.00	
Perfluorobutanoic acid	ng/L	0.972	J	0.90	2.00	4.00	
Perfluorodecanoic acid	ng/L	2.00	U	0.86	2.00	4.00	
Perfluorododecanoic acid	ng/L	1.15	J	0.88	2.00	4.00	
Perfluoroheptanoic acid	ng/L	2.00	U	0.48	2.00	4.00	
Perfluorohexanesulfonic acid	ng/L	1.01	J	0.95	2.00	4.00	
Perfluorohexanoic acid	ng/L	2.00	U	0.99	2.00	4.00	
Perfluorononanoic acid	ng/L	2.00	U	0.78	2.00	4.00	
Perfluorooctanesulfonic acid	ng/L	2.00	U	0.81	2.00	4.00	
Perfluorooctanoic acid	ng/L	2.00	U	0.95	2.00	4.00	
Perfluoropentanoic acid	ng/L	2.00	U	0.85	2.00	4.00	
Perfluorotetradecanoic acid	ng/L	2.00	U	0.98	2.00	4.00	
Perfluorotridecanoic acid	ng/L	2.00	U	0.99	2.00	4.00	
Perfluoroundecanoic acid	ng/L	1.42	J	0.95	2.00	4.00	

* - Result greater than 1/2 LOQ

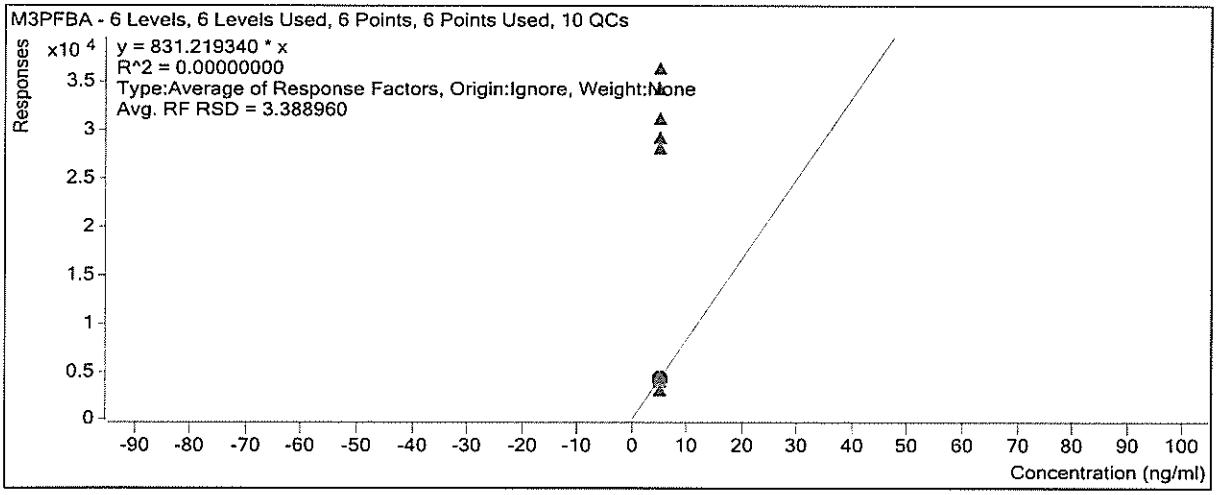
Quantitative Analysis Calibration Report

Batch Data Path	D:\MassHunter\Data\2210409ACAL\QuantResults\2210409A.batch.bin		
Analysis Time	4/14/2021 9:44 AM	**Analyst Name**	GCAL\lcms
Report Time	4/14/2021 9:49 AM	**Reporter Name**	GCAL\lcms
Last Calib Update	4/9/2021 10:07 PM	**Batch State**	Processed

Calibration Info

Instrument ISTD *M3PFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	4128	5.0000	825.6391
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	3900	5.0000	779.9972
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	4231	5.0000	846.1216
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	4140	5.0000	827.9929
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	4241	5.0000	848.2093
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	4297	5.0000	859.3560



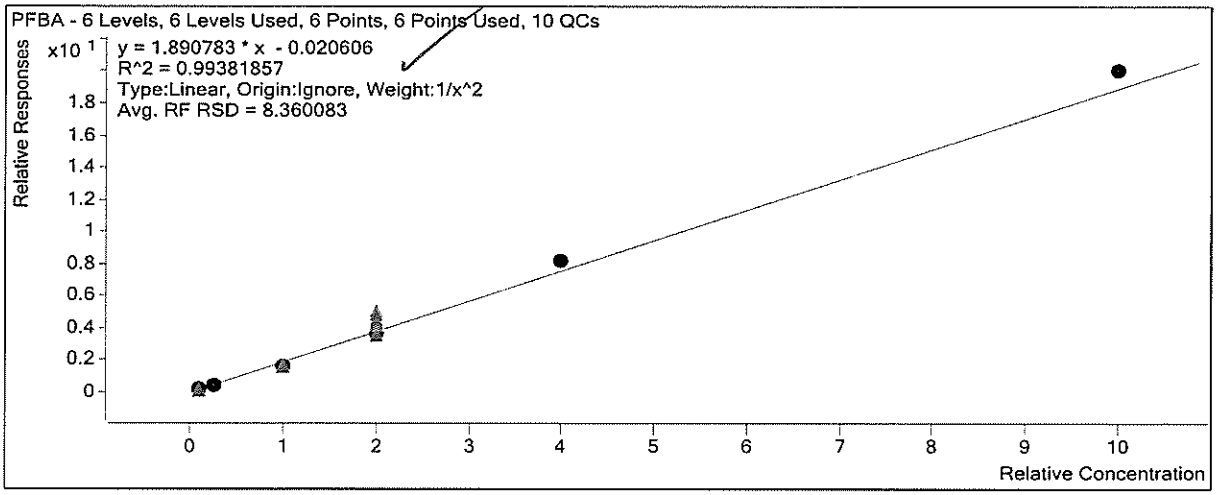
Extracted ISTD *MPFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	24121	5.0000	4824.2841
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	23302	5.0000	4660.4772
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	25084	5.0000	5016.7023
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	22868	5.0000	4573.5875
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	24342	5.0000	4868.4677
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	24922	5.0000	4984.4416

Target Compound *PFBA*

Quantitative Analysis Calibration Report

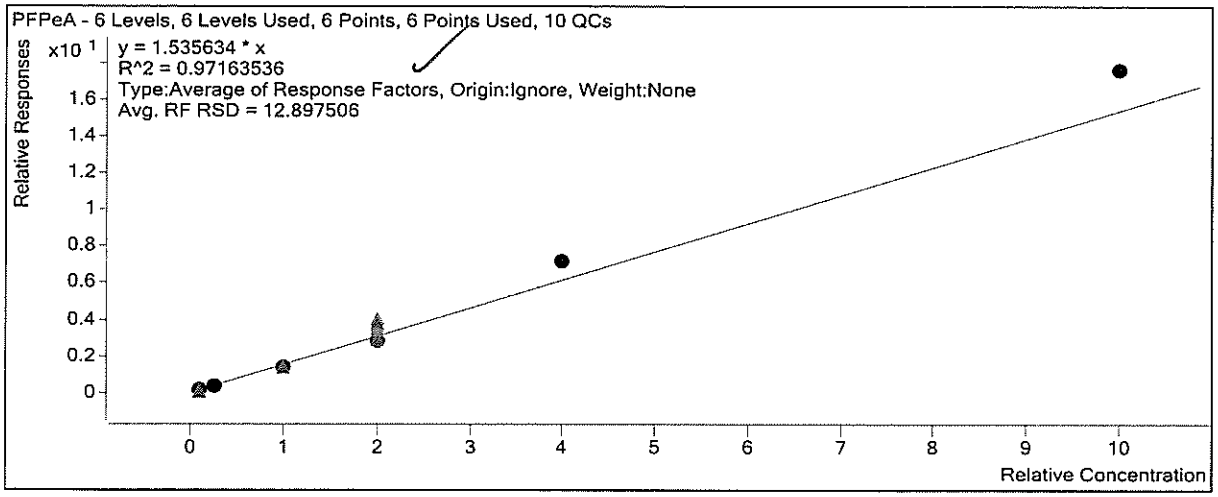
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	4139	0.5000	1.7158
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	10355	1.2500	1.7776
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	41841	5.0000	1.6680
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	82722	10.0000	1.8087
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	198384	20.0000	2.0374
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Target Compound *PFMPA*

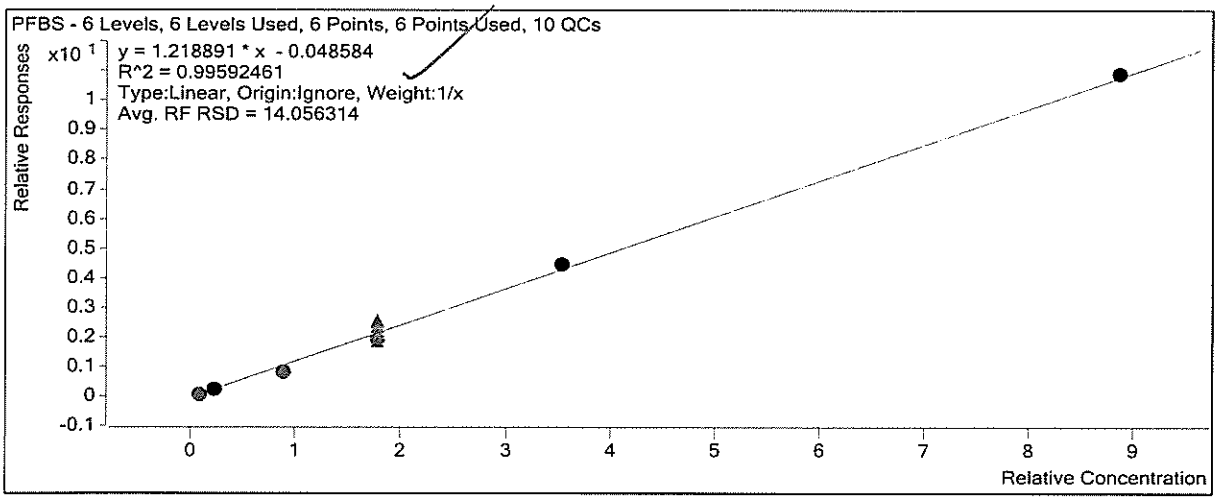
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
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D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	19595	5.0000	1.1669
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	39941	10.0000	1.2368
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	95141	20.0000	1.4921
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Quantitative Analysis Calibration Report



Target Compound *PFBS*

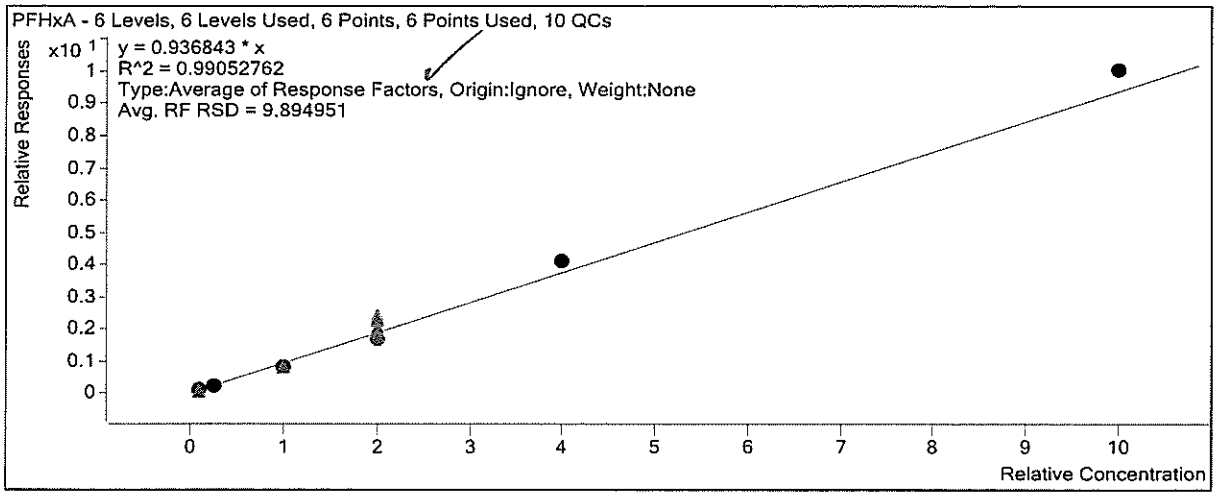
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
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D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	10145	4.4350	0.9459
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	21647	8.8700	1.0818
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	51622	17.7400	1.2586
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	127159	44.3500	1.2326



Extracted ISTD *M3PFBS*

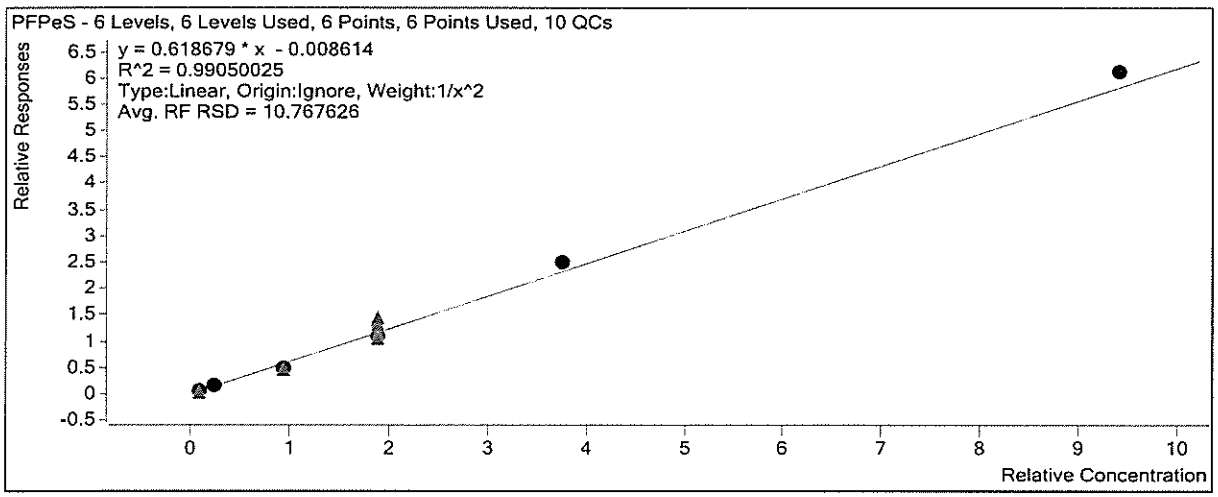
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	12092	5.0000	2418.4449

Quantitative Analysis Calibration Report



Target Compound *PFPeS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	1007	0.4705	0.5171
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	2834	1.1763	0.6287
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	10518	4.7050	0.5248
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	21135	9.4100	0.5794
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	50954	18.8200	0.6645
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	126461	47.0500	0.6524



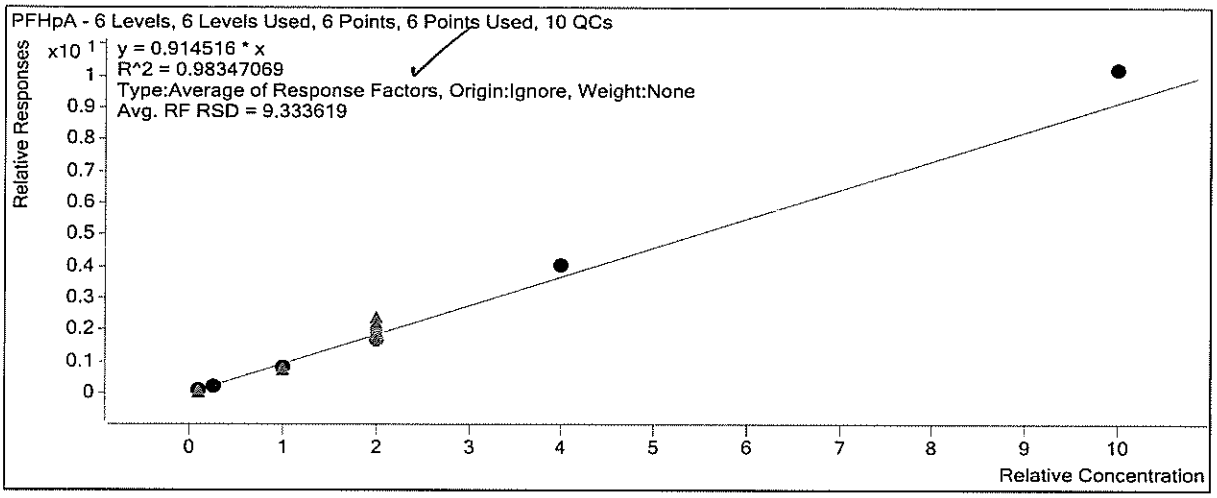
Extracted ISTD *M3HFPODA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	972	10.0000	97.2261

Quantitative Analysis Calibration Report

Target Compound *PFHpA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	1768	0.5000	0.9147
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	3983	1.2500	0.8761
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	16753	5.0000	0.8094
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	32106	10.0000	0.8558
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	78604	20.0000	1.0138
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	199669	50.0000	1.0174



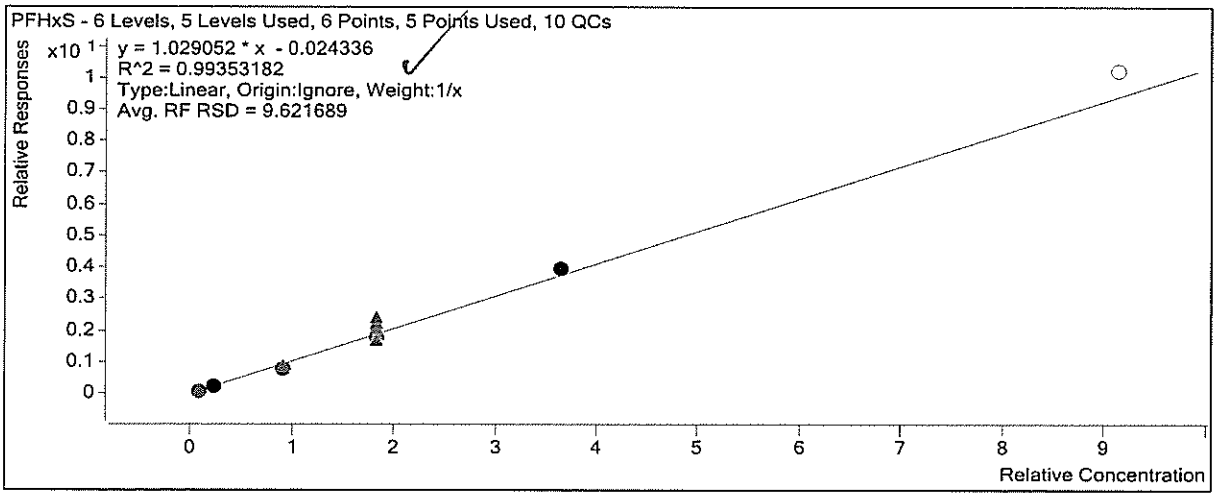
Extracted ISTD *M3PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	13732	5.0000	2746.4025
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	12535	5.0000	2507.0672
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	14067	5.0000	2813.3875
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	12459	5.0000	2491.7113
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	13486	5.0000	2697.1708
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	13006	5.0000	2601.1616

Target Compound *PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	1086	0.4570	0.8650

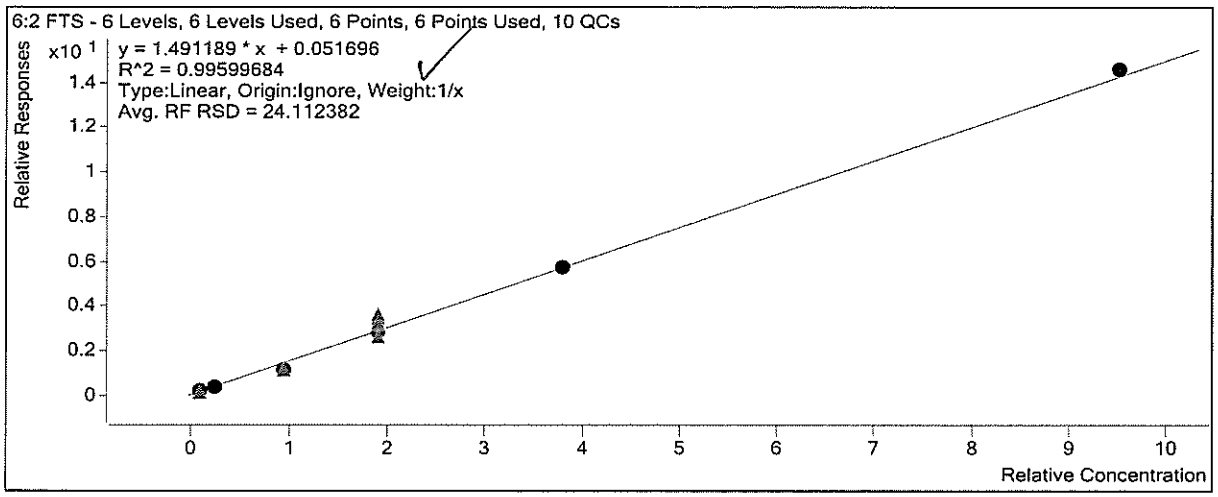
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	2748	1.1425	0.9594
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	10979	4.5700	0.8539
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	22094	9.1400	0.9701
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	53124	18.2800	1.0775
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☐	133133	45.7000	1.1200



Target Compound *ADONA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	6202	0.4725	2.1551
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	18158	1.1813	2.5513
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	72774	4.7250	2.4070
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	146498	9.4500	2.4921
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	347201	18.9000	2.8878
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	870547	47.2500	2.9376

Quantitative Analysis Calibration Report



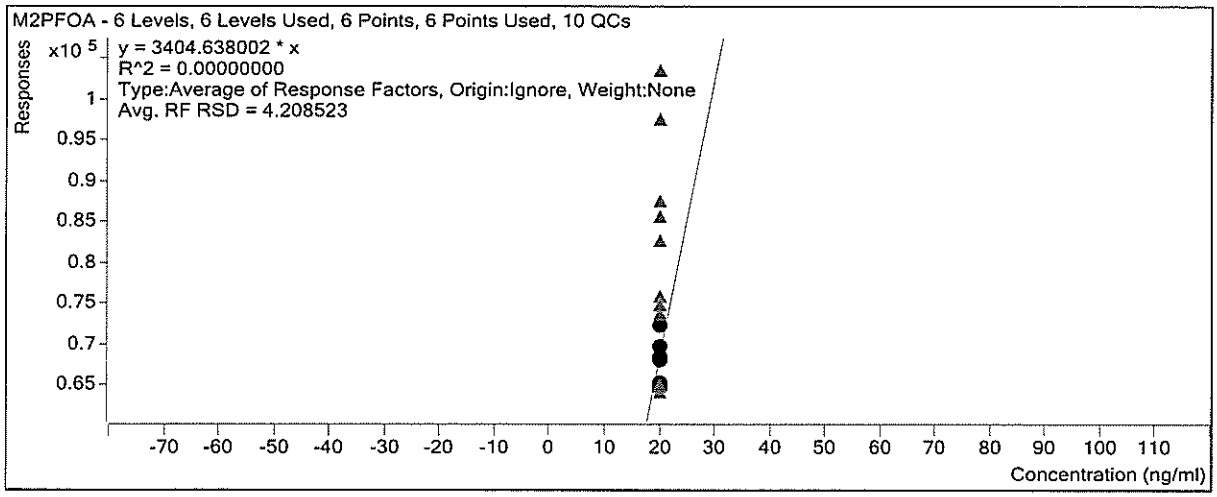
Extracted ISTD *M8PFOA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	30454	5.0000	6090.8496
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	30123	5.0000	6024.6488
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	31994	5.0000	6398.8262
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	31103	5.0000	6220.6815
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	31807	5.0000	6361.4230
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	31360	5.0000	6271.9663

Instrument ISTD *M2PFOA*

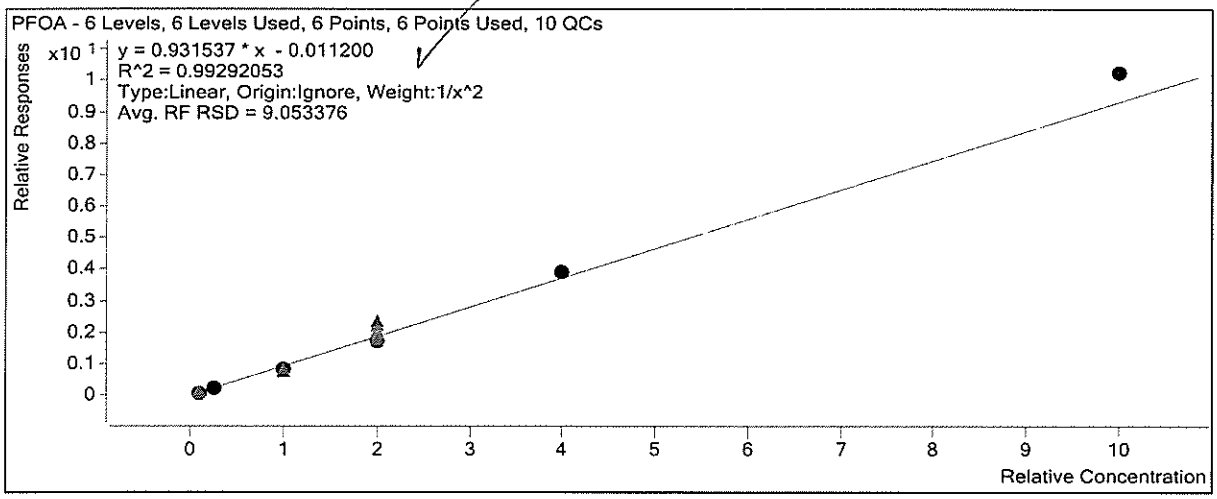
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	69768	20.0000	3488.3776
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	64627	20.0000	3231.3564
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	72343	20.0000	3617.1706
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	68057	20.0000	3402.8618
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	68499	20.0000	3424.9454
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	65262	20.0000	3263.1162

Quantitative Analysis Calibration Report



Target Compound *PFOA*

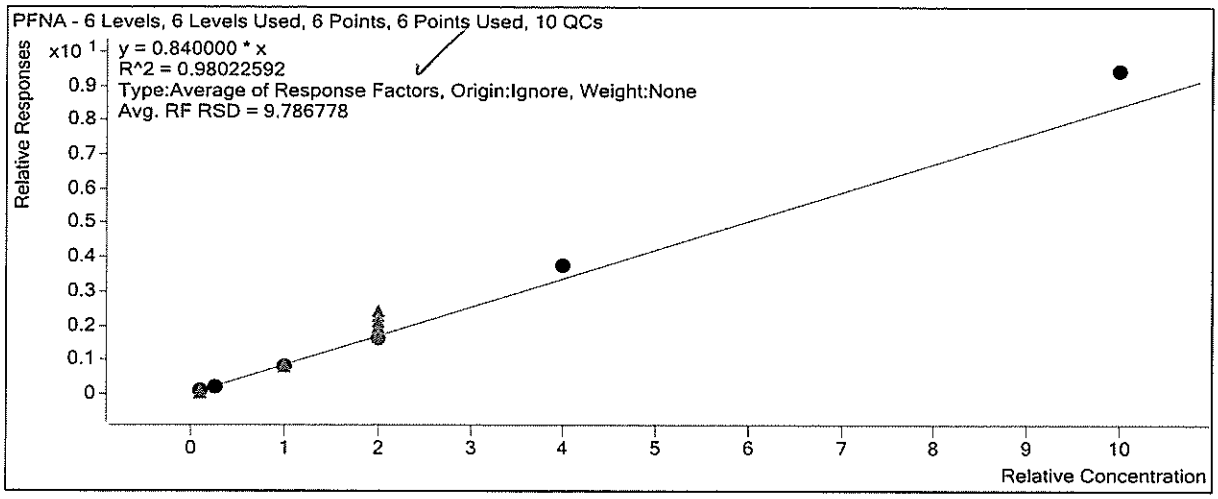
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	2568	0.5000	0.8433
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	6378	1.2500	0.8469
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	27257	5.0000	0.8519
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	53378	10.0000	0.8581
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	125232	20.0000	0.9843
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	322102	50.0000	1.0271



Instrument ISTD *MPFOA*

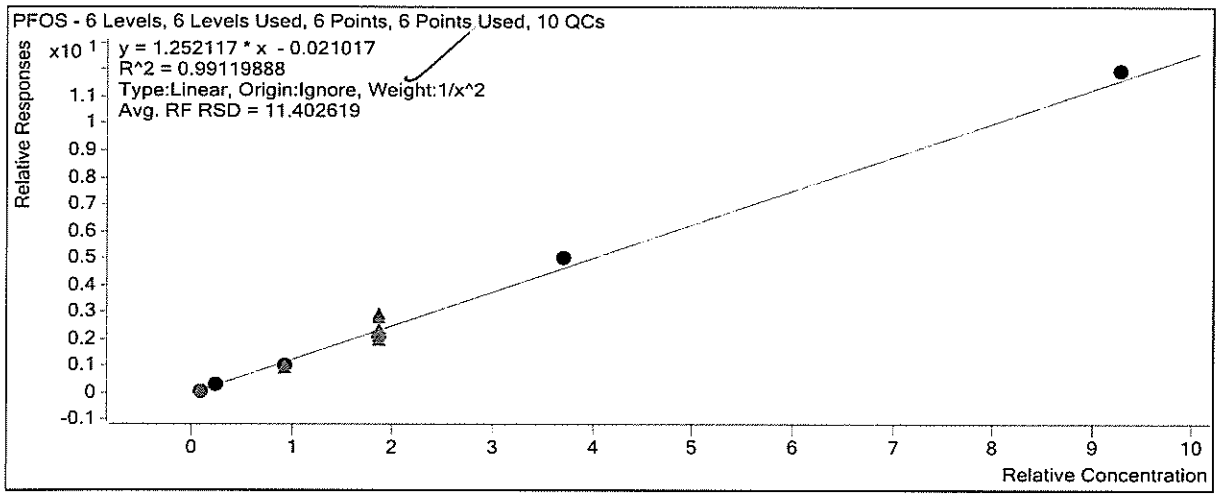
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	456734	25.0000	18269.3774

Quantitative Analysis Calibration Report



Target Compound *PFOS*

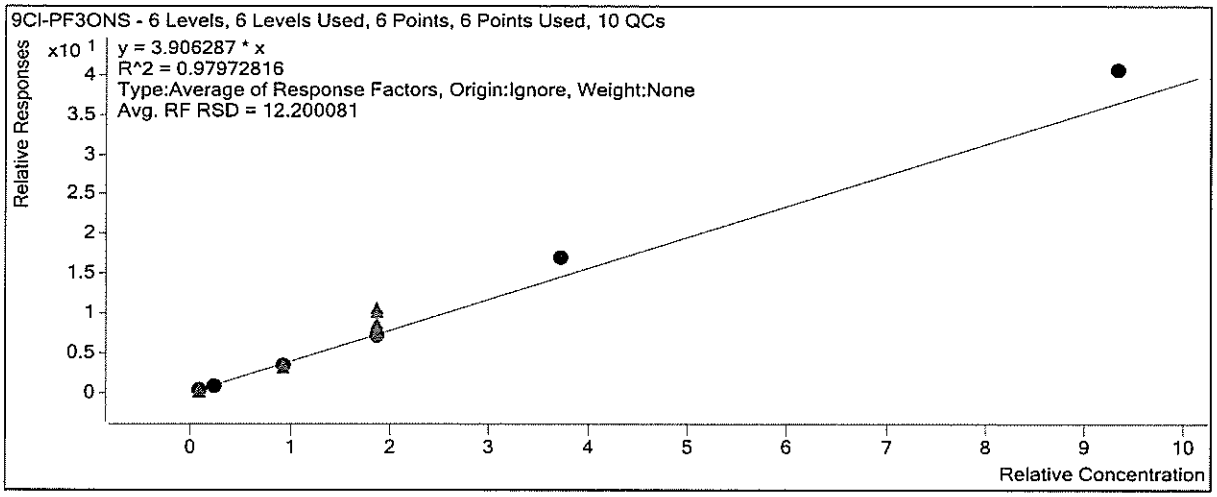
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	1371	0.4640	0.9922
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	4013	1.1600	1.2826
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	14965	4.6400	1.1002
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	29506	9.2800	1.1419
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	70451	18.5600	1.3445
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	175404	46.4000	1.2923



Instrument ISTD *M4PFOS*

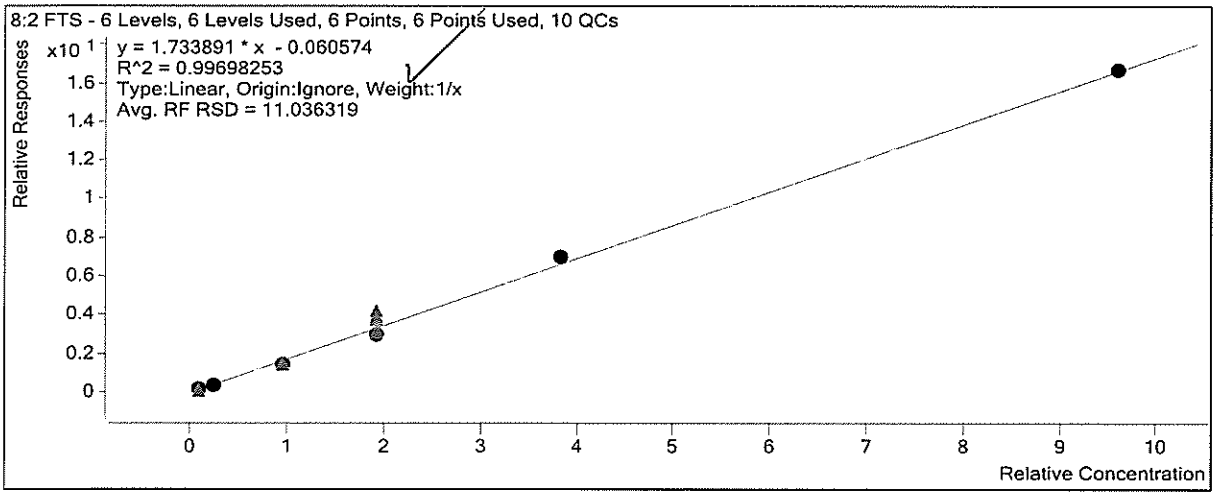
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	59962	20.0000	2998.0798

Quantitative Analysis Calibration Report



Target Compound *8:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	909	0.4800	1.3587
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	2207	1.2000	1.4608
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	10262	4.8000	1.5186
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	20145	9.6000	1.5133
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	47168	19.2000	1.8102
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	111998	48.0000	1.7418



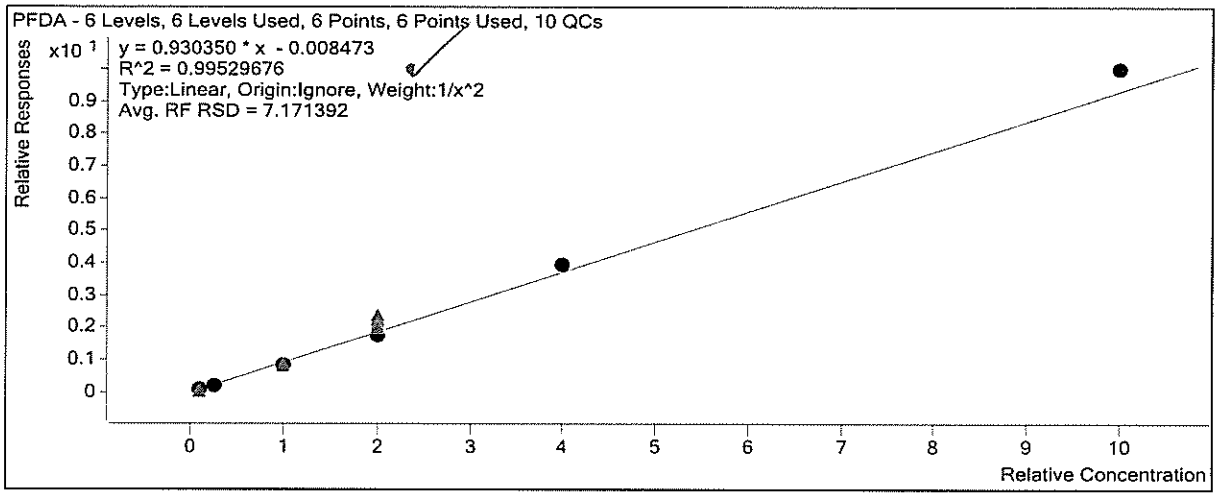
Extracted ISTD *M2 8:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	6969	5.0000	1393.8550

Quantitative Analysis Calibration Report

Target Compound *PFDA*

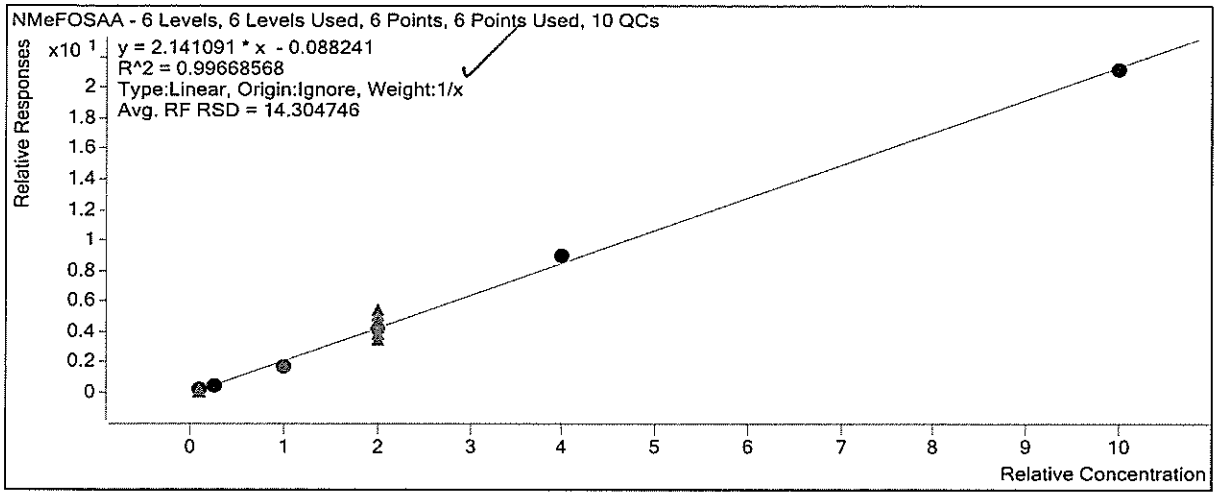
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	1410	0.5000	0.8733
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	3100	1.2500	0.8408
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	12856	5.0000	0.8651
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	26008	10.0000	0.8900
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	62607	20.0000	0.9819
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	152017	50.0000	0.9966



Target Compound *PFNS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	1038	0.4810	0.3653
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	3335	1.2025	0.4749
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	11305	4.8100	0.3836
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	24374	9.6200	0.4388
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	55197	19.2400	0.4755
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	136440	48.1000	0.4512

Quantitative Analysis Calibration Report



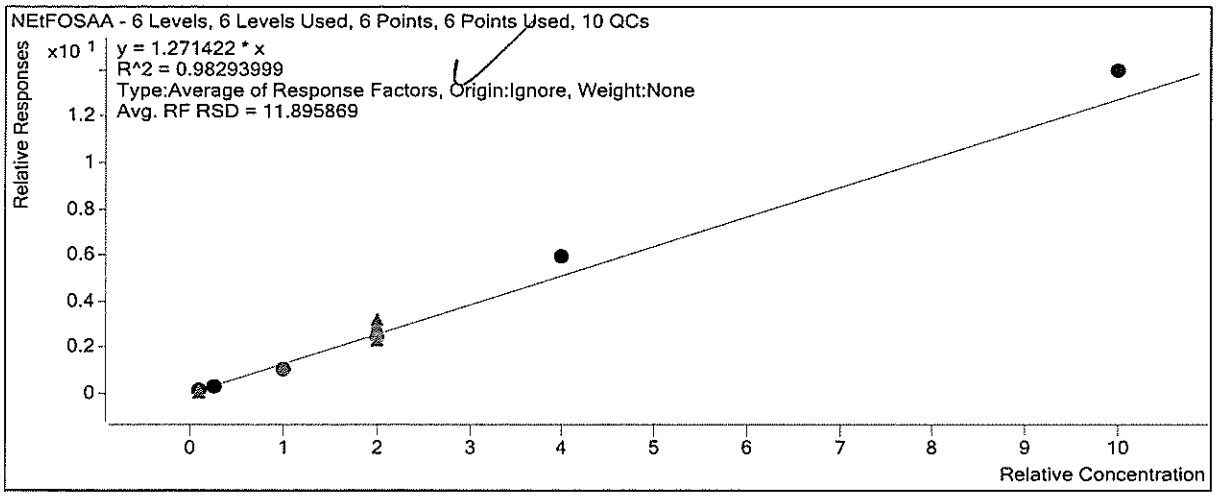
Extracted ISTD *d5-NEtFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	13520	5.0000	2704.0187
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	13216	5.0000	2643.2975
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	14726	5.0000	2945.1272
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	12877	5.0000	2575.4309
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	13497	5.0000	2699.4973
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	13648	5.0000	2729.6369

Target Compound *NEtFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	1655	0.5000	1.2244
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	4192	1.2500	1.2687
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	15519	5.0000	1.0539
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	30936	10.0000	1.2012
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	79824	20.0000	1.4785
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	191326	50.0000	1.4018

Quantitative Analysis Calibration Report



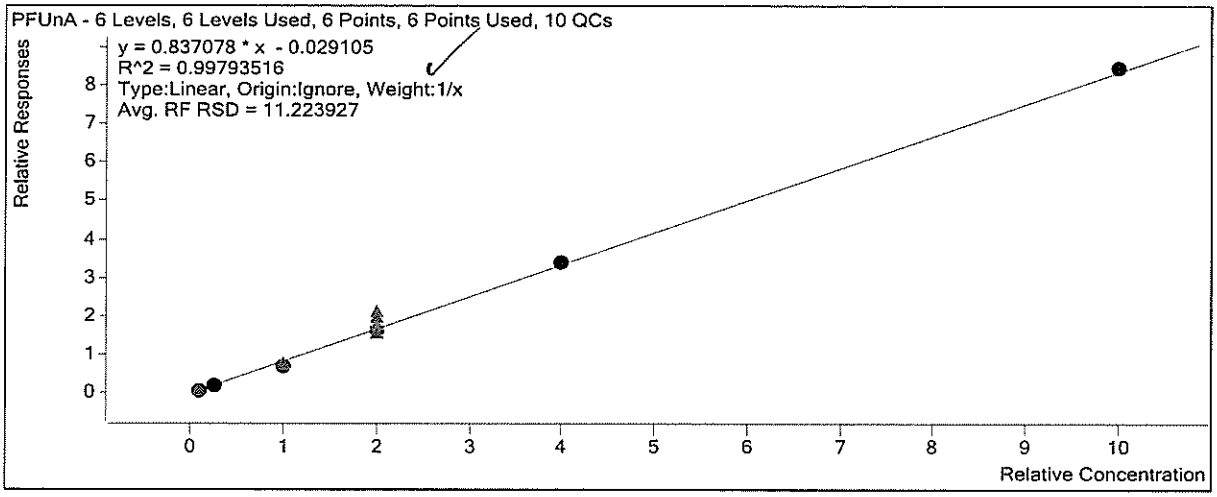
Extracted ISTD *M7PFUnA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	15913	5.0000	3182.5015
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	15754	5.0000	3150.7081
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	17790	5.0000	3558.0475
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	15695	5.0000	3139.0461
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	17735	5.0000	3546.9717
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	17410	5.0000	3481.9626

Target Compound *PFUnA*

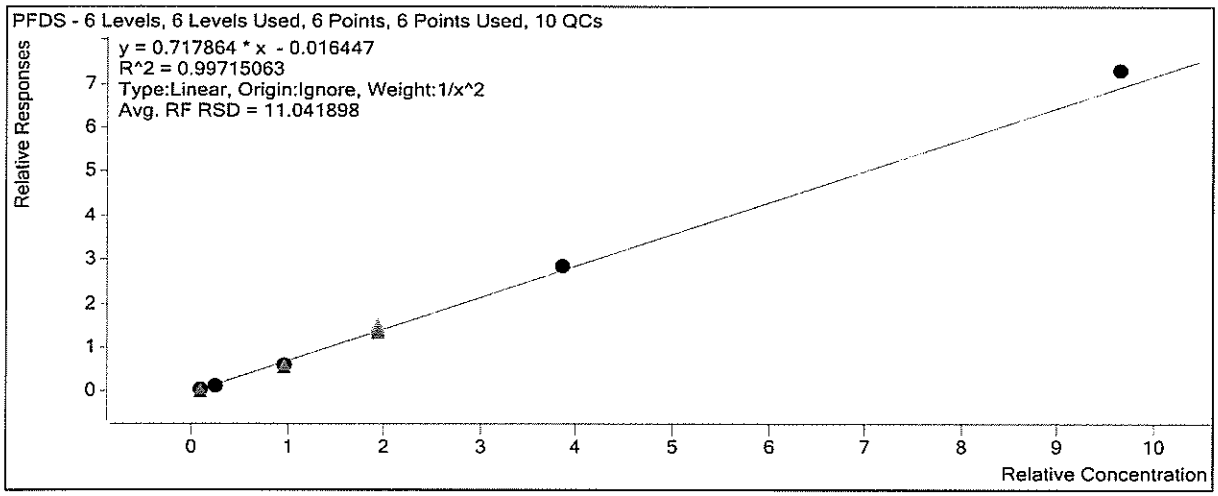
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	1029	0.5000	0.6469
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	2950	1.2500	0.7491
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	11986	5.0000	0.6738
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	25197	10.0000	0.8027
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	59937	20.0000	0.8449
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	146903	50.0000	0.8438

Quantitative Analysis Calibration Report



Target Compound *PFDS*

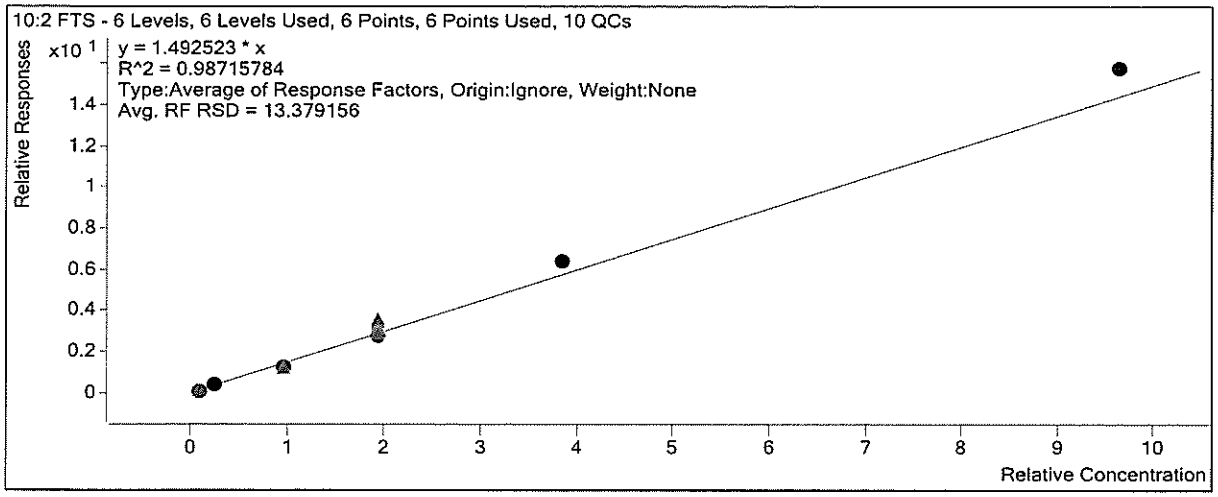
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	872	0.4825	0.5599
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	2241	1.2063	0.6298
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	9282	4.8250	0.6473
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	19935	9.6500	0.7069
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	45178	19.3000	0.7343
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	111705	48.2500	0.7589



Target Compound *11Cl-PF3OUdS*

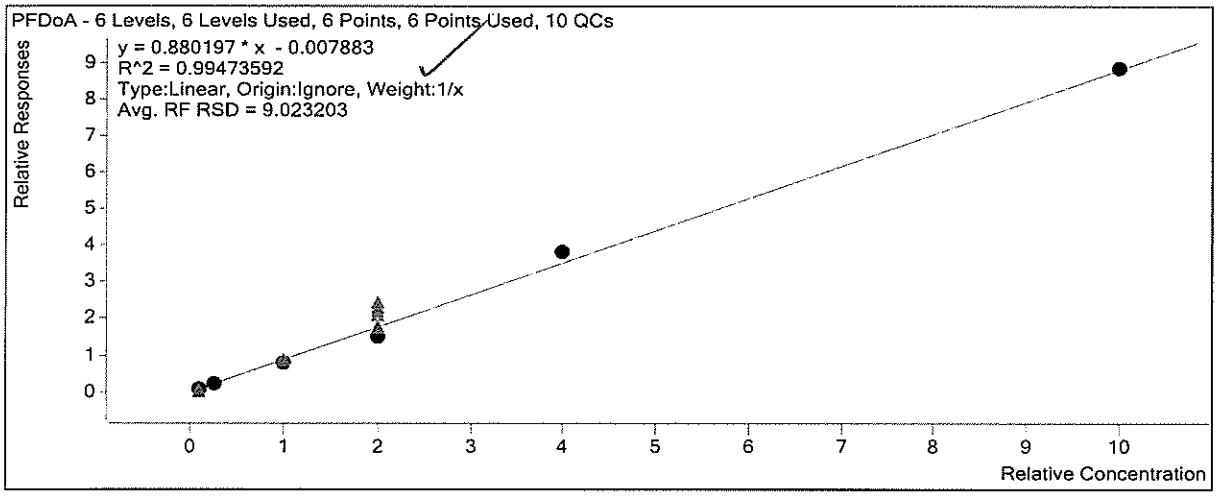
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	3507	0.4715	2.4975

Quantitative Analysis Calibration Report



Target Compound *PFDoA*

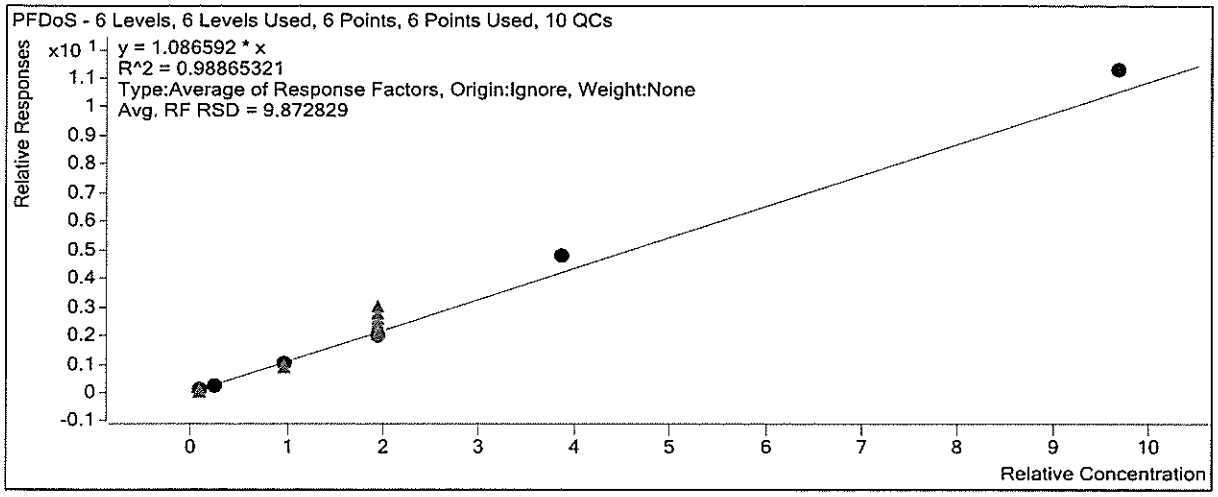
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	1024	0.5000	0.9185
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	2386	1.2500	0.8700
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	9530	5.0000	0.7816
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	18430	10.0000	0.7525
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	45151	20.0000	0.9514
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	110882	50.0000	0.8823



Extracted ISTD *d-NMeFOSA*

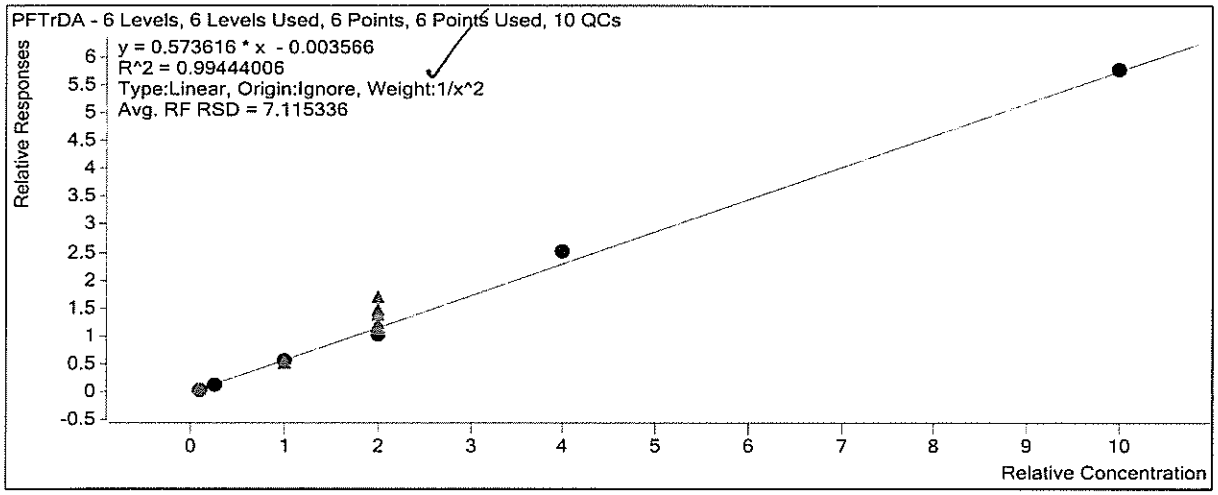
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	7763	5.0000	1552.6270

Quantitative Analysis Calibration Report



Target Compound *PFTrDA*

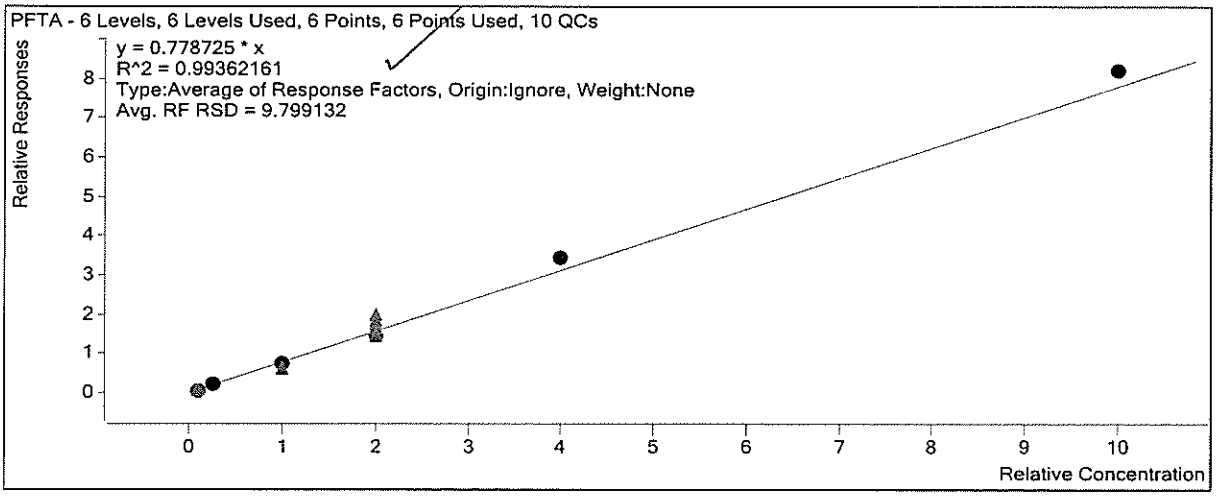
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	597	0.5000	0.5357
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	1568	1.2500	0.5718
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	6802	5.0000	0.5579
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	12538	10.0000	0.5119
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	29855	20.0000	0.6291
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	72739	50.0000	0.5788



Extracted ISTD *d-NEtFOSA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	10282	5.0000	2056.4847

D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	1369	1.2500	0.8479
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	5764	5.0000	0.7367
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	9905	10.0000	0.7339
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	25511	20.0000	0.8613
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	63589	50.0000	0.8226



Target Compound *PFHxDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210409ACAL\2210409A_07.d	Calibration	1	☑	505	0.5000	0.6892
D:\MassHunter\Data\2210409ACAL\2210409A_08.d	Calibration	2	☑	1355	1.2500	0.7693
D:\MassHunter\Data\2210409ACAL\2210409A_09.d	Calibration	3	☑	6018	5.0000	0.8513
D:\MassHunter\Data\2210409ACAL\2210409A_10.d	Calibration	4	☑	11303	10.0000	0.7218
D:\MassHunter\Data\2210409ACAL\2210409A_11.d	Calibration	5	☑	27415	20.0000	0.9301
D:\MassHunter\Data\2210409ACAL\2210409A_12.d	Calibration	6	☑	72902	50.0000	0.9045

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221040641	Instrument ID:	QQQ2
Analysis Date:	04/09/2021 20:29	Lab File ID:	2210409A_41.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	708250

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	9510	8650	91	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9180	96	70	130	
NEtFOSAA	ng/L	10000	9090	91	70	130	
NMeFOSAA	ng/L	10000	8260	83	70	130	
Perfluorobutanoic acid	ng/L	10000	9500	95	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	7970	90	70	130	
Perfluorodecanoic acid	ng/L	10000	10800	108	70	130	
Perfluorododecanoic acid	ng/L	10000	10200	102	70	130	
Perfluoroheptanoic acid	ng/L	10000	9650	97	70	130	
Perfluorohexanoic acid	ng/L	10000	9250	92	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8480	93	70	130	
Perfluorononanoic acid	ng/L	10000	10100	101	70	130	
Perfluorooctanoic acid	ng/L	10000	9740	97	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8470	91	70	130	
Perfluoropentanoic acid	ng/L	10000	9520	95	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9320	93	70	130	
Perfluorotridecanoic acid	ng/L	10000	11000	110	70	130	
Perfluoroundecanoic acid	ng/L	10000	9600	96	70	130	

FORM 7E - ORG

8I

INJECTION INTERNAL STANDARD AREA SUMMARY

Report No:	221040641	Standard ID:	1205 (ICAL Midpoint)
Analyst:	MRA	Instrument ID:	QQQ2
Analysis Date:	04/09/21 13:25	Lab File ID:	2210409A_11.d
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	708250

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		64473		170287		68499		60893	
CLIENT SAMPLE ID	*LAB SAMP ID*		*#*		*#*		*#*		*#*
MB2166311	2166311	52655		139817		62665		49961	
LCS2166312	2166312	49828		140839		64318		46881	
LCSD2166313	2166313	52869		148209		64875		51208	
CS-DECON-040521	22104064101	45558		128506		58200		44242	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

QQQ2 Run Log

Analyst:	MRA	Expiration:
Instrument:	QQQ2	
Batch:	2210412A	
Current ICAL Bath:	2210412ACAL	
20mM Amm Acetate	016-52-1	4/14/2021
Methanol	2130017	6/30/2025
Calibration Std	016-45-2	9/30/2021
ICV Std	016-21-3	8/2/2021
EIS Mix	016-48-8	9/2/2021
IIS Mix	016-50-1	10/7/2021

Name	Data File	Type	Acq. Date-Time	Comment	Dil.
MeOH Shot	2210412A_01.d	MeOH Shot	4/12/2021 10:55	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
1206 RT Check	2210412A_02.d	QC	4/12/2021 11:08	MRA,QQQ2	1
MeOH Shot	2210412A_03.d	MeOH Shot	4/12/2021 11:22	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
1201	2210412A_04.d	Cal	4/12/2021 11:35	MRA,QQQ2;Cal	1
1202	2210412A_05.d	Cal	4/12/2021 11:48	MRA,QQQ2;Cal	1
1203	2210412A_06.d	Cal	4/12/2021 12:01	MRA,QQQ2;Cal	1
1204	2210412A_07.d	Cal	4/12/2021 12:14	MRA,QQQ2;Cal	1
1205	2210412A_08.d	Cal	4/12/2021 12:27	MRA,QQQ2;Cal	1
1206	2210412A_09.d	Cal	4/12/2021 12:40	MRA,QQQ2;Cal	1
MeOH Shot	2210412B_01.d	MeOH Shot	4/12/2021 14:07	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
1201	2210412B_02.d	Cal	4/12/2021 14:20	MRA,QQQ2;Cal	1
1202	2210412B_03.d	Cal	4/12/2021 14:33	MRA,QQQ2;Cal	1
1203	2210412B_04.d	Cal	4/12/2021 14:46	MRA,QQQ2;Cal	1
1204	2210412B_05.d	Cal	4/12/2021 15:00	MRA,QQQ2;Cal	1
1205	2210412B_06.d	Cal	4/12/2021 15:13	MRA,QQQ2;Cal	1
1206	2210412B_07.d	Cal	4/12/2021 15:26	MRA,QQQ2;Cal	1
MeOH Shot	2210412B_08.d	MeOH Shot	4/12/2021 15:48	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
1500	2210412B_09.d	Sample	4/12/2021 16:01	MRA,QQQ2	1
1600	2210412B_10.d	Sample	4/12/2021 16:14	MRA,QQQ2	1
1450	2210412B_11.d	QC	4/12/2021 16:27	MRA,QQQ2	1

1450	2210412B_12.d	QC	4/12/2021 16:40	MRA,QQQ2	1
MeOH Shot	2210412B_13.d	MeOH Shot	4/12/2021 17:23	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
2161491	2210412B_14.d	Sample	4/12/2021 17:36	MRA,QQQ2;706939	1
2161492	2210412B_15.d	QC	4/12/2021 17:49	MRA,QQQ2;706939	1
22103255701	2210412B_16.d	Sample	4/12/2021 18:02	MRA,QQQ2;706939	1
22103255711	2210412B_17.d	Sample	4/12/2021 18:15	MRA,QQQ2;706939	1
22103255718	2210412B_18.d	Sample	4/12/2021 18:28	MRA,QQQ2;706939	1
22103255719	2210412B_19.d	Sample	4/12/2021 18:41	MRA,QQQ2;706939	1
22103264801	2210412B_21.d	Sample	4/12/2021 18:54	MRA,QQQ2;707245;M2PFDA spiked at 1/4 ICAL	1
22103264802	2210412B_22.d	Sample	4/12/2021 19:08	MRA,QQQ2;707245;M2PFDA spiked at 1/4 ICAL	1
2163567	2210412B_23.d	Sample	4/12/2021 19:21	MRA,QQQ2;707329	1
2163568	2210412B_24.d	QC	4/12/2021 19:34	MRA,QQQ2;707329	1
2163569	2210412B_25.d	QC	4/12/2021 19:47	MRA,QQQ2;707329	1
22103265101	2210412B_26.d	Sample	4/12/2021 20:00	MRA,QQQ2;707329	1
22103265113	2210412B_27.d	Sample	4/12/2021 20:13	MRA,QQQ2;707329	1
22103302402	2210412B_28.d	Sample	4/12/2021 20:26	MRA,QQQ2;707329	1
2167845	2210412B_29.d	Sample	4/12/2021 20:39	MRA,QQQ2;708033	1
2167846	2210412B_30.d	QC	4/12/2021 20:53	MRA,QQQ2;708033	1
2167849	2210412B_31.d	QC	4/12/2021 21:06	MRA,QQQ2;708033	1
22104022002	2210412B_32.d	Sample	4/12/2021 21:19	MRA,QQQ2;708033	1
1400	2210412B_33.d	QC	4/12/2021 21:32	MRA,QQQ2;CCV	1
2167951	2210412B_34.d	Sample	4/12/2021 21:45	MRA,QQQ2;708059	1
2167952	2210412B_35.d	QC	4/12/2021 21:58	MRA,QQQ2;708059	1
2167953	2210412B_36.d	QC	4/12/2021 22:11	MRA,QQQ2;708059	1
22104061501	2210412B_37.d	Sample	4/12/2021 22:25	MRA,QQQ2;708059	1
22104061502	2210412B_38.d	Sample	4/12/2021 22:38	MRA,QQQ2;708059	1
22104061503	2210412B_39.d	Sample	4/12/2021 22:51	MRA,QQQ2;708059	1
22104061504	2210412B_40.d	Sample	4/12/2021 23:04	MRA,QQQ2;708059	1
22104061505	2210412B_41.d	Sample	4/12/2021 23:17	MRA,QQQ2;708059	1
22104063401 10x	2210412B_42.d	Sample	4/12/2021 23:30	MRA,QQQ2;708059	10
22104074401	2210412B_43.d	Sample	4/12/2021 23:43	MRA,QQQ2;708059	1
2168839	2210412B_44.d	Sample	4/12/2021 23:56	MRA,QQQ2;708161	1
2168840	2210412B_45.d	QC	4/13/2021 0:10	MRA,QQQ2;708161	1
2168841	2210412B_46.d	QC	4/13/2021 0:23	MRA,QQQ2;708161	1

22104093101 10x	2210412B_47.d	Sample	4/13/2021 0:36	MRA,QQQ2;708161	10
22104098201 10x	2210412B_48.d	Sample	4/13/2021 0:49	MRA,QQQ2;708161	10
22104098202 10x	2210412B_49.d	Sample	4/13/2021 1:02	MRA,QQQ2;708161	10
1400	2210412B_50.d	QC	4/13/2021 1:15	MRA,QQQ2;CCV	1
2168641	2210412B_51.d	Sample	4/13/2021 1:28	MRA,QQQ2;708147	1
2168642	2210412B_52.d	QC	4/13/2021 1:41	MRA,QQQ2;708147	1
22104095903	2210412B_53.d	Sample	4/13/2021 1:55	MRA,QQQ2;708147	1
2168649	2210412B_54.d	QC	4/13/2021 2:08	MRA,QQQ2;708147	1
2168650	2210412B_55.d	QC	4/13/2021 2:21	MRA,QQQ2;708147	1
22104095904	2210412B_56.d	Sample	4/13/2021 2:34	MRA,QQQ2;708147	1
22104095905 10x	2210412B_57.d	Sample	4/13/2021 2:47	MRA,QQQ2;708147	10
22104095906 10x	2210412B_58.d	Sample	4/13/2021 3:00	MRA,QQQ2;708147	10
22104095907	2210412B_59.d	Sample	4/13/2021 3:13	MRA,QQQ2;708147	1
22104094801	2210412B_60.d	Sample	4/13/2021 3:26	MRA,QQQ2;708147	1
22104098001 10x	2210412B_61.d	Sample	4/13/2021 3:39	MRA,QQQ2;708147	10
22104098002 10x	2210412B_62.d	Sample	4/13/2021 3:53	MRA,QQQ2;708147	10
22104098003 10x	2210412B_63.d	Sample	4/13/2021 4:06	MRA,QQQ2;708147	10
1450	2210412B_64.d	QC	4/13/2021 4:19	MRA,QQQ2;CCV	1
1450	2210412B_65.d	QC	4/13/2021 4:32	MRA,QQQ2;CCV	1
2166311	2210412B_66.d	Sample	4/13/2021 4:45	MRA,QQQ2;707793	1
2166312	2210412B_67.d	QC	4/13/2021 4:58	MRA,QQQ2;707793	1
2166313	2210412B_68.d	QC	4/13/2021 5:11	MRA,QQQ2;707793	1
22104024001	2210412B_69.d	Sample	4/13/2021 5:25	MRA,QQQ2;707793	1
22104024002	2210412B_70.d	Sample	4/13/2021 5:38	MRA,QQQ2;707793	1
22104062401	2210412B_71.d	Sample	4/13/2021 5:51	MRA,QQQ2;707793	1
22104064101	2210412B_72.d	Sample	4/13/2021 6:04	MRA,QQQ2;707793	1
22103302201	2210412B_73.d	Sample	4/13/2021 6:17	MRA,QQQ2;707329;M2PFDA spiked at 1/4 ICAL	1
22103302202	2210412B_74.d	Sample	4/13/2021 6:30	MRA,QQQ2;707329;M2PFDA spiked at 1/4 ICAL	1
22104095901 1000x DAI	2210412B_75.d	Sample	4/13/2021 6:43	MRA,QQQ2;708256	1
22104095902 1000xDAI	2210412B_76.d	Sample	4/13/2021 6:57	MRA,QQQ2;708256	1
1400	2210412B_77.d	QC	4/13/2021 7:10	MRA,QQQ2;CCV	1
MeOH Shot	2210412B_78.d	MeOH Shot	4/13/2021 7:23	MRA,QQQ2;Instrument Blank	1

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	221040641	Instrument ID:	QQQ2
Analysis Date:	04/12/2021 16:27	Lab File ID:	2210412B_11.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	708255

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	38.1	35.6	94	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	38.4	40.2	105	70	130	
NEtFOSAA	ng/L	40.0	35.4	88	70	130	
NMeFOSAA	ng/L	40.0	37.8	94	70	130	
Perfluorobutanoic acid	ng/L	40.0	36.1	90	70	130	
Perfluorobutanesulfonic acid	ng/L	35.5	32.2	91	70	130	
Perfluorodecanoic acid	ng/L	40.0	35.4	89	70	130	
Perfluorododecanoic acid	ng/L	40.0	40.6	101	70	130	
Perfluoroheptanoic acid	ng/L	40.0	36.2	90	70	130	
Perfluorohexanoic acid	ng/L	40.0	34.6	86	70	130	
Perfluorohexanesulfonic acid	ng/L	36.6	32.6	89	70	130	
Perfluorononanoic acid	ng/L	40.0	35.9	90	70	130	
Perfluorooctanoic acid	ng/L	40.0	35.5	89	70	130	
Perfluorooctanesulfonic acid	ng/L	37.1	33.0	89	70	130	
Perfluoropentanoic acid	ng/L	40.0	35.7	89	70	130	
Perfluorotetradecanoic acid	ng/L	40.0	29.8	75	70	130	
Perfluorotridecanoic acid	ng/L	40.0	38.8	97	70	130	
Perfluoroundecanoic acid	ng/L	40.0	36.3	91	70	130	

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	221040641	Instrument ID:	QQQ2
Analysis Date:	04/12/2021 16:14	Lab File ID:	2210412B_10.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	708255

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	10000	10700	107	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	10100	11800	117	70	130	
NEtFOSAA	ng/L	10000	10700	107	70	130	
NMeFOSAA	ng/L	10000	10000	100	70	130	
Perfluorobutanoic acid	ng/L	10000	10500	105	70	130	
Perfluorobutanesulfonic acid	ng/L	10000	10300	103	70	130	
Perfluorodecanoic acid	ng/L	10000	11200	112	70	130	
Perfluorododecanoic acid	ng/L	10000	10400	104	70	130	
Perfluoroheptanoic acid	ng/L	10000	10300	103	70	130	
Perfluorohexanoic acid	ng/L	10100	9330	92	70	130	
Perfluorohexanesulfonic acid	ng/L	10000	10400	104	70	130	
Perfluorononanoic acid	ng/L	10000	11900	119	70	130	
Perfluorooctanoic acid	ng/L	10100	10600	105	70	130	
Perfluorooctanesulfonic acid	ng/L	10000	9820	98	70	130	
Perfluoropentanoic acid	ng/L	10100	10300	102	70	130	
Perfluorotetradecanoic acid	ng/L	10000	10900	109	70	130	
Perfluorotridecanoic acid	ng/L	10000	9220	92	70	130	
Perfluoroundecanoic acid	ng/L	10000	10700	107	70	130	

4I

ORGANICS INSTRUMENT BLANK

Report No:	221040641	Instrument ID:	QQQ2
Analysis Date:	04/12/2021 16:01	Lab File ID:	2210412B_09.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	708255

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
6:2 Fluorotelomersulfonic acid	ng/L	2.00	U	0.94	2.00	4.00	
8:2 Fluorotelomersulfonic acid	ng/L	2.00	U	0.90	2.00	4.00	
NEtFOSAA	ng/L	4.00	U	0.97	4.00	8.00	
NMeFOSAA	ng/L	4.00	U	0.91	4.00	8.00	
Perfluorobutanesulfonic acid	ng/L	2.00	U	0.81	2.00	4.00	
Perfluorobutanoic acid	ng/L	2.00	U	0.90	2.00	4.00	
Perfluorodecanoic acid	ng/L	2.00	U	0.86	2.00	4.00	
Perfluorododecanoic acid	ng/L	2.00	U	0.88	2.00	4.00	
Perfluoroheptanoic acid	ng/L	2.00	U	0.48	2.00	4.00	
Perfluorohexanesulfonic acid	ng/L	2.00	U	0.95	2.00	4.00	
Perfluorohexanoic acid	ng/L	2.00	U	0.99	2.00	4.00	
Perfluorononanoic acid	ng/L	2.00	U	0.78	2.00	4.00	
Perfluorooctanesulfonic acid	ng/L	2.00	U	0.81	2.00	4.00	
Perfluorooctanoic acid	ng/L	2.00	U	0.95	2.00	4.00	
Perfluoropentanoic acid	ng/L	2.00	U	0.85	2.00	4.00	
Perfluorotetradecanoic acid	ng/L	2.00	U	0.98	2.00	4.00	
Perfluorotridecanoic acid	ng/L	2.00	U	0.99	2.00	4.00	
Perfluoroundecanoic acid	ng/L	2.00	U	0.95	2.00	4.00	

* - Result greater than 1/2 LOQ

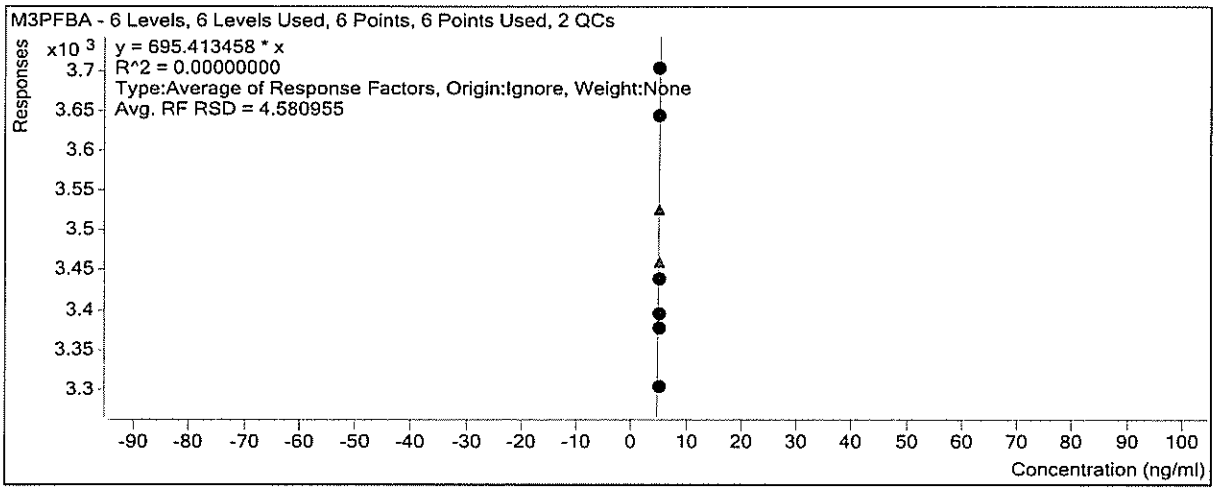
Quantitative Analysis Calibration Report

Batch Data Path	D:\MassHunter\Data\2210412BCAL\QuantResults\2210412B.batch.bin		
Analysis Time	4/13/2021 10:21 PM	**Analyst Name**	GCAL\lcms
Report Time	4/16/2021 6:35 AM	**Reporter Name**	GCAL\lcms
Last Calib Update	4/13/2021 1:28 PM	**Batch State**	Processed

Calibration Info

Instrument ISTD *M3PFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210412ACAL\2210412B_02.d	Calibration	1	☑	3377	5.0000	675.3775
D:\MassHunter\Data\2210412ACAL\2210412B_03.d	Calibration	2	☑	3644	5.0000	728.7557
D:\MassHunter\Data\2210412ACAL\2210412B_04.d	Calibration	3	☑	3703	5.0000	740.5873
D:\MassHunter\Data\2210412ACAL\2210412B_05.d	Calibration	4	☑	3439	5.0000	687.7956
D:\MassHunter\Data\2210412ACAL\2210412B_06.d	Calibration	5	☑	3396	5.0000	679.1713
D:\MassHunter\Data\2210412ACAL\2210412B_07.d	Calibration	6	☑	3304	5.0000	660.7934

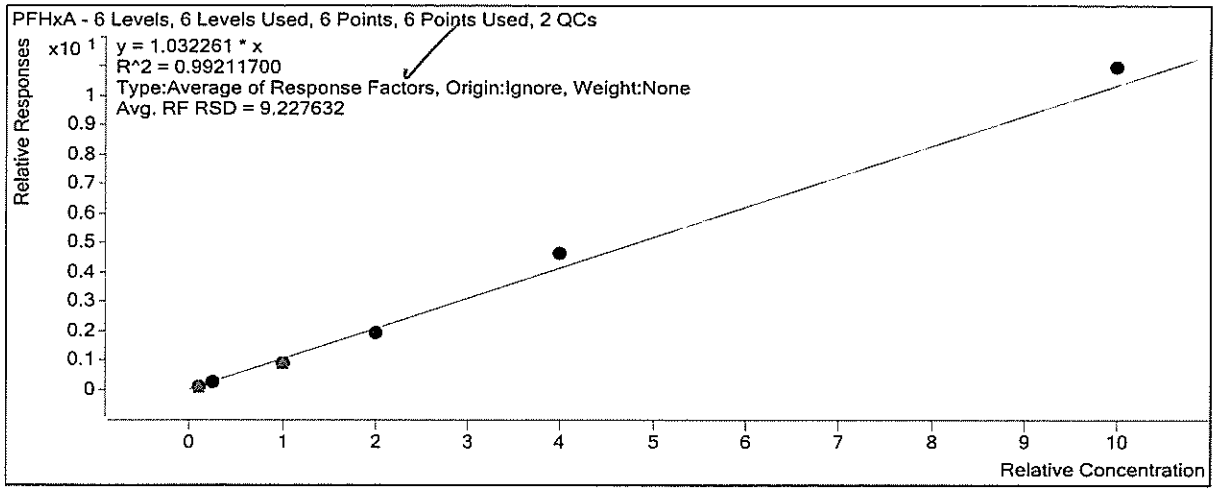


Extracted ISTD *MPFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210412ACAL\2210412B_02.d	Calibration	1	☑	19928	5.0000	3985.6553
D:\MassHunter\Data\2210412ACAL\2210412B_03.d	Calibration	2	☑	20543	5.0000	4108.5987
D:\MassHunter\Data\2210412ACAL\2210412B_04.d	Calibration	3	☑	20669	5.0000	4133.8106
D:\MassHunter\Data\2210412ACAL\2210412B_05.d	Calibration	4	☑	20506	5.0000	4101.2175
D:\MassHunter\Data\2210412ACAL\2210412B_06.d	Calibration	5	☑	19463	5.0000	3892.5988
D:\MassHunter\Data\2210412ACAL\2210412B_07.d	Calibration	6	☑	19904	5.0000	3980.7530

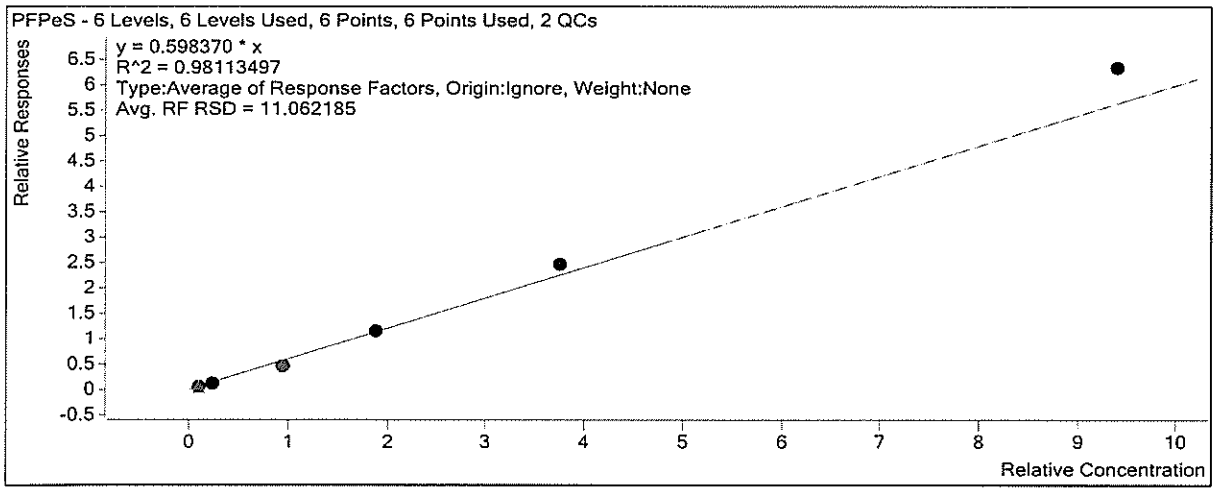
Target Compound *PFBA*

Quantitative Analysis Calibration Report



Target Compound *PFPeS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210412ACAL\2210412B_02.d	Calibration	1	☑	1034	0.4705	0.6138
D:\MassHunter\Data\2210412ACAL\2210412B_03.d	Calibration	2	☑	2382	1.1763	0.5473
D:\MassHunter\Data\2210412ACAL\2210412B_04.d	Calibration	3	☑	8979	4.7050	0.4975
D:\MassHunter\Data\2210412ACAL\2210412B_05.d	Calibration	4	☑	20411	9.4100	0.6027
D:\MassHunter\Data\2210412ACAL\2210412B_06.d	Calibration	5	☑	44362	18.8200	0.6561
D:\MassHunter\Data\2210412ACAL\2210412B_07.d	Calibration	6	☑	114760	47.0500	0.6728



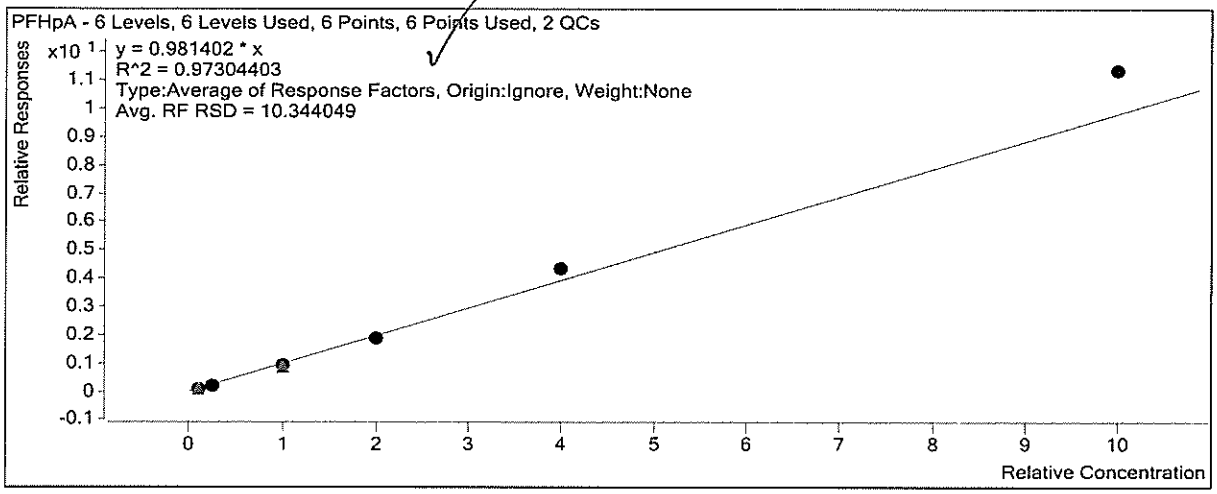
Extracted ISTD *M3HFPODA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210412ACAL\2210412B_02.d	Calibration	1	☑	702	10.0000	70.2235

Quantitative Analysis Calibration Report

Target Compound *PFHpA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210412ACAL\2210412B_02.d	Calibration	1	☑	1648	0.5000	0.9387
D:\MassHunter\Data\2210412ACAL\2210412B_03.d	Calibration	2	☑	4012	1.2500	0.8968
D:\MassHunter\Data\2210412ACAL\2210412B_04.d	Calibration	3	☑	16105	5.0000	0.9020
D:\MassHunter\Data\2210412ACAL\2210412B_05.d	Calibration	4	☑	33096	10.0000	0.9327
D:\MassHunter\Data\2210412ACAL\2210412B_06.d	Calibration	5	☑	74663	20.0000	1.0845
D:\MassHunter\Data\2210412ACAL\2210412B_07.d	Calibration	6	☑	189723	50.0000	1.1338



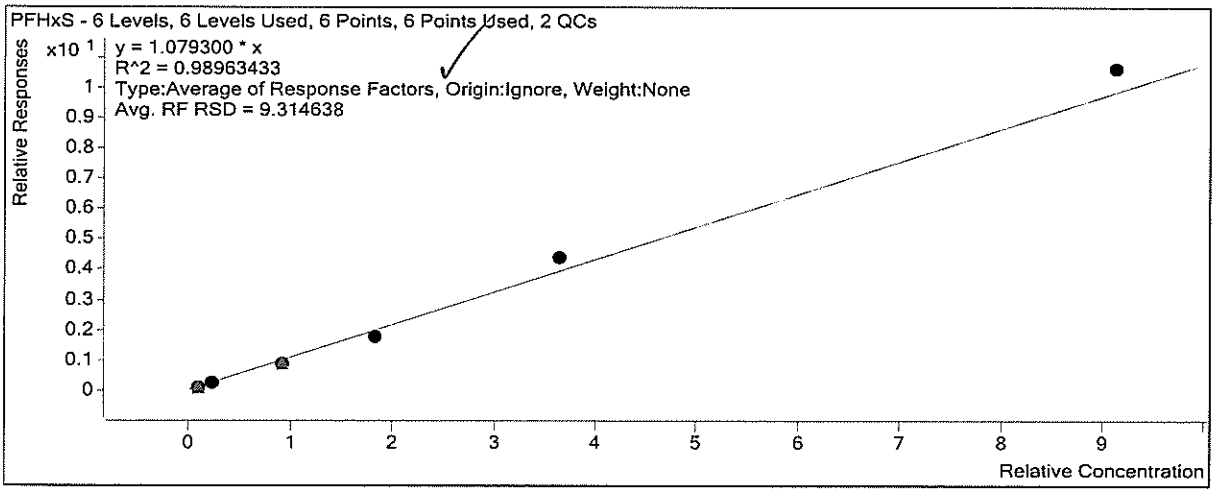
Extracted ISTD *M3PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210412ACAL\2210412B_02.d	Calibration	1	☑	11390	5.0000	2277.9105
D:\MassHunter\Data\2210412ACAL\2210412B_03.d	Calibration	2	☑	10902	5.0000	2180.3523
D:\MassHunter\Data\2210412ACAL\2210412B_04.d	Calibration	3	☑	11436	5.0000	2287.2417
D:\MassHunter\Data\2210412ACAL\2210412B_05.d	Calibration	4	☑	11480	5.0000	2295.9960
D:\MassHunter\Data\2210412ACAL\2210412B_06.d	Calibration	5	☑	11096	5.0000	2219.1690
D:\MassHunter\Data\2210412ACAL\2210412B_07.d	Calibration	6	☑	11336	5.0000	2267.2285

Target Compound *PFHxS*

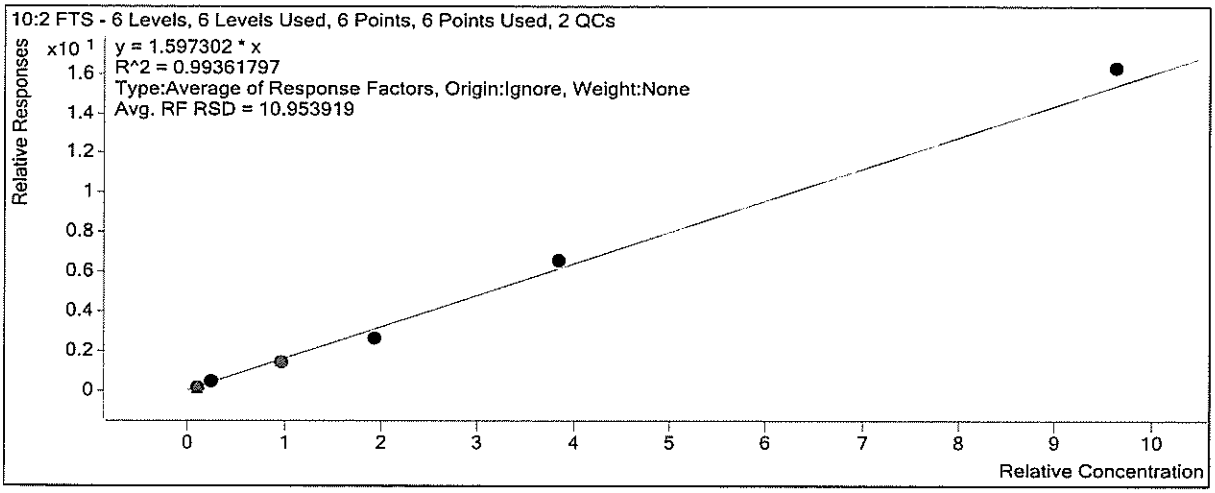
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210412ACAL\2210412B_02.d	Calibration	1	☑	1095	0.4570	1.0522

D:\MassHunter\Data\2210412ACAL\2210412B_03.d	Calibration	2	☑	2800	1.1425	1.1239
D:\MassHunter\Data\2210412ACAL\2210412B_04.d	Calibration	3	☑	10068	4.5700	0.9632
D:\MassHunter\Data\2210412ACAL\2210412B_05.d	Calibration	4	☑	20355	9.1400	0.9700
D:\MassHunter\Data\2210412ACAL\2210412B_06.d	Calibration	5	☑	48789	18.2800	1.2027
D:\MassHunter\Data\2210412ACAL\2210412B_07.d	Calibration	6	☑	120593	45.7000	1.1639



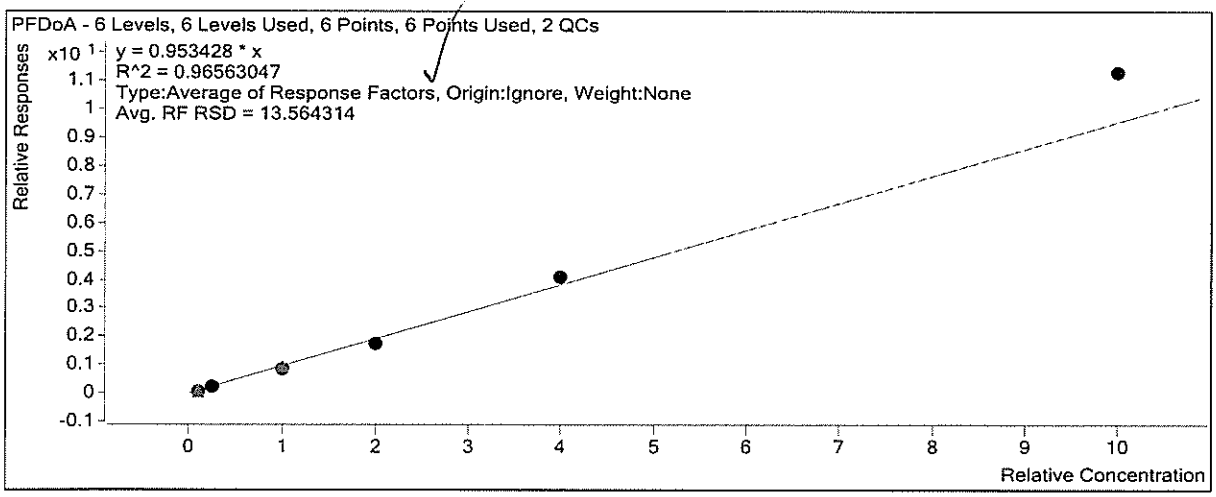
Target Compound *ADONA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210412ACAL\2210412B_02.d	Calibration	1	☑	6817	0.4725	2.5012
D:\MassHunter\Data\2210412ACAL\2210412B_03.d	Calibration	2	☑	16112	1.1813	2.1551
D:\MassHunter\Data\2210412ACAL\2210412B_04.d	Calibration	3	☑	66992	4.7250	2.3962
D:\MassHunter\Data\2210412ACAL\2210412B_05.d	Calibration	4	☑	136804	9.4500	2.5546
D:\MassHunter\Data\2210412ACAL\2210412B_06.d	Calibration	5	☑	314248	18.9000	2.9078
D:\MassHunter\Data\2210412ACAL\2210412B_07.d	Calibration	6	☑	773600	47.2500	2.7355



Target Compound *PFDoA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210412ACAL\2210412B_02.d	Calibration	1	☑	874	0.5000	0.7859
D:\MassHunter\Data\2210412ACAL\2210412B_03.d	Calibration	2	☑	3025	1.2500	1.0367
D:\MassHunter\Data\2210412ACAL\2210412B_04.d	Calibration	3	☑	10217	5.0000	0.8726
D:\MassHunter\Data\2210412ACAL\2210412B_05.d	Calibration	4	☑	21044	10.0000	0.8725
D:\MassHunter\Data\2210412ACAL\2210412B_06.d	Calibration	5	☑	47370	20.0000	1.0250
D:\MassHunter\Data\2210412ACAL\2210412B_07.d	Calibration	6	☑	118307	50.0000	1.1278



Extracted ISTD *d-NMeFOSA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210412ACAL\2210412B_02.d	Calibration	1	☑	7479	5.0000	1495.8564

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221040641	Instrument ID:	QQQ2
Analysis Date:	04/13/2021 07:10	Lab File ID:	2210412B_77.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	708255

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	9510	9340	98	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	10000	104	70	130	
NEtFOSAA	ng/L	10000	8660	87	70	130	
NMeFOSAA	ng/L	10000	8770	88	70	130	
Perfluorobutanoic acid	ng/L	10000	9410	94	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	7840	88	70	130	
Perfluorodecanoic acid	ng/L	10000	9100	91	70	130	
Perfluorododecanoic acid	ng/L	10000	10300	103	70	130	
Perfluoroheptanoic acid	ng/L	10000	9170	92	70	130	
Perfluorohexanoic acid	ng/L	10000	8720	87	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8040	88	70	130	
Perfluorononanoic acid	ng/L	10000	9700	97	70	130	
Perfluorooctanoic acid	ng/L	10000	9440	94	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8960	97	70	130	
Perfluoropentanoic acid	ng/L	10000	9090	91	70	130	
Perfluorotetradecanoic acid	ng/L	10000	7550	76	70	130	
Perfluorotridecanoic acid	ng/L	10000	10200	102	70	130	
Perfluoroundecanoic acid	ng/L	10000	10000	100	70	130	

FORM 7E - ORG

8I

INJECTION INTERNAL STANDARD AREA SUMMARY

Report No:	221040641	Standard ID:	1205 (ICAL Midpoint)
Analyst:	MRA	Instrument ID:	QQQ2
Analysis Date:	04/12/21 15:13	Lab File ID:	2210412B_06.d
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	708255

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		61058		155563		66715		52655	
CLIENT SAMPLE ID	*LAB SAMP ID*		#		#		#		#
MB2166311RE	2166311RE	73120		183178		80056		59262	
LCS2166312RE	2166312RE	62358		161599		75279		53235	
LCSD2166313RE	2166313RE	80464		203158		90396		66684	
CS-DECON-040521RE	22104064101RE	53254		141976		63903		46474	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

QQQ2 Run Log

Analyst:	MRA	Expiration:
Instrument:	QQQ2	
Batch:	2210414A	
Current ICAL Bath:	2210414ACAL	
20mM Amm Acetate	016-53-6	4/16/2021
Methanol	2130017	6/30/2025
Calibration Std	016-45-2	9/30/2021
ICV Std	016-21-3	8/2/2021
EIS Mix	016-52-6	9/2/2021
IIS Mix	016-50-1	10/7/2021

Name	Data File	Type	Acq. Date-Time	Comment	Dil.
MeOH Shot	2210414A_16.d	MeOH Shot	3/20/2005 14:30	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
MeOH Shot	2210414A_01.d	MeOH Shot	4/14/2021 11:48	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
1205 RT Check	2210414A_02.d	QC	4/14/2021 12:02	MRA,QQQ2	1
MeOH Shot	2210414A_03.d	MeOH Shot	4/14/2021 12:15	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
1201	2210414A_04.d	Cal	4/14/2021 12:28	MRA,QQQ2;Cal	1
1202	2210414A_05.d	Cal	4/14/2021 12:41	MRA,QQQ2;Cal	1
1203	2210414A_06.d	Cal	4/14/2021 12:54	MRA,QQQ2;Cal	1
1204	2210414A_07.d	Cal	4/14/2021 13:07	MRA,QQQ2;Cal	1
1205	2210414A_08.d	Cal	4/14/2021 13:20	MRA,QQQ2;Cal	1
1206	2210414A_09.d	Cal	4/14/2021 13:33	MRA,QQQ2;Cal	1
MeOH Shot	2210414A_10.d	MeOH Shot	4/14/2021 13:54	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
1500	2210414A_11.d	Sample	4/14/2021 14:08	MRA,QQQ2	1
1600	2210414A_12.d	Sample	4/14/2021 14:21	MRA,QQQ2	1
1450	2210414A_13.d	QC	4/14/2021 14:34	MRA,QQQ2	1
1450	2210414A_14.d	QC	4/14/2021 14:47	MRA,QQQ2	1
MeOH Shot	2210414A_15.d	MeOH Shot	4/14/2021 15:07	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
MeOH Shot	2210414A_17.d	MeOH Shot	4/14/2021 15:32	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
MeOH Shot	2210414A_18.d	MeOH Shot	4/14/2021 15:51	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
1600	2210414A_19.d	Sample	4/14/2021 16:05	MRA,QQQ2	1
1450	2210414A_21.d	QC	4/14/2021 16:29	MRA,QQQ2	1

MeOH Shot	2210414A_22.d	MeOH Shot	4/14/2021 16:42	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
2169239	2210414A_23.d	Sample	4/14/2021 16:55	MRA,QQQ2;708220	1
2169240	2210414A_24.d	QC	4/14/2021 17:08	MRA,QQQ2;708220	1
2169241	2210414A_25.d	QC	4/14/2021 17:21	MRA,QQQ2;708220	1
22104103323	2210414A_26.d	Sample	4/14/2021 17:34	MRA,QQQ2;708220	1
22104103324	2210414A_27.d	Sample	4/14/2021 17:48	MRA,QQQ2;708220	1
22104098801	2210414A_28.d	Sample	4/14/2021 18:01	MRA,QQQ2;708220	1
22104120801	2210414A_29.d	Sample	4/14/2021 18:14	MRA,QQQ2;708220	1
22104120802	2210414A_30.d	Sample	4/14/2021 18:27	MRA,QQQ2;708220	1
22104120803	2210414A_31.d	Sample	4/14/2021 18:40	MRA,QQQ2;708220	1
22104120804	2210414A_32.d	QC	4/14/2021 18:53	MRA,QQQ2;708220	1
22104120805	2210414A_33.d	QC	4/14/2021 19:06	MRA,QQQ2;708220	1
22104120806	2210414A_34.d	Sample	4/14/2021 19:20	MRA,QQQ2;708220	1
22104120807	2210414A_35.d	Sample	4/14/2021 19:33	MRA,QQQ2;708220	1
22104123913	2210414A_36.d	Sample	4/14/2021 19:46	MRA,QQQ2;708220	1
22104123914	2210414A_37.d	Sample	4/14/2021 19:59	MRA,QQQ2;708220	1
1400	2210414A_38.d	QC	4/14/2021 20:12	MRA,QQQ2;CCV	1
2169570	2210414A_39.d	Sample	4/14/2021 20:25	MRA,QQQ2;708280	1
2169571	2210414A_40.d	QC	4/14/2021 20:38	MRA,QQQ2;708280	1
22104103301	2210414A_41.d	Sample	4/14/2021 20:51	MRA,QQQ2;708280	1
22104103302	2210414A_42.d	Sample	4/14/2021 21:05	MRA,QQQ2;708280	1
22104103303 10x	2210414A_43.d	Sample	4/14/2021 21:18	MRA,QQQ2;708280	10
22104103304	2210414A_44.d	Sample	4/14/2021 21:31	MRA,QQQ2;708280	1
22104103305	2210414A_45.d	Sample	4/14/2021 21:44	MRA,QQQ2;708280	1
22104103306	2210414A_46.d	Sample	4/14/2021 21:57	MRA,QQQ2;708280	1
22104103307	2210414A_47.d	Sample	4/14/2021 22:10	MRA,QQQ2;708280	1
22104103308 10x	2210414A_48.d	Sample	4/14/2021 22:23	MRA,QQQ2;708280	10
22104103309 10x	2210414A_49.d	Sample	4/14/2021 22:36	MRA,QQQ2;708280	10
22104103310	2210414A_50.d	Sample	4/14/2021 22:49	MRA,QQQ2;708280	1
1400	2210414A_51.d	QC	4/14/2021 23:03	MRA,QQQ2;CCV	1
22104103311 10x	2210414A_52.d	Sample	4/14/2021 23:16	MRA,QQQ2;708280	10
22104103312 10x	2210414A_53.d	Sample	4/14/2021 23:29	MRA,QQQ2;708280	10
22104103313 10x	2210414A_54.d	Sample	4/14/2021 23:42	MRA,QQQ2;708280	10
22104103314 10x	2210414A_55.d	Sample	4/14/2021 23:55	MRA,QQQ2;708280	10

22104103315	2210414A_56.d	Sample	4/15/2021 0:08	MRA,QQQ2;708280	1
22104103319	2210414A_57.d	Sample	4/15/2021 0:21	MRA,QQQ2;708280	1
22104103320 10x	2210414A_58.d	Sample	4/15/2021 0:35	MRA,QQQ2;708280	10
22104103321	2210414A_59.d	Sample	4/15/2021 0:48	MRA,QQQ2;708280	1
22104103322	2210414A_60.d	Sample	4/15/2021 1:01	MRA,QQQ2;708280	1
22104103325	2210414A_61.d	Sample	4/15/2021 1:14	MRA,QQQ2;708280	1
22104103326	2210414A_62.d	Sample	4/15/2021 1:27	MRA,QQQ2;708280	1
22104103327	2210414A_63.d	Sample	4/15/2021 1:40	MRA,QQQ2;708280	1
1450	2210414A_64.d	QC	4/15/2021 1:53	MRA,QQQ2	1
1450	2210414A_65.d	QC	4/15/2021 2:06	MRA,QQQ2	1
2169411	2210414A_66.d	Sample	4/15/2021 2:20	MRA,QQQ2;708256	1
2169412	2210414A_67.d	QC	4/15/2021 2:33	MRA,QQQ2;708256	1
2169413	2210414A_68.d	QC	4/15/2021 2:46	MRA,QQQ2;708256	1
22104095901 500x DAI	2210414A_69.d	Sample	4/15/2021 2:59	MRA,QQQ2;708256	1
2169414 500x Dup	2210414A_70.d	Sample	4/15/2021 3:12	MRA,QQQ2;708256	1
2169415 500x MS	2210414A_71.d	Sample	4/15/2021 3:25	MRA,QQQ2;708256	1
22104095901 5000x DAI	2210414A_72.d	Sample	4/15/2021 3:38	MRA,QQQ2;708256	1
2169414 5000x Dup	2210414A_73.d	Sample	4/15/2021 3:51	MRA,QQQ2;708256	1
2169415 5000xMS	2210414A_74.d	Sample	4/15/2021 4:05	MRA,QQQ2;708256	1
2170472	2210414A_75.d	Sample	4/15/2021 4:18	MRA,QQQ2;708431	1
2170473	2210414A_76.d	QC	4/15/2021 4:31	MRA,QQQ2;708431	1
2170474	2210414A_77.d	QC	4/15/2021 4:44	MRA,QQQ2;708431	1
22104024001	2210414A_78.d	Sample	4/15/2021 4:57	MRA,QQQ2;708431	1
22104024002	2210414A_79.d	Sample	4/15/2021 5:10	MRA,QQQ2;708431	1
22104062401	2210414A_80.d	Sample	4/15/2021 5:23	MRA,QQQ2;708431	1
22104064101	2210414A_81.d	Sample	4/15/2021 5:36	MRA,QQQ2;708431	1
1400	2210414A_82.d	QC	4/15/2021 5:50	MRA,QQQ2;CCV	1
2170411	2210414A_83.d	Sample	4/15/2021 6:03	MRA,QQQ2;708428	1
2170412	2210414A_84.d	QC	4/15/2021 6:16	MRA,QQQ2;708428	1
2170413	2210414A_85.d	QC	4/15/2021 6:29	MRA,QQQ2;708428	1
22103302201 10x	2210414A_86.d	Sample	4/15/2021 6:42	MRA,QQQ2;708428	10
22103302201 1x	2210414A_87.d	Sample	4/15/2021 6:55	MRA,QQQ2;708428	1
22103302202	2210414A_88.d	Sample	4/15/2021 7:08	MRA,QQQ2;708428	1
22103302203	2210414A_89.d	Sample	4/15/2021 7:22	MRA,QQQ2;708428	1

22103302204	2210414A_90.d	Sample	4/15/2021 7:35	MRA,QQQ2;708428	1
22103302401	2210414A_91.d	Sample	4/15/2021 7:48	MRA,QQQ2;708428	1
22103302402	2210414A_92.d	Sample	4/15/2021 8:01	MRA,QQQ2;708428	1
1400	2210414A_93.d	QC	4/15/2021 8:14	MRA,QQQ2;CCV	1
22103302403 10x	2210414A_94.d	Sample	4/15/2021 8:27	MRA,QQQ2;708428	10
22103302403 1x	2210414A_95.d	Sample	4/15/2021 8:40	MRA,QQQ2;708428	1
22103302404 20x	2210414A_96.d	Sample	4/15/2021 8:54	MRA,QQQ2;708428	20
22103302404 1x	2210414A_97.d	Sample	4/15/2021 9:07	MRA,QQQ2;708428	1
22103302405	2210414A_98.d	Sample	4/15/2021 9:20	MRA,QQQ2;708428	1
21104093101 10x	2210414A_99.d	Sample	4/15/2021 9:33	MRA,QQQ2;708428	10
1400	2210414A_100.d	QC	4/15/2021 9:46	MRA,QQQ2;CCV	1
MeOH Shot	2210416A_01.d	MeOH Shot	4/16/2021 10:56	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1
1205 RT Check	2210416A_02.d	QC	4/16/2021 11:09	MRA,QQQ2	1
1204 starburst cap test	2210416A_03.d	QC	4/16/2021 11:22	MRA,QQQ2	1
1205 starburst cap test	2210416A_04.d	QC	4/16/2021 11:35	MRA,QQQ2	1
MeOH Shot	2210416A_05.d	MeOH Shot	4/16/2021 12:04	MRA,QQQ2;MeOH SHOT/INSTRUMENT IDLE	1

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	221040641	Instrument ID:	QQQ2
Analysis Date:	04/13/2021 04:32	Lab File ID:	2210412B_65.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	708255

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*%REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	38.1	42.4	111	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	38.4	39.9	104	70	130	
NEtFOSAA	ng/L	40.0	35.7	89	70	130	
NMeFOSAA	ng/L	40.0	34.4	86	70	130	
Perfluorobutanoic acid	ng/L	40.0	35.9	90	70	130	
Perfluorobutanesulfonic acid	ng/L	35.5	30.0	85	70	130	
Perfluorodecanoic acid	ng/L	40.0	34.6	87	70	130	
Perfluorododecanoic acid	ng/L	40.0	37.3	93	70	130	
Perfluoroheptanoic acid	ng/L	40.0	35.6	89	70	130	
Perfluorohexanoic acid	ng/L	40.0	34.9	87	70	130	
Perfluorohexanesulfonic acid	ng/L	36.6	32.6	89	70	130	
Perfluorononanoic acid	ng/L	40.0	35.2	88	70	130	
Perfluorooctanoic acid	ng/L	40.0	36.9	92	70	130	
Perfluorooctanesulfonic acid	ng/L	37.1	35.1	95	70	130	
Perfluoropentanoic acid	ng/L	40.0	37.4	94	70	130	
Perfluorotetradecanoic acid	ng/L	40.0	38.5	96	70	130	
Perfluorotridecanoic acid	ng/L	40.0	37.2	93	70	130	
Perfluoroundecanoic acid	ng/L	40.0	40.1	100	70	130	

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	221040641	Instrument ID:	QQQ2
Analysis Date:	04/15/2021 01:53	Lab File ID:	2210414A_64.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	708591

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	38.1	40.7	107	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	38.4	36.1	94	70	130	
NEtFOSAA	ng/L	40.0	32.0	80	70	130	
NMeFOSAA	ng/L	40.0	33.9	85	70	130	
Perfluorobutanoic acid	ng/L	40.0	35.8	90	70	130	
Perfluorobutanesulfonic acid	ng/L	35.5	32.6	92	70	130	
Perfluorodecanoic acid	ng/L	40.0	36.3	91	70	130	
Perfluorododecanoic acid	ng/L	40.0	38.2	96	70	130	
Perfluoroheptanoic acid	ng/L	40.0	35.3	88	70	130	
Perfluorohexanoic acid	ng/L	40.0	33.7	84	70	130	
Perfluorohexanesulfonic acid	ng/L	36.6	33.7	92	70	130	
Perfluorononanoic acid	ng/L	40.0	35.6	89	70	130	
Perfluorooctanoic acid	ng/L	40.0	34.3	86	70	130	
Perfluorooctanesulfonic acid	ng/L	37.1	56.0	151	70	130	*
Perfluoropentanoic acid	ng/L	40.0	37.0	92	70	130	
Perfluorotetradecanoic acid	ng/L	40.0	35.7	89	70	130	
Perfluorotridecanoic acid	ng/L	40.0	39.1	98	70	130	
Perfluoroundecanoic acid	ng/L	40.0	31.6	79	70	130	

*not target in this batch

FORM 7S - ORG

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	221040641	Instrument ID:	QQQ2
Analysis Date:	04/14/2021 16:05	Lab File ID:	2210414A_19.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	708591

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	10000	11700	117	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	10100	11300	111	70	130	
NEtFOSAA	ng/L	10000	11500	115	70	130	
NMeFOSAA	ng/L	10000	10900	109	70	130	
Perfluorobutanoic acid	ng/L	10000	10700	107	70	130	
Perfluorobutanesulfonic acid	ng/L	10000	10800	108	70	130	
Perfluorodecanoic acid	ng/L	10000	10800	108	70	130	
Perfluorododecanoic acid	ng/L	10000	12000	120	70	130	
Perfluoroheptanoic acid	ng/L	10000	11300	113	70	130	
Perfluorohexanoic acid	ng/L	10100	11800	116	70	130	
Perfluorohexanesulfonic acid	ng/L	10000	10800	108	70	130	
Perfluorononanoic acid	ng/L	10000	12500	125	70	130	
Perfluorooctanoic acid	ng/L	10100	10900	108	70	130	
Perfluorooctanesulfonic acid	ng/L	10000	11100	111	70	130	
Perfluoropentanoic acid	ng/L	10100	11500	114	70	130	
Perfluorotetradecanoic acid	ng/L	10000	11600	116	70	130	
Perfluorotridecanoic acid	ng/L	10000	11500	115	70	130	
Perfluoroundecanoic acid	ng/L	10000	9900	99	70	130	

FORM 6I - ORG

4I

ORGANICS INSTRUMENT BLANK

Report No:	221040641	Instrument ID:	QQQ2
Analysis Date:	04/14/2021 14:08	Lab File ID:	2210414A_11.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	708591

ANALYTE	*UNITS*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*	*#*
6:2 Fluorotelomersulfonic acid	ng/L	1.85	J	0.94	2.00	4.00	
8:2 Fluorotelomersulfonic acid	ng/L	2.00	U	0.90	2.00	4.00	
NEtFOSAA	ng/L	4.00	U	0.97	4.00	8.00	
NMeFOSAA	ng/L	4.00	U	0.91	4.00	8.00	
Perfluorobutanesulfonic acid	ng/L	2.00	U	0.81	2.00	4.00	
Perfluorobutanoic acid	ng/L	1.56	J	0.90	2.00	4.00	
Perfluorodecanoic acid	ng/L	2.00	U	0.86	2.00	4.00	
Perfluorododecanoic acid	ng/L	2.00	U	0.88	2.00	4.00	
Perfluoroheptanoic acid	ng/L	2.00	U	0.48	2.00	4.00	
Perfluorohexanesulfonic acid	ng/L	2.00	U	0.95	2.00	4.00	
Perfluorohexanoic acid	ng/L	2.00	U	0.99	2.00	4.00	
Perfluorononanoic acid	ng/L	2.00	U	0.78	2.00	4.00	
Perfluorooctanesulfonic acid	ng/L	2.00	U	0.81	2.00	4.00	
Perfluorooctanoic acid	ng/L	2.00	U	0.95	2.00	4.00	
Perfluoropentanoic acid	ng/L	2.00	U	0.85	2.00	4.00	
Perfluorotetradecanoic acid	ng/L	2.00	U	0.98	2.00	4.00	
Perfluorotridecanoic acid	ng/L	2.00	U	0.99	2.00	4.00	
Perfluoroundecanoic acid	ng/L	2.00	U	0.95	2.00	4.00	

* - Result greater than 1/2 LOQ

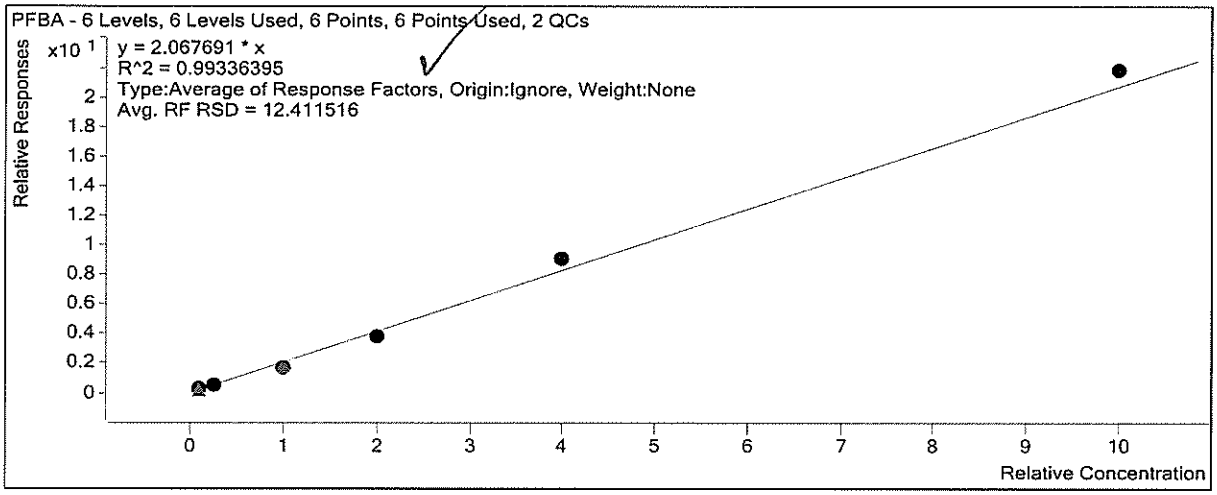
Quantitative Analysis Calibration Report

Batch Data Path	D:\MassHunter\Data\2210414ACAL\QuantResults\2210414A.batch.bin		
Analysis Time	4/16/2021 8:35 AM	**Analyst Name**	GCAL\lcms
Report Time	4/16/2021 8:39 AM	**Reporter Name**	GCAL\lcms
Last Calib Update	4/14/2021 4:46 PM	**Batch State**	Processed

Calibration Info

Target Compound *PFBA*

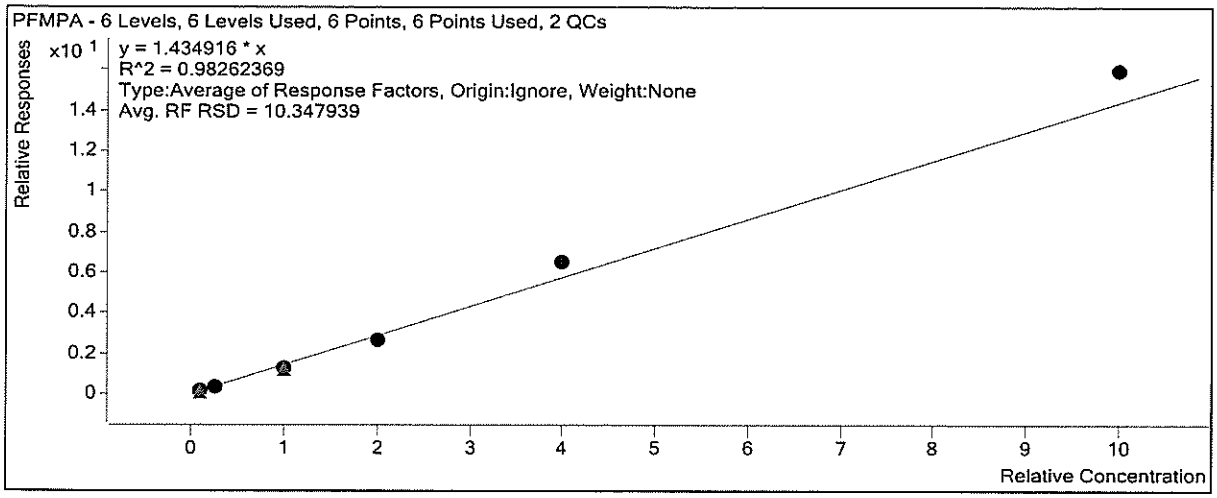
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210414ACAL\2210414A_04.d	Calibration	1	☑	5535	0.5000	2.4105
D:\MassHunter\Data\2210414ACAL\2210414A_05.d	Calibration	2	☑	11753	1.2500	1.9254
D:\MassHunter\Data\2210414ACAL\2210414A_06.d	Calibration	3	☑	49350	5.0000	1.7464
D:\MassHunter\Data\2210414ACAL\2210414A_07.d	Calibration	4	☑	101959	10.0000	1.8756
D:\MassHunter\Data\2210414ACAL\2210414A_08.d	Calibration	5	☑	235722	20.0000	2.2592
D:\MassHunter\Data\2210414ACAL\2210414A_09.d	Calibration	6	☑	617427	50.0000	2.1890



Instrument ISTD *M3PFBA*

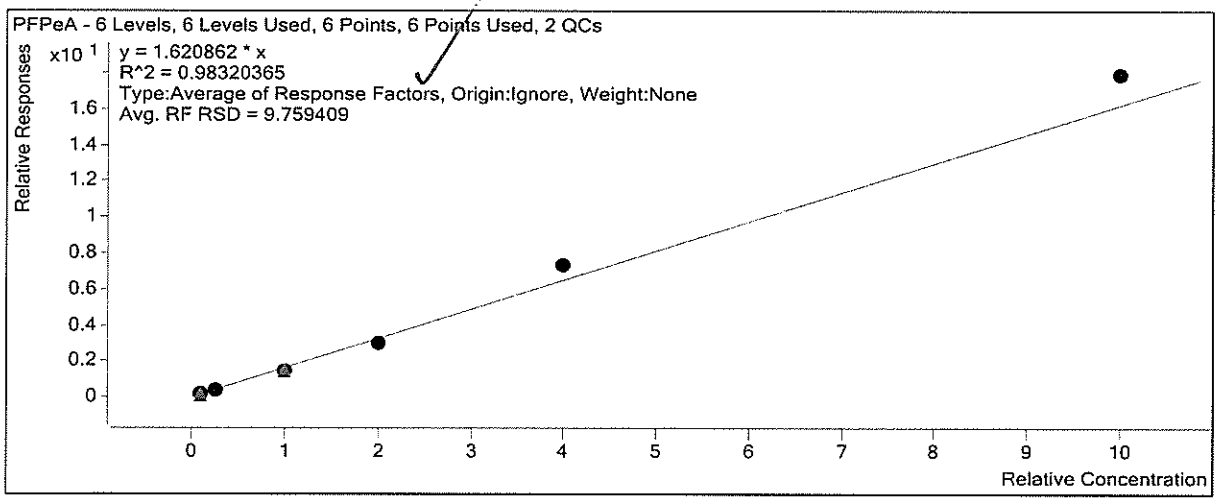
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210414ACAL\2210414A_04.d	Calibration	1	☑	3849	5.0000	769.8416
D:\MassHunter\Data\2210414ACAL\2210414A_05.d	Calibration	2	☑	4193	5.0000	838.5401
D:\MassHunter\Data\2210414ACAL\2210414A_06.d	Calibration	3	☑	4659	5.0000	931.7340
D:\MassHunter\Data\2210414ACAL\2210414A_07.d	Calibration	4	☑	4593	5.0000	918.6134
D:\MassHunter\Data\2210414ACAL\2210414A_08.d	Calibration	5	☑	4585	5.0000	917.0199
D:\MassHunter\Data\2210414ACAL\2210414A_09.d	Calibration	6	☑	4926	5.0000	985.1665

Quantitative Analysis Calibration Report



Target Compound *PFPeA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210414ACAL\2210414A_04.d	Calibration	1	☑	2482	0.5000	1.5818
D:\MassHunter\Data\2210414ACAL\2210414A_05.d	Calibration	2	☑	6474	1.2500	1.5251
D:\MassHunter\Data\2210414ACAL\2210414A_06.d	Calibration	3	☑	28417	5.0000	1.4716
D:\MassHunter\Data\2210414ACAL\2210414A_07.d	Calibration	4	☑	56450	10.0000	1.5085
D:\MassHunter\Data\2210414ACAL\2210414A_08.d	Calibration	5	☑	132101	20.0000	1.8413
D:\MassHunter\Data\2210414ACAL\2210414A_09.d	Calibration	6	☑	348115	50.0000	1.7968



Extracted ISTD *M5PFPeA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210414ACAL\2210414A_04.d	Calibration	1	☑	15691	5.0000	3138.1515

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221040641	Instrument ID:	QQQ2
Analysis Date:	04/14/2021 23:03	Lab File ID:	2210414A_51.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	708591

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	9510	9330	98	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9030	94	70	130	
NEtFOSAA	ng/L	10000	8440	84	70	130	
NMeFOSAA	ng/L	10000	9570	96	70	130	
Perfluorobutanoic acid	ng/L	10000	9250	92	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8750	99	70	130	
Perfluorodecanoic acid	ng/L	10000	10100	101	70	130	
Perfluorododecanoic acid	ng/L	10000	10600	106	70	130	
Perfluoroheptanoic acid	ng/L	10000	10000	100	70	130	
Perfluorohexanoic acid	ng/L	10000	10300	103	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8700	95	70	130	
Perfluorononanoic acid	ng/L	10000	9370	94	70	130	
Perfluorooctanoic acid	ng/L	10000	9170	92	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	9050	98	70	130	
Perfluoropentanoic acid	ng/L	10000	9650	97	70	130	
Perfluorotetradecanoic acid	ng/L	10000	10400	104	70	130	
Perfluorotridecanoic acid	ng/L	10000	10200	102	70	130	
Perfluoroundecanoic acid	ng/L	10000	8070	81	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221040641	Instrument ID:	QQQ2
Analysis Date:	04/15/2021 05:50	Lab File ID:	2210414A_82.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	708591

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	9510	8750	92	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9770	102	70	130	
NEtFOSAA	ng/L	10000	8820	88	70	130	
NMeFOSAA	ng/L	10000	9700	97	70	130	
Perfluorobutanoic acid	ng/L	10000	9160	92	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8180	92	70	130	
Perfluorodecanoic acid	ng/L	10000	9550	95	70	130	
Perfluorododecanoic acid	ng/L	10000	8910	89	70	130	
Perfluoroheptanoic acid	ng/L	10000	10200	102	70	130	
Perfluorohexanoic acid	ng/L	10000	9970	100	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8560	94	70	130	
Perfluorononanoic acid	ng/L	10000	10000	100	70	130	
Perfluorooctanoic acid	ng/L	10000	9280	93	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	9260	100	70	130	
Perfluoropentanoic acid	ng/L	10000	9750	97	70	130	
Perfluorotetradecanoic acid	ng/L	10000	8980	90	70	130	
Perfluorotridecanoic acid	ng/L	10000	9340	93	70	130	
Perfluoroundecanoic acid	ng/L	10000	8830	88	70	130	

FORM 7E - ORG

8I

INJECTION INTERNAL STANDARD AREA SUMMARY

Report No:	221040641	Standard ID:	1205 (ICAL Midpoint)
Analyst:	MRA	Instrument ID:	QQQ2
Analysis Date:	04/14/21 13:20	Lab File ID:	2210414A_08.d
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	708591

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		65345		191855		74722		59626	
CLIENT SAMPLE ID	*LAB SAMP ID*		*#*		*#*		*#*		*#*
MB2170472	2170472	49342		153784		61291		45981	
LCS2170473	2170473	52517		148255		61912		45047	
LCSD2170474	2170474	50475		154007		61720		46305	
CS-DECON-040521RE1	22104064101RE1	50376		153569		61829		46608	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

LC-QQQ Instrument Run Log

Agilent

Instrument: QQQ 3
Instrument Batch: 2210728A.batch.bin
Current ICAL Batch: 2210727BCAL
ICAL Std (ID/Exp): 016-100-9 11/17/21
ICV Std (ID/Exp): 019-6-1 10/18/21

LIMS Batch (HBN): 717333
20mM NH4OAc (ID/Exp): 019-6-5 7/30/21
Methanol (ID/Exp): 2130465 6/10/25
EIS Mix (ID/Exp): 019-2-2 1/19/22
IIS Mix (ID/Exp): 019-1-4 1/18/22

Acquisition time	Data File	Name	Type	Dilution	Comment
07/27/21 14:09:56	2210727B_1.d	1201	Cal	1	ADA,QQQ3;ICAL
07/27/21 14:24:41	2210727B_2.d	1202	Cal	1	ADA,QQQ3;ICAL
07/27/21 14:39:17	2210727B_3.d	1203	Cal	1	ADA,QQQ3;ICAL
07/27/21 14:53:53	2210727B_4.d	1204	Cal	1	ADA,QQQ3;ICAL
07/27/21 15:08:30	2210727B_5.d	1205	Cal	1	ADA,QQQ3;ICAL
07/27/21 15:23:06	2210727B_6.d	1206	Cal	1	ADA,QQQ3;ICAL
07/27/21 15:37:43	2210727B_7.d	1207	Cal	1	ADA,QQQ3;ICAL
07/27/21 16:06:01	2210727B_8.d	1500	Blank	1	ADA,QQQ3;ICAL
07/27/21 16:20:46	2210727B_9.d	1600	Sample	1	ADA,QQQ3;ICAL
07/27/21 16:35:23	2210727B_10.d	1450	QC	1	ADA,QQQ3;ICAL
07/28/21 10:58:18	2210728A_2.d	1400 RT TEST	QC	1	ADA,QQQ3;RT TEST
07/28/21 11:21:35	2210728A_3.d	1500	Blank	1	ADA,QQQ3;Calibration Blank
07/28/21 11:36:21	2210728A_4.d	1450	QC	1	ADA,QQQ3;CCV
07/28/21 11:57:50	2210728A_5.d	2218045	Sample	1	ADA,QQQ3;717017
07/28/21 12:12:36	2210728A_6.d	2218046	Sample	1	ADA,QQQ3;717017
07/28/21 12:27:15	2210728A_7.d	2218047	Sample	1	ADA,QQQ3;717017
07/28/21 12:41:52	2210728A_8.d	22106234315	Sample	1	ADA,QQQ3;716540
07/28/21 12:56:29	2210728A_9.d	22106234306	Sample	1	ADA,QQQ3;716540
07/28/21 13:11:06	2210728A_10.d	MEOH SHOT	Sample	1	ADA,QQQ3;MEOH SHOT
07/28/21 13:25:44	2210728A_11.d	22107169418	Sample	5	ADA,QQQ3;716540
07/28/21 13:40:21	2210728A_12.d	22107169420	Sample	5	ADA,QQQ3;716540
07/28/21 13:55:14	2210728A_13.d	22107169421	Sample	5	ADA,QQQ3;716540
07/28/21 14:09:50	2210728A_14.d	22107137219	Sample	50	ADA,QQQ3;716533
07/28/21 14:24:26	2210728A_15.d	22107137219	Sample	5	ADA,QQQ3;716533
07/28/21 14:39:03	2210728A_16.d	MEOH SHOT	Blank	1	ADA,QQQ3;MEOH SHOT
07/28/21 14:53:43	2210728A_17.d	1500 TEST	Blank	1	ADA,QQQ3;BASIC MEOH TEST
07/28/21 15:08:20	2210728A_18.d	22106193206	Sample	1	ADA,QQQ3;716856
07/28/21 15:22:56	2210728A_19.d	22106266903	Sample	10	ADA,QQQ3;716386
07/28/21 15:38:06	2210728A_20.d	22106266904	Sample	10	ADA,QQQ3;716386
07/28/21 15:52:43	2210728A_21.d	22107283601	Sample	1	ADA,QQQ3;717017
07/28/21 16:08:11	2210728A_22.d	1400	QC	1	ADA,QQQ3;CCV
07/28/21 16:22:52	2210728A_23.d	22107160718	Sample	5	ADA,QQQ3;716534
07/28/21 16:37:29	2210728A_24.d	22107155513	Sample	50	ADA,QQQ3;716773
07/28/21 16:52:06	2210728A_25.d	22107155513	Sample	5	ADA,QQQ3;716773
07/28/21 17:06:43	2210728A_26.d	MEOH SHOT	Blank	1	ADA,QQQ3;MEOH SHOT
07/28/21 17:21:23	2210728A_27.d	2217152	Blank	1	ADA,QQQ3;Shared MB with 717002
07/28/21 17:35:59	2210728A_28.d	1400	QC	1	ADA,QQQ3;CCV
07/28/21 17:50:36	2210728A_29.d	22106236101	Sample	1	ADA,QQQ3; 717017
07/28/21 18:05:12	2210728A_30.d	22106236204	Sample	1	ADA,QQQ3; 717017
07/28/21 18:19:48	2210728A_31.d	22106236205	Sample	1	ADA,QQQ3; 717017
07/28/21 18:34:25	2210728A_32.d	22107241601	Sample	1	ADA,QQQ3; 717017
07/28/21 18:49:01	2210728A_33.d	22107241602	Sample	1	ADA,QQQ3; 717017
07/28/21 19:03:37	2210728A_34.d	22107241603	Sample	1	ADA,QQQ3; 717017
07/28/21 19:18:14	2210728A_35.d	22107241604	Sample	1	ADA,QQQ3; 717017
07/28/21 19:32:51	2210728A_36.d	22107241605	Sample	1	ADA,QQQ3; 717017
07/28/21 19:47:30	2210728A_37.d	22107241606	Sample	1	ADA,QQQ3; 717017
07/28/21 20:02:06	2210728A_38.d	22107241607	Sample	1	ADA,QQQ3; 717017
07/28/21 20:16:43	2210728A_39.d	1400	QC	1	ADA,QQQ3; CCV

LC-QQQ Instrument Run Log

Agilent

Instrument: QQQ 3
Instrument Batch: 2210728B.batch.bin
Current ICAL Batch: 2210727BCAL
ICAL Std (ID/Exp): 016-100-9 11/17/21
ICV Std (ID/Exp): 019-6-1 10/18/21

LIMS Batch (HBN): 717333/717350
20mM NH4OAc (ID/Exp): 019-6-5 7/30/21
Methanol (ID/Exp): 2130465 6/10/25
EIS Mix (ID/Exp): 019-2-2 1/19/22
IIS Mix (ID/Exp): 019-1-4 1/18/22

Acquisition time	Data File	Name	Type	Dilution	Comment
07/27/21 14:09:56	2210727B_1.d	1201	Cal	1	ADA,QQQ3;ICAL
07/27/21 14:24:41	2210727B_2.d	1202	Cal	1	ADA,QQQ3;ICAL
07/27/21 14:39:17	2210727B_3.d	1203	Cal	1	ADA,QQQ3;ICAL
07/27/21 14:53:53	2210727B_4.d	1204	Cal	1	ADA,QQQ3;ICAL
07/27/21 15:08:30	2210727B_5.d	1205	Cal	1	ADA,QQQ3;ICAL
07/27/21 15:23:06	2210727B_6.d	1206	Cal	1	ADA,QQQ3;ICAL
07/27/21 15:37:43	2210727B_7.d	1207	Cal	1	ADA,QQQ3;ICAL
07/27/21 16:06:01	2210727B_8.d	1500	Blank	1	ADA,QQQ3;ICAL
07/27/21 16:20:46	2210727B_9.d	1600	Sample	1	ADA,QQQ3;ICAL
07/27/21 16:35:23	2210727B_10.d	1450	QC	1	ADA,QQQ3;ICAL
07/28/21 20:31:19	2210728B_1.d	1500	Blank	1	ADA,QQQ3; BLANK; sequence error, RR
07/28/21 20:45:55	2210728B_2.d	22107241608	Sample	1	ADA,QQQ3; 717017; sequence error, RR
07/28/21 21:00:31	2210728B_3.d	1450	QC	1	ADA,QQQ3; CCV
07/28/21 21:15:07	2210728B_4.d	1500	Blank	1	ADA,QQQ3; BLANK
07/28/21 21:29:44	2210728B_5.d	22107241608	Sample	1	ADA,QQQ3; 717017
07/28/21 21:44:20	2210728B_6.d	22107241609	Sample	1	ADA,QQQ3; 717017
07/28/21 21:58:57	2210728B_7.d	22107241610	Sample	1	ADA,QQQ3; 717017
07/28/21 22:13:36	2210728B_8.d	22107241612	Sample	1	ADA,QQQ3; 717017
07/28/21 22:28:12	2210728B_9.d	22107241613	Sample	1	ADA,QQQ3; 717017
07/28/21 22:42:48	2210728B_10.d	22107241614	Sample	1	ADA,QQQ3; 717017
07/28/21 22:57:25	2210728B_11.d	22107241615	Sample	1	ADA,QQQ3; 717017
07/28/21 23:12:02	2210728B_12.d	22107241706	Sample	1	ADA,QQQ3; 717017
07/28/21 23:26:39	2210728B_13.d	22107241707	Sample	1	ADA,QQQ3; 717017
07/28/21 23:41:14	2210728B_14.d	22107241708	Sample	1	ADA,QQQ3; 717017
07/28/21 23:55:51	2210728B_15.d	1400	QC	1	ADA,QQQ3; CCV

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/28/2021 11:36	Lab File ID:	2210728A_4.d
Analytical Method:		Analytical Batch:	717333

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	3.81	3.57	94	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	3.84	3.76	98	70	130	
NEtFOSAA	ng/L	4.00	3.72	93	70	130	
NMeFOSAA	ng/L	4.00	4.06	102	70	130	
Perfluorobutanoic acid	ng/L	4.00	3.86	97	70	130	
Perfluorobutanesulfonic acid	ng/L	3.55	3.49	98	70	130	
Perfluorodecanoic acid	ng/L	4.00	3.94	98	70	130	
Perfluorododecanoic acid	ng/L	4.00	3.86	96	70	130	
Perfluoroheptanoic acid	ng/L	4.00	3.81	95	70	130	
Perfluorohexanoic acid	ng/L	4.00	3.94	98	70	130	
Perfluorohexanesulfonic acid	ng/L	3.66	3.73	102	70	130	
Perfluorononanoic acid	ng/L	4.00	3.89	97	70	130	
Perfluorooctanoic acid	ng/L	4.00	3.86	96	70	130	
Perfluorooctanesulfonic acid	ng/L	3.71	3.80	102	70	130	
Perfluoropentanoic acid	ng/L	4.00	3.97	99	70	130	
Perfluorotetradecanoic acid	ng/L	4.00	3.91	98	70	130	
Perfluorotridecanoic acid	ng/L	4.00	4.12	103	70	130	
Perfluoroundecanoic acid	ng/L	4.00	3.75	94	70	130	

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/28/2021 21:00	Lab File ID:	2210728B_3.d
Analytical Method:		Analytical Batch:	717350

ANALYTE	UNITS	TRUE	FOUND	%REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	3.81	3.71	98	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	3.84	3.64	95	70	130	
NEtFOSAA	ng/L	4.00	3.66	91	70	130	
NMeFOSAA	ng/L	4.00	3.55	89	70	130	
Perfluorobutanoic acid	ng/L	4.00	3.86	96	70	130	
Perfluorobutanesulfonic acid	ng/L	3.55	3.30	93	70	130	
Perfluorodecanoic acid	ng/L	4.00	3.83	96	70	130	
Perfluorododecanoic acid	ng/L	4.00	3.82	95	70	130	
Perfluoroheptanoic acid	ng/L	4.00	3.78	94	70	130	
Perfluorohexanoic acid	ng/L	4.00	3.94	98	70	130	
Perfluorohexanesulfonic acid	ng/L	3.66	3.80	104	70	130	
Perfluorononanoic acid	ng/L	4.00	3.70	92	70	130	
Perfluorooctanoic acid	ng/L	4.00	3.86	97	70	130	
Perfluorooctanesulfonic acid	ng/L	3.71	3.74	101	70	130	
Perfluoropentanoic acid	ng/L	4.00	3.94	99	70	130	
Perfluorotetradecanoic acid	ng/L	4.00	3.79	95	70	130	
Perfluorotridecanoic acid	ng/L	4.00	3.83	96	70	130	
Perfluoroundecanoic acid	ng/L	4.00	3.86	97	70	130	

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/27/2021 16:20	Lab File ID:	2210727B_9.d
Analytical Method:		Analytical Batch:	717230

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	10000	10900	109	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	10100	10600	105	70	130	
NEtFOSAA	ng/L	10000	10300	103	70	130	
NMeFOSAA	ng/L	10000	10800	108	70	130	
Perfluorobutanoic acid	ng/L	10000	10600	106	70	130	
Perfluorobutanesulfonic acid	ng/L	10000	10200	102	70	130	
Perfluorodecanoic acid	ng/L	10000	10900	109	70	130	
Perfluorododecanoic acid	ng/L	10000	10500	105	70	130	
Perfluoroheptanoic acid	ng/L	10000	10500	105	70	130	
Perfluorohexanoic acid	ng/L	10100	10500	104	70	130	
Perfluorohexanesulfonic acid	ng/L	10000	10400	104	70	130	
Perfluorononanoic acid	ng/L	10000	11300	113	70	130	
Perfluorooctanoic acid	ng/L	10100	10200	101	70	130	
Perfluorooctanesulfonic acid	ng/L	10000	9200	92	70	130	
Perfluoropentanoic acid	ng/L	10100	11000	108	70	130	
Perfluorotetradecanoic acid	ng/L	10000	11000	110	70	130	
Perfluorotridecanoic acid	ng/L	10000	9580	96	70	130	
Perfluoroundecanoic acid	ng/L	10000	10300	103	70	130	

4I

ORGANICS INSTRUMENT BLANK

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/28/2021 11:21	Lab File ID:	2210728A_3.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	717333

ANALYTE	*UNITS*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*	*#*
6:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.50	3.00	4.00	
8:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.06	3.00	4.00	
NEtFOSAA	ng/L	4.00	U	1.58	4.00	8.00	
NMeFOSAA	ng/L	4.00	U	0.90	4.00	8.00	
Perfluorobutanesulfonic acid	ng/L	2.00	U	0.62	2.00	4.00	
Perfluorobutanoic acid	ng/L	3.50	U	1.52	3.50	4.00	
Perfluorodecanoic acid	ng/L	3.00	U	1.44	3.00	4.00	
Perfluorododecanoic acid	ng/L	3.00	U	1.30	3.00	4.00	
Perfluoroheptanoic acid	ng/L	3.00	U	1.16	3.00	4.00	
Perfluorohexanesulfonic acid	ng/L	3.00	U	1.24	3.00	4.00	
Perfluorohexanoic acid	ng/L	2.00	U	0.94	2.00	4.00	
Perfluorononanoic acid	ng/L	2.00	U	0.98	2.00	4.00	
Perfluorooctanesulfonic acid	ng/L	2.00	U	0.76	2.00	4.00	
Perfluorooctanoic acid	ng/L	2.00	U	0.84	2.00	4.00	
Perfluoropentanoic acid	ng/L	2.00	U	0.88	2.00	4.00	
Perfluorotetradecanoic acid	ng/L	3.00	U	1.14	3.00	4.00	
Perfluorotridecanoic acid	ng/L	3.00	U	1.23	3.00	4.00	
Perfluoroundecanoic acid	ng/L	3.00	U	1.24	3.00	4.00	

* - Result greater than 1/2 LOQ

4I

ORGANICS INSTRUMENT BLANK

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/28/2021 21:15	Lab File ID:	2210728B_4.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	717350

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
6:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.50	3.00	4.00	
8:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.06	3.00	4.00	
NEtFOSAA	ng/L	4.00	U	1.58	4.00	8.00	
NMeFOSAA	ng/L	4.00	U	0.90	4.00	8.00	
Perfluorobutanesulfonic acid	ng/L	2.00	U	0.62	2.00	4.00	
Perfluorobutanoic acid	ng/L	3.50	U	1.52	3.50	4.00	
Perfluorodecanoic acid	ng/L	3.00	U	1.44	3.00	4.00	
Perfluorododecanoic acid	ng/L	3.00	U	1.30	3.00	4.00	
Perfluoroheptanoic acid	ng/L	3.00	U	1.16	3.00	4.00	
Perfluorohexanesulfonic acid	ng/L	3.00	U	1.24	3.00	4.00	
Perfluorohexanoic acid	ng/L	2.00	U	0.94	2.00	4.00	
Perfluorononanoic acid	ng/L	2.00	U	0.98	2.00	4.00	
Perfluorooctanesulfonic acid	ng/L	2.00	U	0.76	2.00	4.00	
Perfluorooctanoic acid	ng/L	2.00	U	0.84	2.00	4.00	
Perfluoropentanoic acid	ng/L	2.00	U	0.88	2.00	4.00	
Perfluorotetradecanoic acid	ng/L	3.00	U	1.14	3.00	4.00	
Perfluorotridecanoic acid	ng/L	3.00	U	1.23	3.00	4.00	
Perfluoroundecanoic acid	ng/L	3.00	U	1.24	3.00	4.00	

* - Result greater than 1/2 LOQ

Quantitative Analysis Calibration Report

Batch Data Path	C:\MassHunter\Data\QQQ3\2210727BCAL\QuantResults\2210728A.batch.bin		
Analysis Time	8/2/2021 9:35 AM	**Analyst Name**	GCAL\lcms
Report Time	8/2/2021 9:43 AM	**Reporter Name**	GCAL\lcms
Last Calib Update	7/27/2021 4:55 PM	**Batch State**	Processed

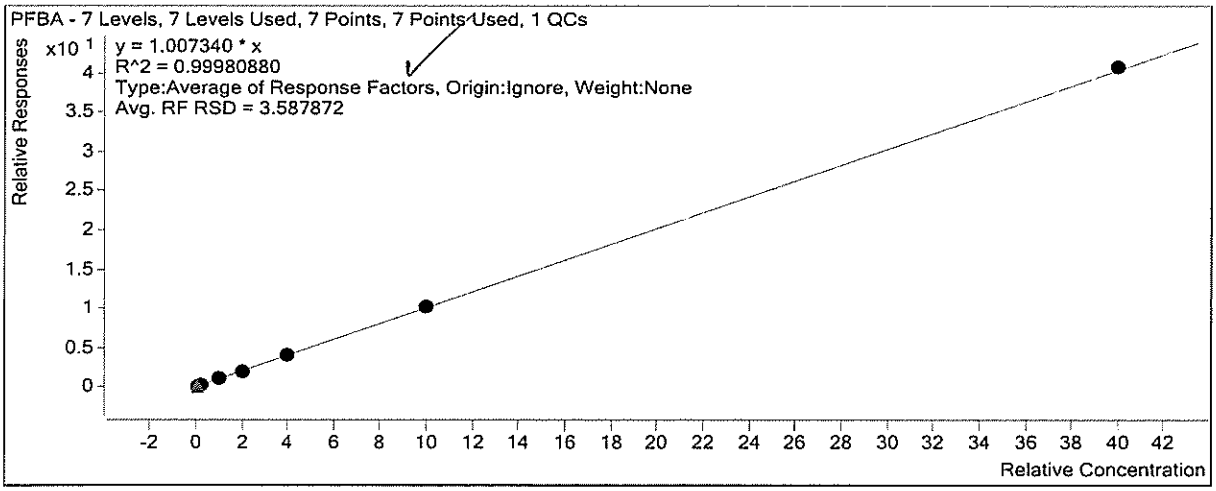
Calibration Info

Extracted ISTD *MPFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	74467	5.0000	14893.3590
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	67604	5.0000	13520.8271
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	105355	5.0000	21070.9993
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	87989	5.0000	17597.8474
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	106055	5.0000	21211.0212
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	101252	5.0000	20250.4331
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	83340	5.0000	16668.0316

Target Compound *PFBA*

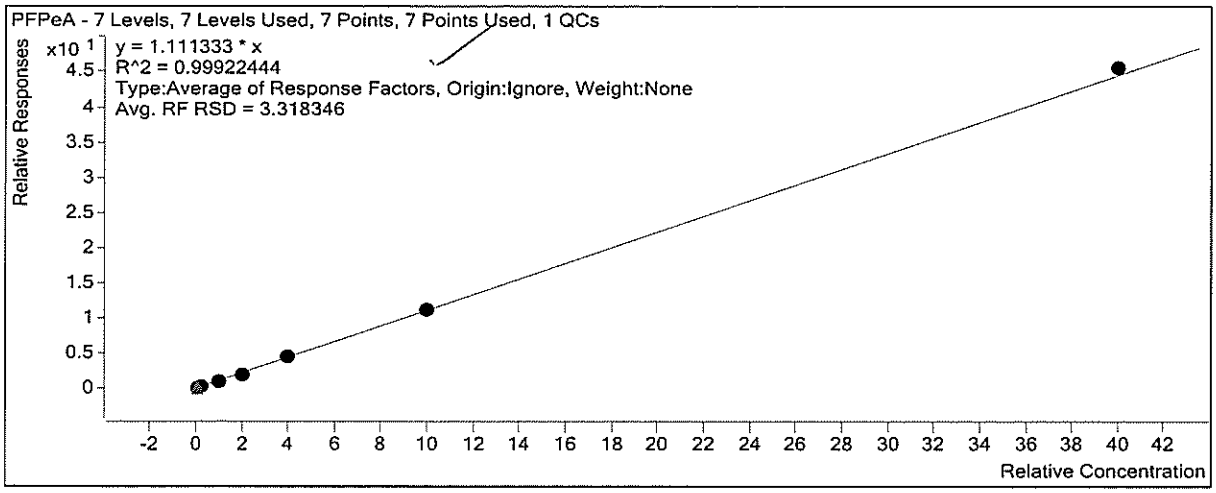
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	7246	0.5000	0.9730
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	17538	1.2500	1.0377
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	107452	5.0000	1.0199
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	165674	10.0000	0.9414
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	438968	20.0000	1.0348
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	1039428	50.0000	1.0266
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	3393591	200.0000	1.0180



Target Compound *PFMPA*

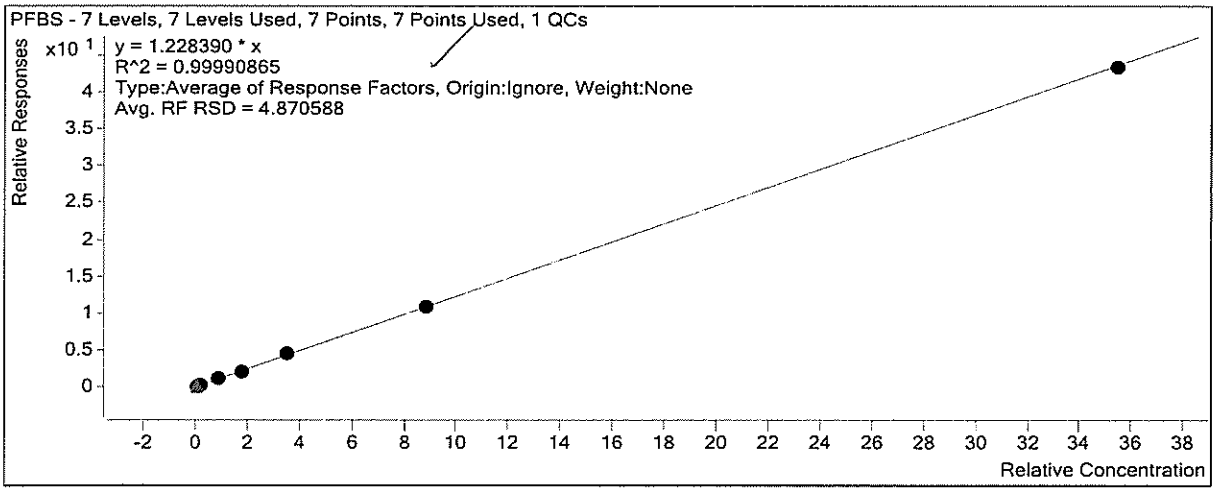
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	1320	0.5000	0.1514
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D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	18260	5.0000	0.1505
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	28264	10.0000	0.1379

Quantitative Analysis Calibration Report



Target Compound *PFBS*

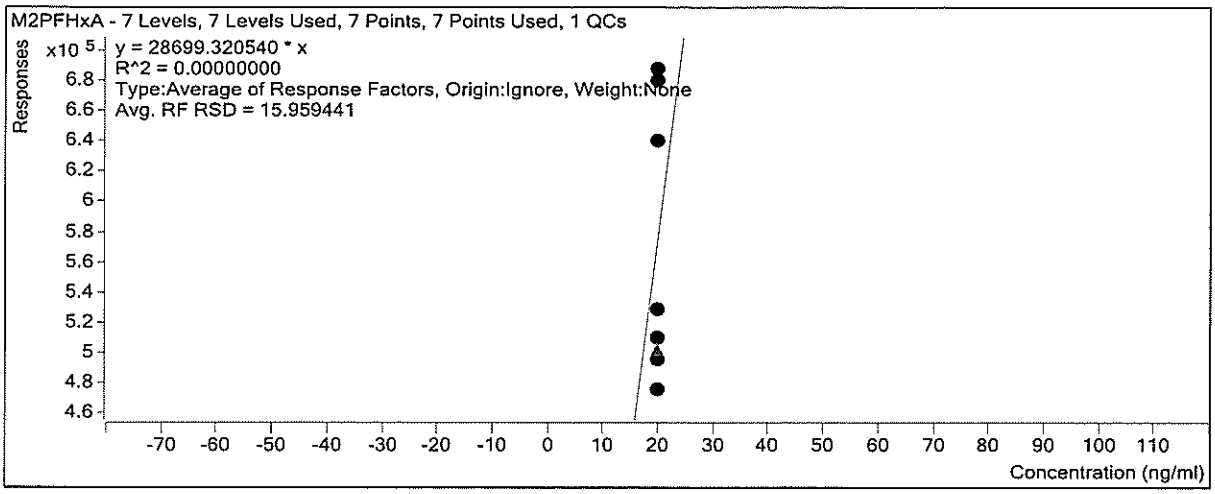
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
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D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	40190	4.4350	1.2395
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	61709	8.8700	1.1196
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	163504	17.7400	1.2644
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	369966	44.3500	1.2317
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Extracted ISTD *M3PFBS*

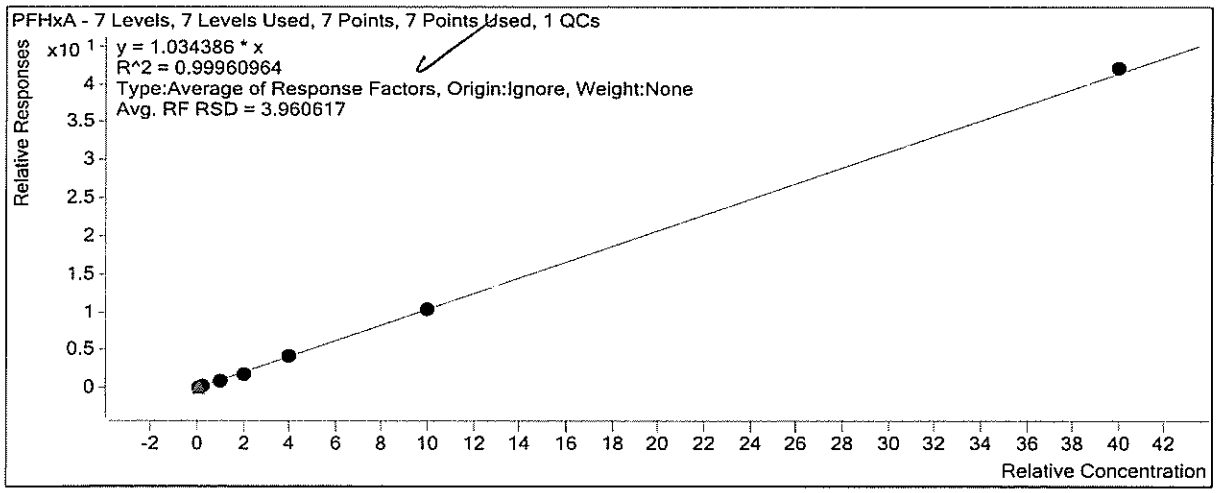
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
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D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	31068	5.0000	6213.6433
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	36448	5.0000	7289.5020

Quantitative Analysis Calibration Report



Target Compound *PFHxA*

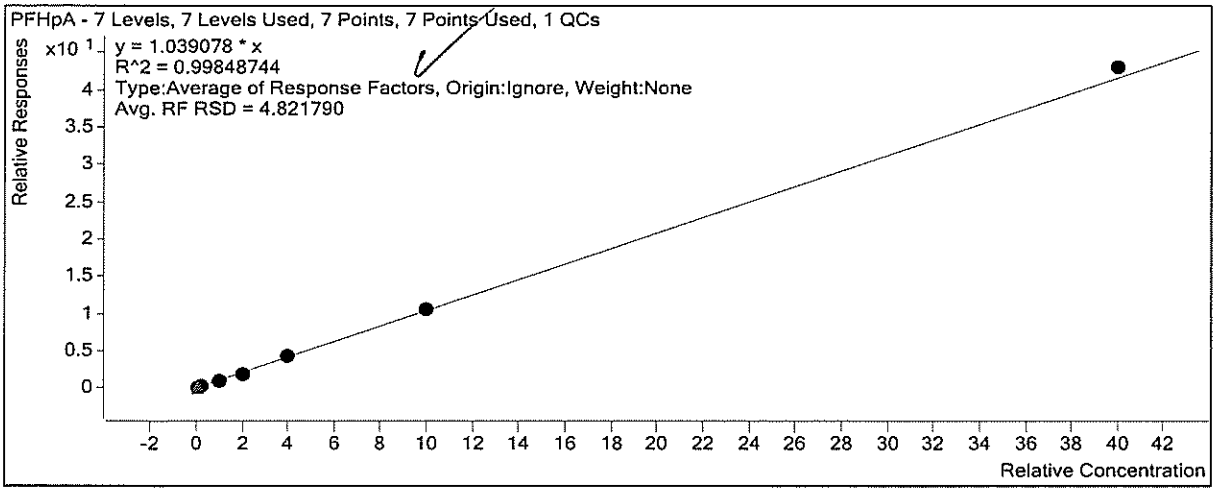
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	12463	0.5000	1.0225
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	28936	1.2500	1.0706
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D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	270248	10.0000	0.9478
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	715603	20.0000	1.0584
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	1670110	50.0000	1.0423
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	5397085	200.0000	1.0520



Target Compound *PFPeS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	3051	0.4705	1.1976
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	7290	1.1763	1.3017
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	44027	4.7050	1.2799
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	69064	9.4100	1.1812
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	179389	18.8200	1.3076

Quantitative Analysis Calibration Report



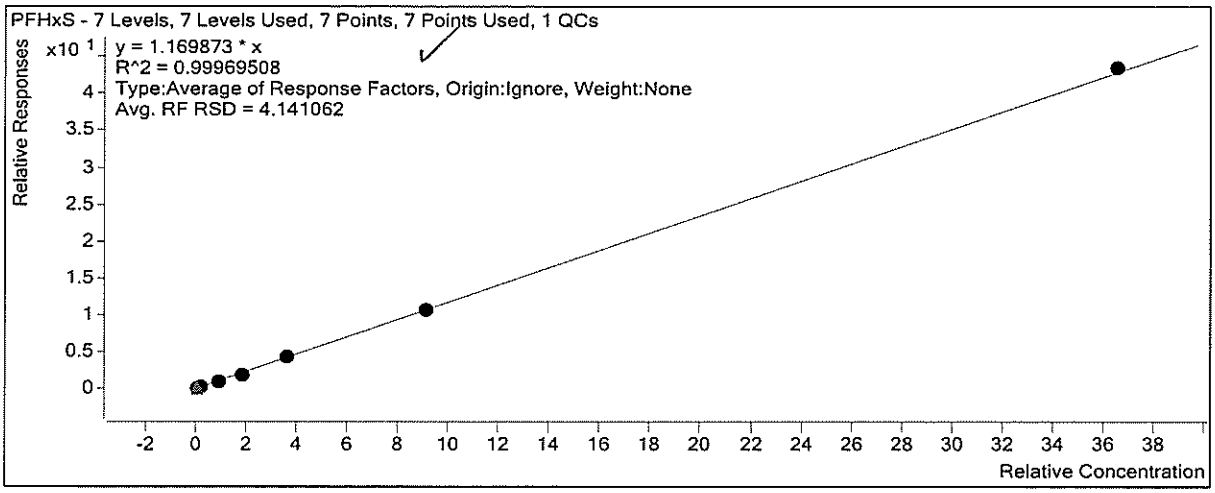
Extracted ISTD *M3PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	24195	5.0000	4838.9971
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	21339	5.0000	4267.7266
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	32913	5.0000	6582.6290
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	27390	5.0000	5477.9618
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	32476	5.0000	6495.2920
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	30470	5.0000	6094.0915
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	23459	5.0000	4691.7851

Target Compound *PFHxS*

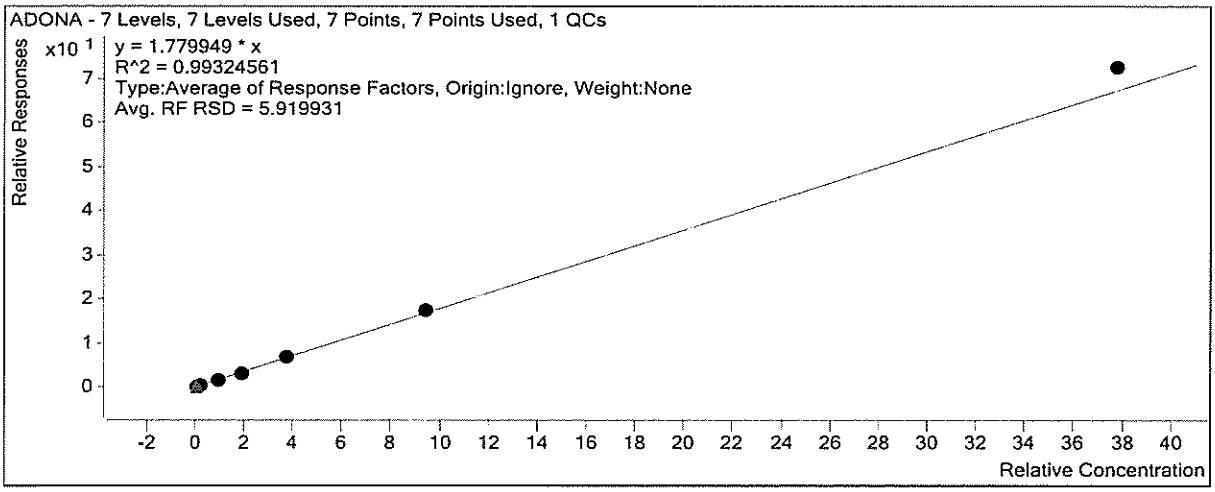
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	2619	0.4570	1.1844
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	5967	1.1425	1.2238
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	34919	4.5700	1.1608
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	53548	9.1400	1.0695
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	141546	18.2800	1.1921
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	326172	45.7000	1.1712
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	1018362	182.8000	1.1874

Quantitative Analysis Calibration Report



Target Compound *ADONA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	22050	0.4725	1.6415
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	53916	1.1813	1.8235
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	326664	4.7250	1.7469
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	506312	9.4500	1.6468
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	1348635	18.9000	1.8382
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	3200375	47.2500	1.8444
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	10546318	189.0000	1.9185



Extracted ISTD *M2 6:2 FTS*

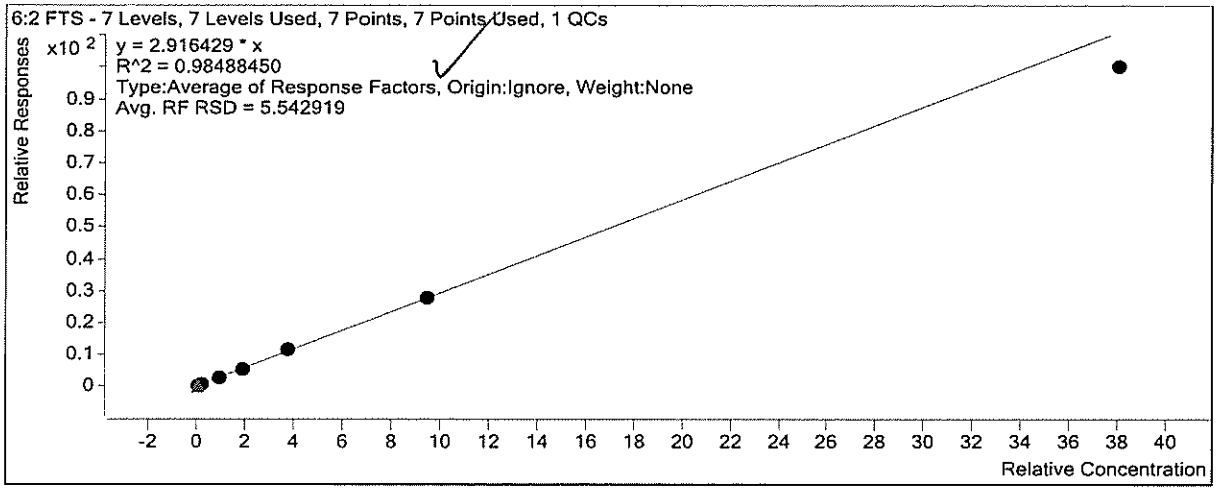
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	7757	5.0000	1551.4960
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	6554	5.0000	1310.8389
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	10371	5.0000	2074.2194
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	7722	5.0000	1544.3767
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	9837	5.0000	1967.3581

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	9385	5.0000	1876.9991
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	7023	5.0000	1404.6631

Target Compound *6:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	2292	0.4755	3.1064
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	4695	1.1888	3.0132
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	29192	4.7550	2.9598
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	40691	9.5100	2.7705
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	112084	19.0200	2.9954
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	262292	47.5500	2.9388
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	702920	190.2000	2.6310



Extracted ISTD *M8PFOA*

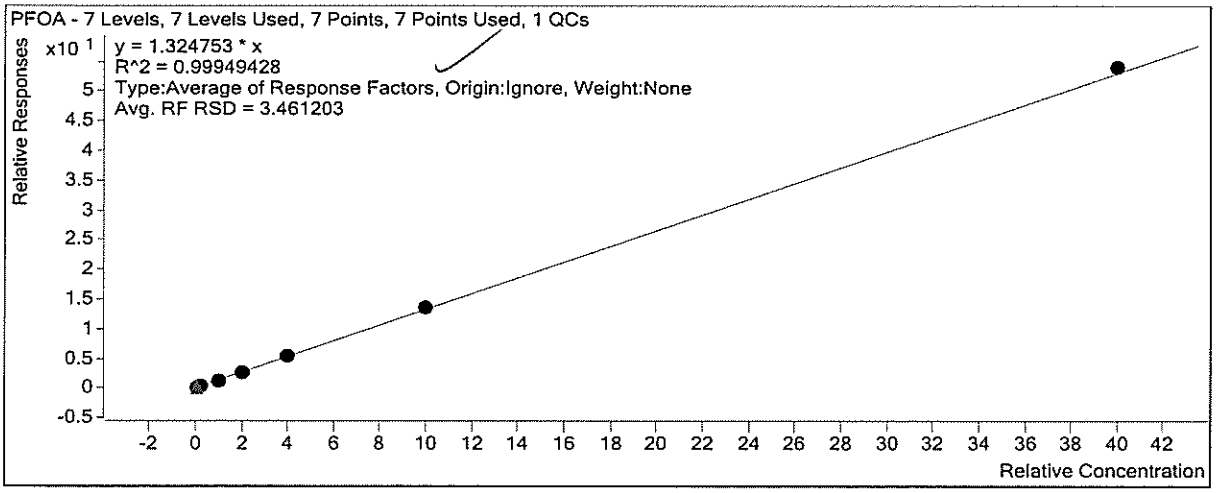
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	142147	5.0000	28429.4938
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	125147	5.0000	25029.4677
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	197881	5.0000	39576.1858
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	162678	5.0000	32535.5657
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	194097	5.0000	38819.4040
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	183620	5.0000	36724.0152
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	145431	5.0000	29086.1590

Instrument ISTD *MPFOA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	835743	25.0000	33429.7041
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	766600	25.0000	30664.0038
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	1066795	25.0000	42671.8181
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	888888	25.0000	35555.5367
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	1123046	25.0000	44921.8582
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	1007986	25.0000	40319.4395
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	771012	25.0000	30840.4794

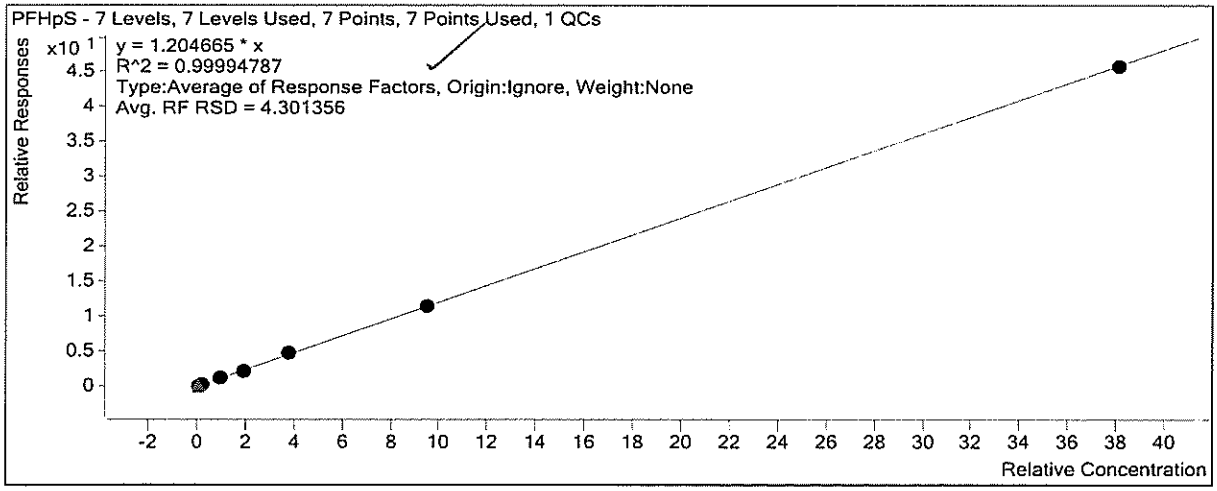
Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	2479964	50.0000	1.3506
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	7855297	200.0000	1.3503



Target Compound *PFHpS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	2702	0.4765	1.1717
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	6452	1.1913	1.2691
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	38075	4.7650	1.2139
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	58107	9.5300	1.1131
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	155137	19.0600	1.2531
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	351544	47.6500	1.2106
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	1074187	190.6000	1.2012



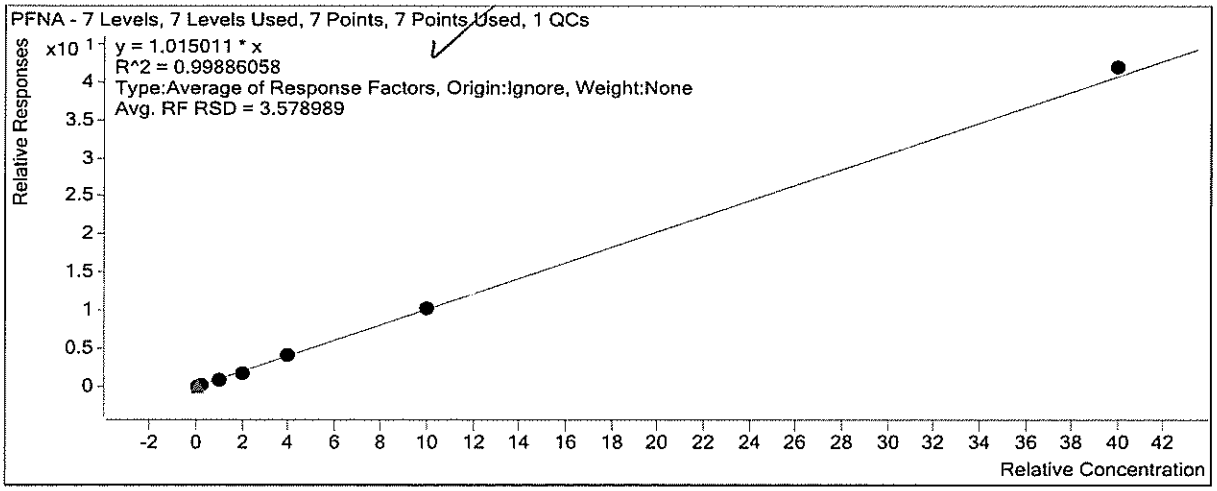
Extracted ISTD *M9PFNA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	157944	5.0000	31588.8154
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	141117	5.0000	28223.3648
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	218149	5.0000	43629.7416

D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	182265	5.0000	36453.0060
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	218954	5.0000	43790.8247
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	206018	5.0000	41203.6726
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	158642	5.0000	31728.3410

Target Compound *PFNA*

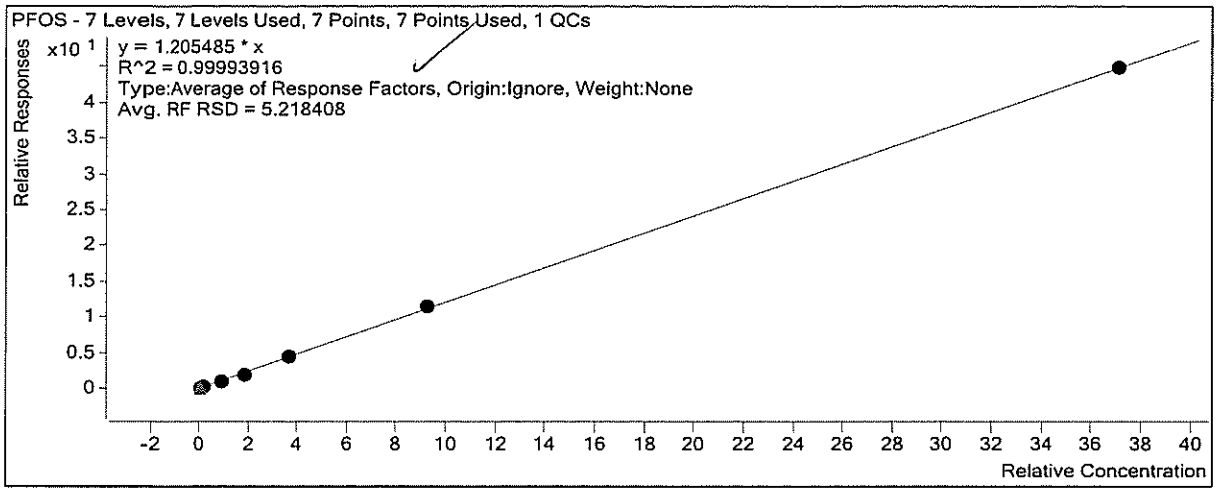
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	15421	0.5000	0.9764
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	36593	1.2500	1.0372
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	224238	5.0000	1.0279
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	346857	10.0000	0.9515
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	911743	20.0000	1.0410
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	2111967	50.0000	1.0251
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	6636811	200.0000	1.0459



Target Compound *PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	2560	0.4640	1.2133
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	5946	1.1600	1.2975
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	33863	4.6400	1.2024
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	51939	9.2800	1.0842
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	136012	18.5600	1.2066
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	315881	46.4000	1.2279
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	976594	185.6000	1.2065

Quantitative Analysis Calibration Report



Extracted ISTD *M8PFOS*

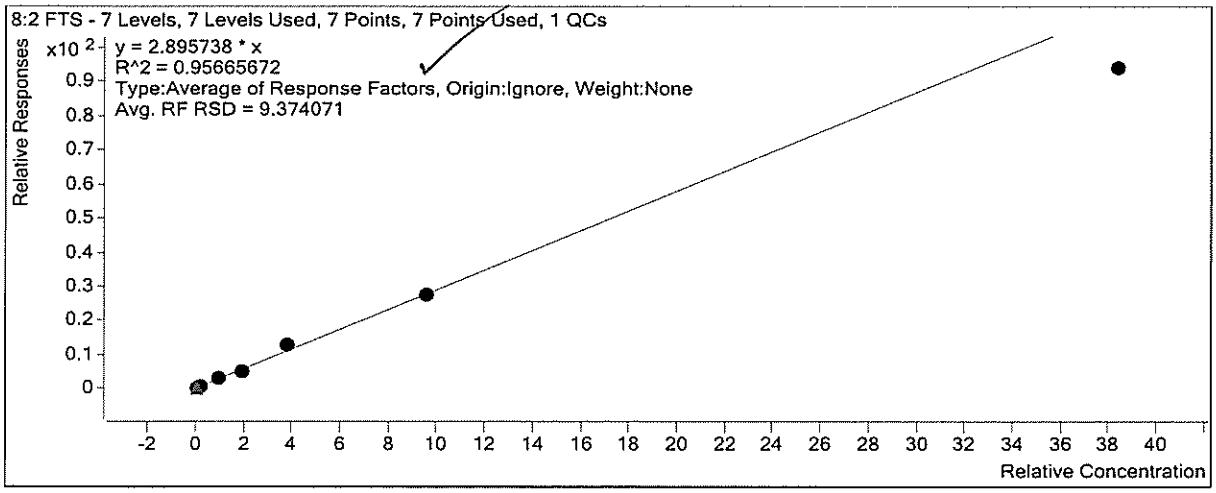
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	22737	5.0000	4547.3250
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	19753	5.0000	3950.5937
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	30348	5.0000	6069.6846
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	25810	5.0000	5162.0628
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	30368	5.0000	6073.5437
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	27722	5.0000	5544.3675
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	21806	5.0000	4361.2871

Instrument ISTD *M4PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	98437	20.0000	4921.8728
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	93492	20.0000	4674.6133
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	132951	20.0000	6647.5748
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	102184	20.0000	5109.2248
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	132385	20.0000	6619.2719
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	120736	20.0000	6036.8101
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	90620	20.0000	4531.0069

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	197471	48.0000	2.8726
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	544950	192.0000	2.4487



Extracted ISTD *M2 8:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	5893	5.0000	1178.6757
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	5185	5.0000	1036.9460
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	7615	5.0000	1523.0795
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	6613	5.0000	1322.6208
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	6920	5.0000	1384.0880
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	7161	5.0000	1432.1561
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	5795	5.0000	1159.0970

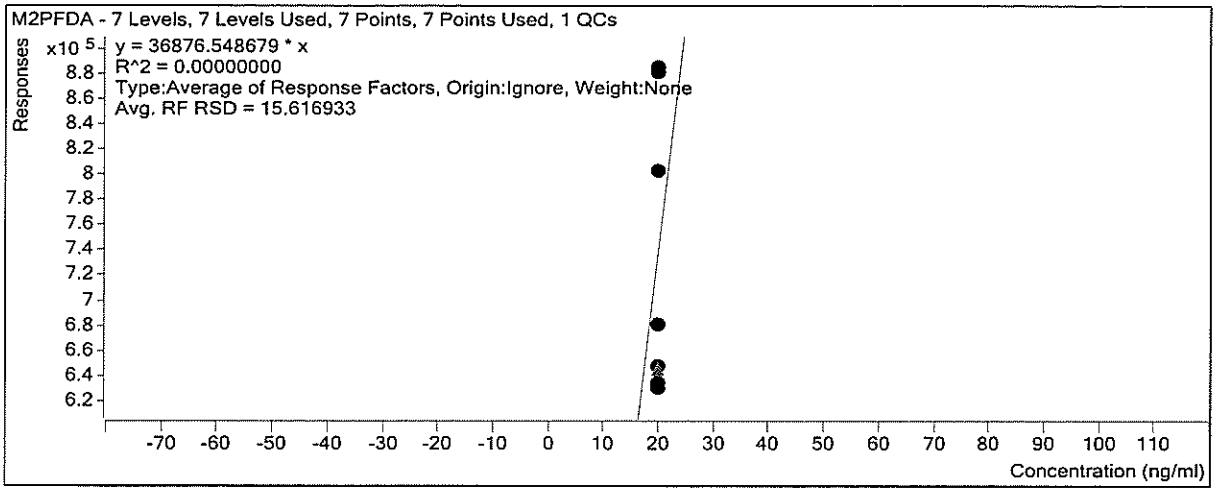
Extracted ISTD *M6PFDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	156003	5.0000	31200.5303
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	135932	5.0000	27186.4251
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	211209	5.0000	42241.7439
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	176689	5.0000	35337.8493
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	212018	5.0000	42403.5384
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	196518	5.0000	39303.5013
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	152027	5.0000	30405.3392

Instrument ISTD *M2PFDA*

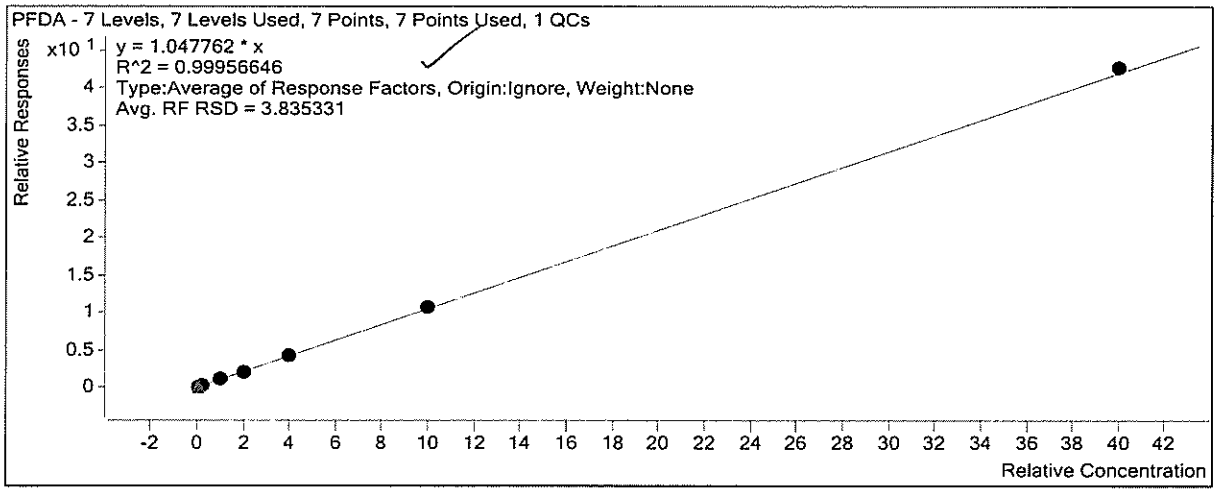
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	648031	20.0000	32401.5316
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	630782	20.0000	31539.1155
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	884596	20.0000	44229.8012
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	680729	20.0000	34036.4543
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	881085	20.0000	44054.2611
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	802486	20.0000	40124.3005
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	635008	20.0000	31750.3766

Quantitative Analysis Calibration Report



Target Compound *PFDA*

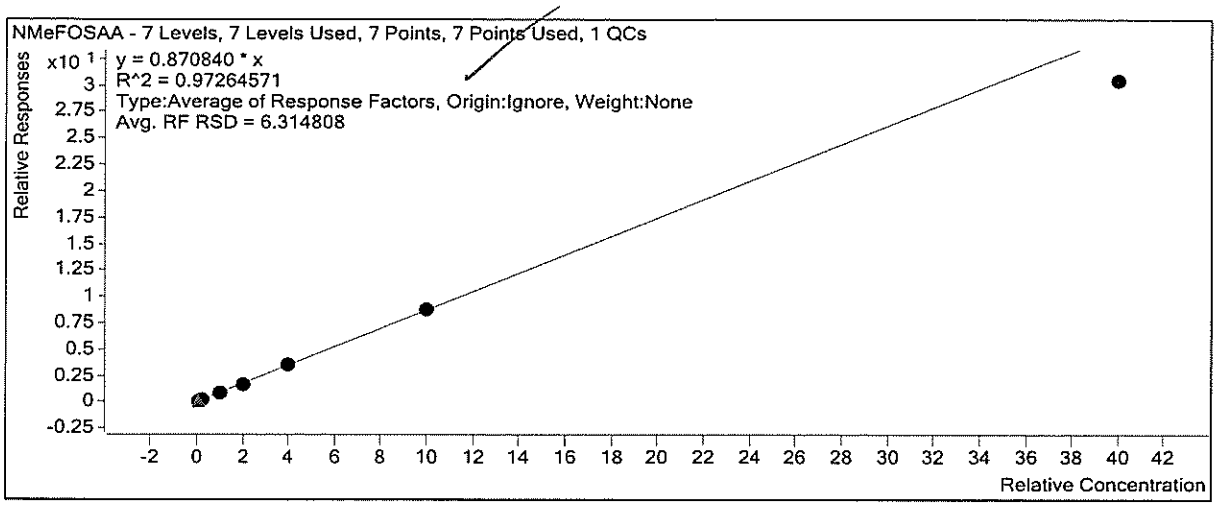
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	15704	0.5000	1.0067
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	36885	1.2500	1.0854
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	226583	5.0000	1.0728
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	344977	10.0000	0.9762
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	901633	20.0000	1.0632
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	2089990	50.0000	1.0635
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	6486122	200.0000	1.0666



Target Compound *PFNS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	2270	0.4810	1.0379
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	5207	1.2025	1.0961
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	31111	4.8100	1.0656
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	48337	9.6200	0.9734
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	127010	19.2400	1.0869

Quantitative Analysis Calibration Report



Extracted ISTD *M8FOSA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	47904	5.0000	9580.8449
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	41366	5.0000	8273.2652
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	66480	5.0000	13296.0994
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	54368	5.0000	10873.6890
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	64825	5.0000	12965.0762
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	62522	5.0000	12504.4543
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	50851	5.0000	10170.1354

Target Compound *FOSA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	4995	0.5000	1.0427
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	11745	1.2500	1.1357
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	71698	5.0000	1.0785
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	108683	10.0000	0.9995
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	288026	20.0000	1.1108
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	680367	50.0000	1.0882
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	2223849	200.0000	1.0933

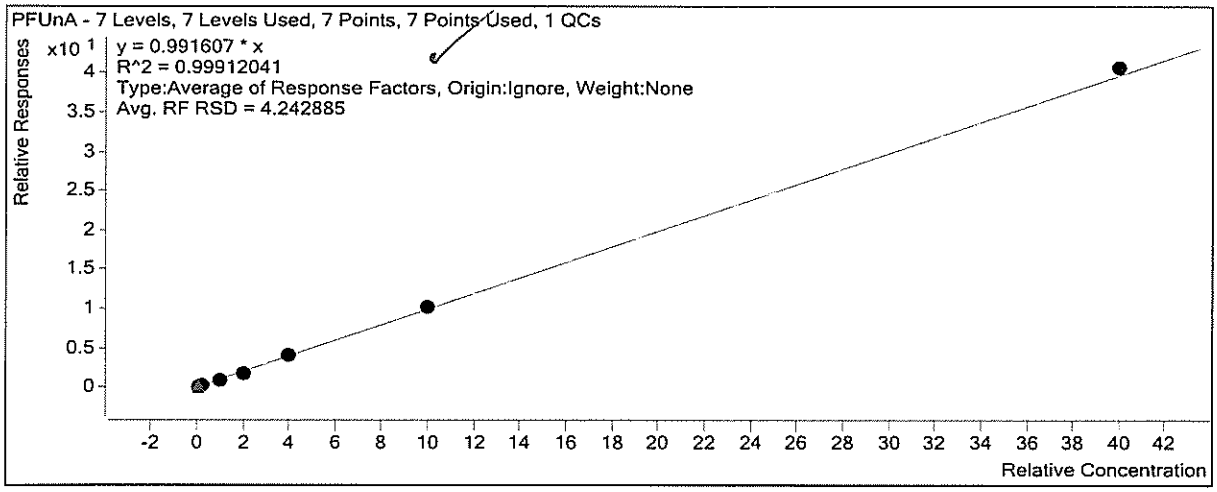
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	35888	5.0000	7177.5536
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	25541	5.0000	5108.2055

Extracted ISTD *M7PFUnA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	160492	5.0000	32098.3766
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	140061	5.0000	28012.1688
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	220180	5.0000	44035.9139
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	182447	5.0000	36489.3665
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	217883	5.0000	43576.6969
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	205222	5.0000	41044.4253
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	157999	5.0000	31599.7857

Target Compound *PFUnA*

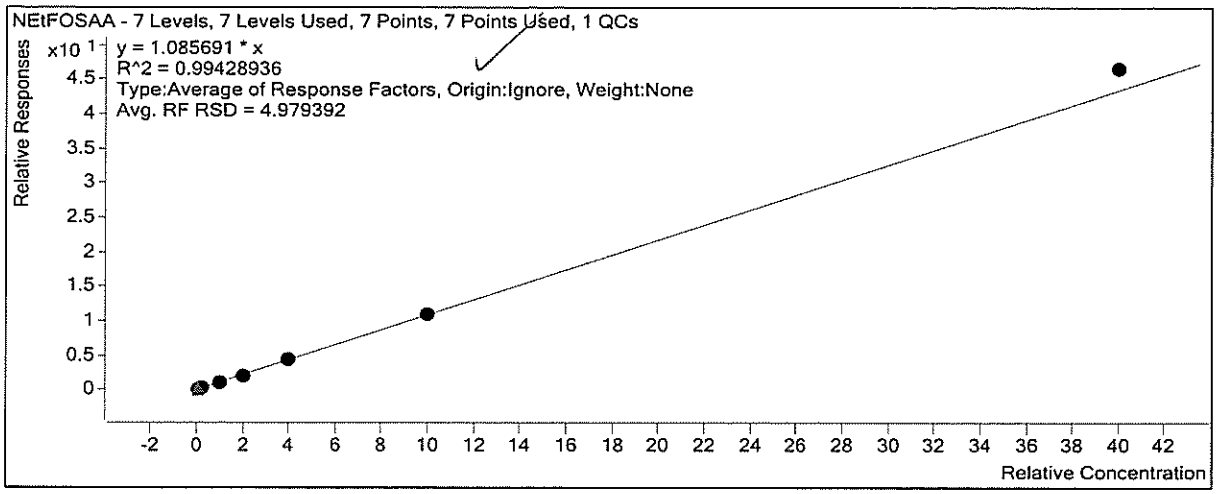
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	15122	0.5000	0.9422
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	35765	1.2500	1.0214
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	221107	5.0000	1.0042
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	335865	10.0000	0.9204
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	890576	20.0000	1.0218
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	2080559	50.0000	1.0138
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	6429331	200.0000	1.0173



Target Compound *NEtFOSAA*

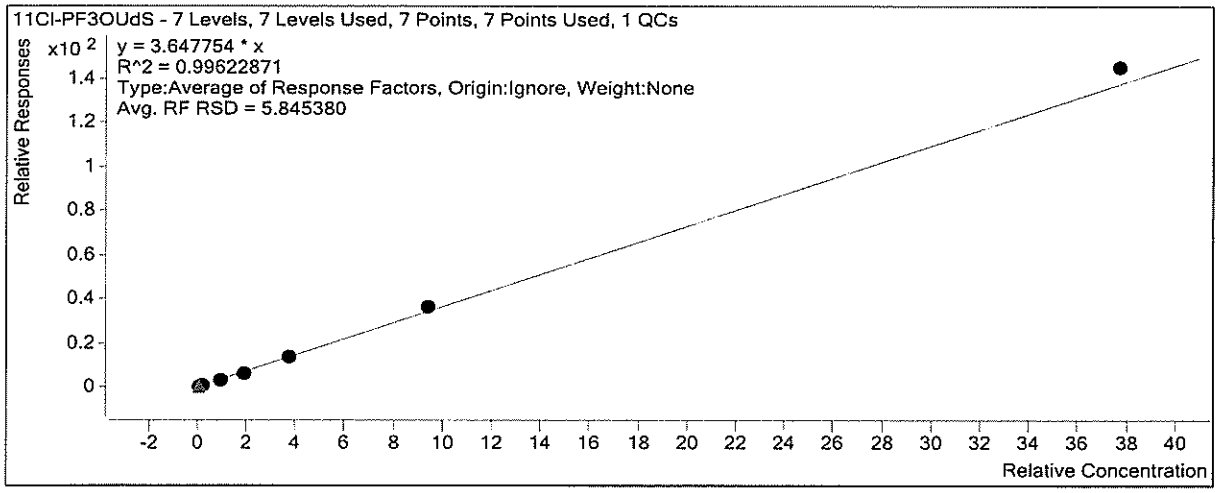
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	2993	0.5000	1.0333
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	7370	1.2500	1.1094
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	43296	5.0000	1.0741
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	65871	10.0000	1.0020
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	174653	20.0000	1.1104
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	397420	50.0000	1.1074
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	1188409	200.0000	1.1632

Quantitative Analysis Calibration Report



Target Compound *11Cl-PF3OUdS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	7216	0.4715	3.3656
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	16810	1.1788	3.6098
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	107188	4.7150	3.7454
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	163596	9.4300	3.3608
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	426686	18.8600	3.7250
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	1014134	47.1500	3.8794
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	3165420	188.6000	3.8484



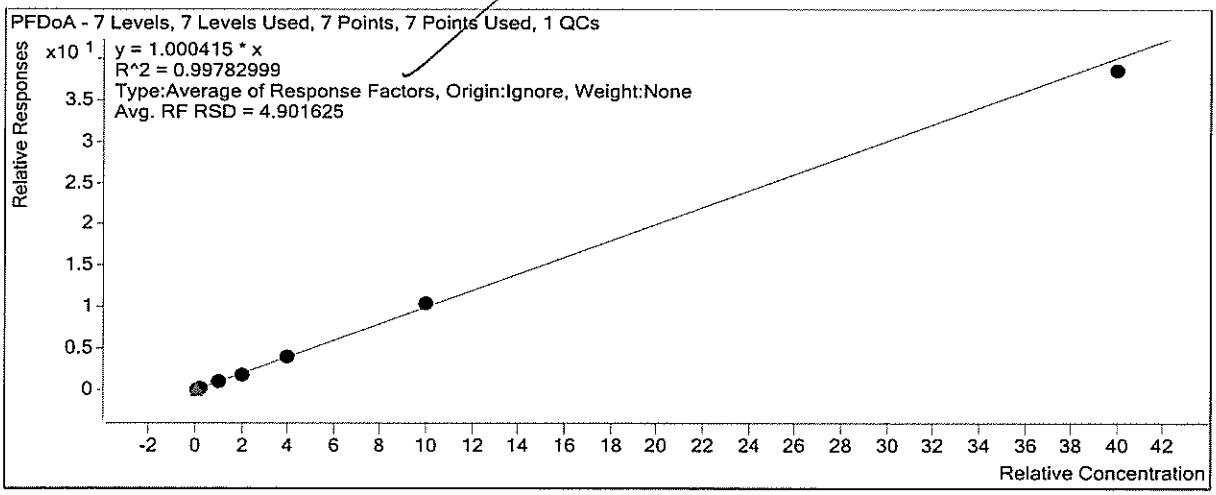
Extracted ISTD *MPFDoA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	182570	5.0000	36514.0572
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	160894	5.0000	32178.8496
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	256244	5.0000	51248.7798
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	215068	5.0000	43013.5598
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	253495	5.0000	50699.0056

D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	237312	5.0000	47462.4923
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	199555	5.0000	39910.9457

Target Compound *PFDoA*

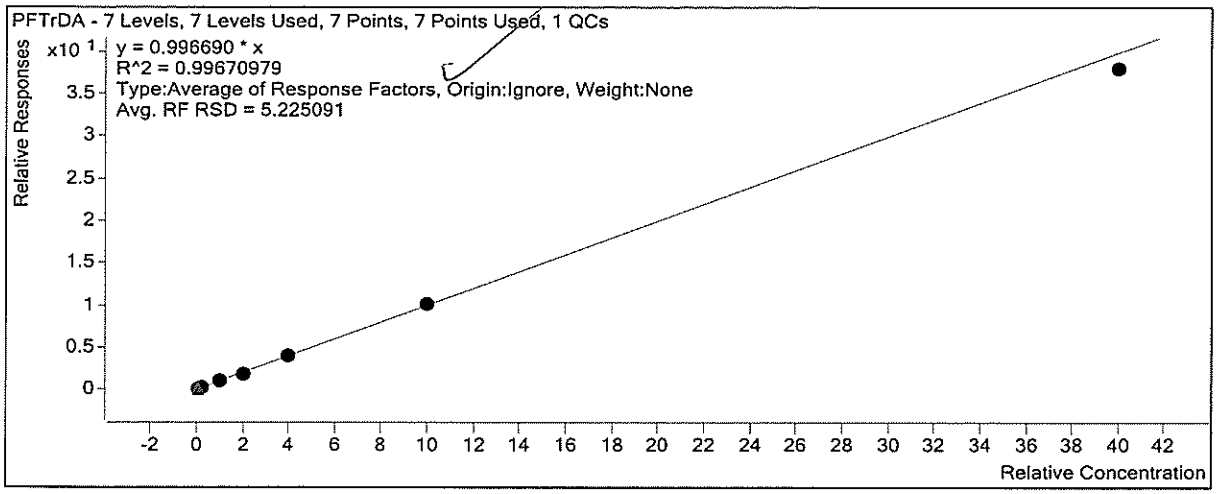
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	18277	0.5000	1.0011
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	42145	1.2500	1.0478
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	257243	5.0000	1.0039
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	392127	10.0000	0.9116
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	1052987	20.0000	1.0385
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	2462618	50.0000	1.0377
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	7681392	200.0000	0.9623



Target Compound *10:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	1867	0.4820	3.2864
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	4031	1.2050	3.2258
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	24379	4.8200	3.3208
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	37505	9.6400	2.9416
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	100456	19.2800	3.7645
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	225335	48.2000	3.2643
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☐	1021837	192.8000	4.5725

Quantitative Analysis Calibration Report



Extracted ISTD *d7-NMeFOSE*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	6457	5.0000	1291.3969
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	5716	5.0000	1143.1972
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	8972	5.0000	1794.3824
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	7524	5.0000	1504.7953
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	8884	5.0000	1776.8605
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	9068	5.0000	1813.5294
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	7221	5.0000	1444.2735

Target Compound *NMeFOSE*

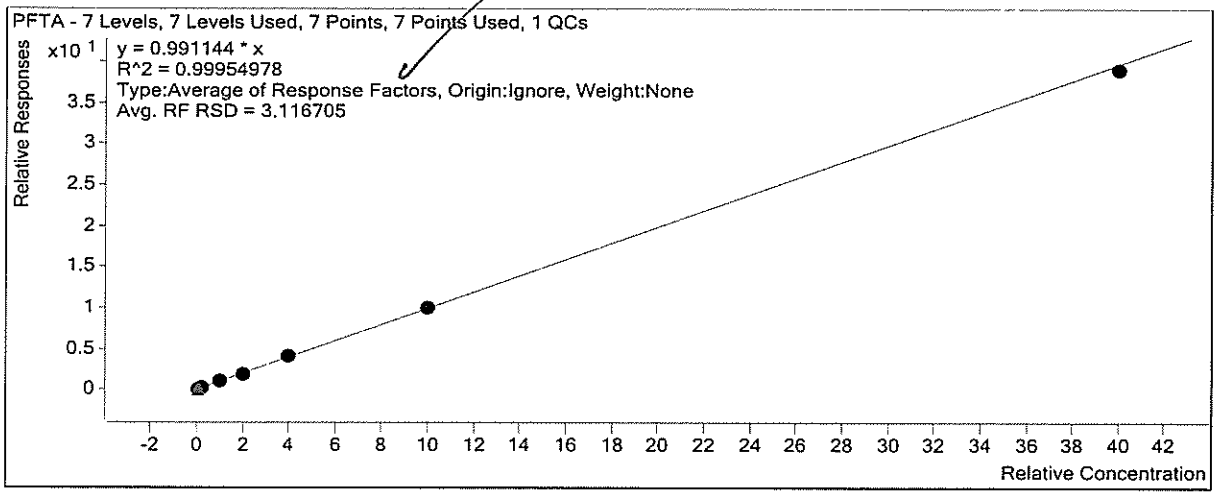
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	873	0.5000	1.3522
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	2037	1.2500	1.4257
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	11398	5.0000	1.2704
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	17662	10.0000	1.1737
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	47551	20.0000	1.3381
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	113124	50.0000	1.2476
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	344010	200.0000	1.1909

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	252206	5.0000	50441.1125
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	211103	5.0000	42220.5440

Target Compound *PFTA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	18883	0.5000	0.9753
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	42850	1.2500	1.0207
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	263419	5.0000	0.9882
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	406151	10.0000	0.9462
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	1084134	20.0000	1.0386
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	2510234	50.0000	0.9953
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	8221902	200.0000	0.9737



Extracted ISTD *M2PFHxDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	14759	5.0000	2951.7962
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	11821	5.0000	2364.2513
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	19814	5.0000	3962.7145
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	17593	5.0000	3518.6942
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	19996	5.0000	3999.2255
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	19967	5.0000	3993.4477
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☑	15132	5.0000	3026.3343

Target Compound *PFHxDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210727BCAL\2210727B_1.d	Calibration	1	☑	22732	0.5000	15.4024
D:\MassHunter\Data\2210727BCAL\2210727B_2.d	Calibration	2	☑	44973	1.2500	15.2178
D:\MassHunter\Data\2210727BCAL\2210727B_3.d	Calibration	3	☑	275877	5.0000	13.9236
D:\MassHunter\Data\2210727BCAL\2210727B_4.d	Calibration	4	☑	462555	10.0000	13.1456
D:\MassHunter\Data\2210727BCAL\2210727B_5.d	Calibration	5	☑	1113972	20.0000	13.9273
D:\MassHunter\Data\2210727BCAL\2210727B_6.d	Calibration	6	☑	2670147	50.0000	13.3726
D:\MassHunter\Data\2210727BCAL\2210727B_7.d	Calibration	7	☐	18231	200.0000	0.0301

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/28/2021 16:08	Lab File ID:	2210728A_22.d
Analytical Method:		Analytical Batch:	717333

ANALYTE	UNITS	TRUE	FOUND	%REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	8700	92	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9010	94	70	130	
NEtFOSAA	ng/L	10000	9110	91	70	130	
NMeFOSAA	ng/L	10000	9300	93	70	130	
Perfluorobutanoic acid	ng/L	10000	9250	93	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8170	92	70	130	
Perfluorodecanoic acid	ng/L	10000	9240	92	70	130	
Perfluorododecanoic acid	ng/L	10000	9370	94	70	130	
Perfluoroheptanoic acid	ng/L	10000	9130	91	70	130	
Perfluorohexanoic acid	ng/L	10000	9190	92	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8320	91	70	130	
Perfluorononanoic acid	ng/L	10000	9240	92	70	130	
Perfluorooctanoic acid	ng/L	10000	9150	91	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8470	91	70	130	
Perfluoropentanoic acid	ng/L	10000	9400	94	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9120	91	70	130	
Perfluorotridecanoic acid	ng/L	10000	9490	95	70	130	
Perfluoroundecanoic acid	ng/L	10000	9350	94	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/28/2021 17:35	Lab File ID:	2210728A_28.d
Analytical Method:		Analytical Batch:	717333

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	8690	91	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	8950	93	70	130	
NEtFOSAA	ng/L	10000	9260	93	70	130	
NMeFOSAA	ng/L	10000	9580	96	70	130	
Perfluorobutanoic acid	ng/L	10000	9330	93	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8090	91	70	130	
Perfluorodecanoic acid	ng/L	10000	9250	93	70	130	
Perfluorododecanoic acid	ng/L	10000	8940	89	70	130	
Perfluoroheptanoic acid	ng/L	10000	9220	92	70	130	
Perfluorohexanoic acid	ng/L	10000	9050	90	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8440	92	70	130	
Perfluorononanoic acid	ng/L	10000	9170	92	70	130	
Perfluorooctanoic acid	ng/L	10000	9040	90	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8330	90	70	130	
Perfluoropentanoic acid	ng/L	10000	9380	94	70	130	
Perfluorotetradecanoic acid	ng/L	10000	8940	89	70	130	
Perfluorotridecanoic acid	ng/L	10000	9150	91	70	130	
Perfluoroundecanoic acid	ng/L	10000	9000	90	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/28/2021 20:16	Lab File ID:	2210728A_39.d
Analytical Method:		Analytical Batch:	717333

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	9140	96	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9350	97	70	130	
NEtFOSAA	ng/L	10000	8910	89	70	130	
NMeFOSAA	ng/L	10000	9740	97	70	130	
Perfluorobutanoic acid	ng/L	10000	9340	93	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8170	92	70	130	
Perfluorodecanoic acid	ng/L	10000	9190	92	70	130	
Perfluorododecanoic acid	ng/L	10000	9370	94	70	130	
Perfluoroheptanoic acid	ng/L	10000	9190	92	70	130	
Perfluorohexanoic acid	ng/L	10000	9240	92	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8390	92	70	130	
Perfluorononanoic acid	ng/L	10000	9330	93	70	130	
Perfluorooctanoic acid	ng/L	10000	9200	92	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8380	90	70	130	
Perfluoropentanoic acid	ng/L	10000	9440	94	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9230	92	70	130	
Perfluorotridecanoic acid	ng/L	10000	9350	94	70	130	
Perfluoroundecanoic acid	ng/L	10000	9060	91	70	130	

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/28/2021 23:55	Lab File ID:	2210728B_15.d
Analytical Method:		Analytical Batch:	717350

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	8820	93	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9030	94	70	130	
NEtFOSAA	ng/L	10000	9190	92	70	130	
NMeFOSAA	ng/L	10000	9450	94	70	130	
Perfluorobutanoic acid	ng/L	10000	9290	93	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8070	91	70	130	
Perfluorodecanoic acid	ng/L	10000	9290	93	70	130	
Perfluorododecanoic acid	ng/L	10000	9350	93	70	130	
Perfluoroheptanoic acid	ng/L	10000	9070	91	70	130	
Perfluorohexanoic acid	ng/L	10000	9090	91	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8250	90	70	130	
Perfluorononanoic acid	ng/L	10000	9270	93	70	130	
Perfluorooctanoic acid	ng/L	10000	9190	92	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8440	91	70	130	
Perfluoropentanoic acid	ng/L	10000	9380	94	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9220	92	70	130	
Perfluorotridecanoic acid	ng/L	10000	9420	94	70	130	
Perfluoroundecanoic acid	ng/L	10000	9350	94	70	130	

FORM 7E - ORG

8I

INTERNAL STANDARD AREA SUMMARY

Report No:	221072417	Standard ID:	1450 (ISC)
Analyst:	ADA	Instrument ID:	QQQ3
Analysis Date:	07/28/21 11:36	Lab File ID:	2210728A_4.d
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	717333

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		575349		448434		528345		91676	
CLIENT SAMPLE ID	*LAB SAMP ID*		*#*		*#*		*#*		*#*
MB2218045	2218045	560836		439697		524256		94182	
LCS2218046	2218046	558516		437862		522933		93379	
LCSD2218047	2218047	545201		434837		518533		91556	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

8I

INTERNAL STANDARD AREA SUMMARY

Report No:	221072417	Standard ID:	1450 (ISC)
Analyst:	ADA	Instrument ID:	QQQ3
Analysis Date:	07/28/21 21:00	Lab File ID:	2210728B_3.d
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	717350

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		629773		507594		599744		100873	
CLIENT SAMPLE ID	*LAB SAMP ID*		#		#		#		#
CS-MW004S-GW	22107241706	598273		479747		566738		98089	
CS-MW004S-GW-MS	22107241707	603776		481001		576085		98702	
CS-MW004S-GW-MSD	22107241708	583157		472760		556638		95731	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

LC-QQQ Instrument Run Log

Agilent

Instrument:	QQQ 3	**LIMS Batch (HBN):**	717435
Instrument Batch:	2210729A.batch.bin	**20mM NH4OAc (ID/Exp):**	019-6-57 7/31/21
Current ICAL Batch:	2210727BCAL	**Methanol (ID/Exp):**	2130465 6/10/25
ICAL Std (ID/Exp):	016-100-9 11/17/21	**EIS Mix (ID/Exp):**	019-2-2 1/19/22
ICV Std (ID/Exp):	019-6-1 10/18/21	**IIS Mix (ID/Exp):**	019-1-4 1/18/22

Acquisition time	Data File	Name	Type	Dilution	Comment
07/27/21 14:09:56	2210727B_1.d	1201	Cal	1	ADA,QQQ3;ICAL
07/27/21 14:24:41	2210727B_2.d	1202	Cal	1	ADA,QQQ3;ICAL
07/27/21 14:39:17	2210727B_3.d	1203	Cal	1	ADA,QQQ3;ICAL
07/27/21 14:53:53	2210727B_4.d	1204	Cal	1	ADA,QQQ3;ICAL
07/27/21 15:08:30	2210727B_5.d	1205	Cal	1	ADA,QQQ3;ICAL
07/27/21 15:23:06	2210727B_6.d	1206	Cal	1	ADA,QQQ3;ICAL
07/27/21 15:37:43	2210727B_7.d	1207	Cal	1	ADA,QQQ3;ICAL
07/27/21 16:06:01	2210727B_8.d	1500	Blank	1	ADA,QQQ3;ICAL
07/27/21 16:20:46	2210727B_9.d	1600	Sample	1	ADA,QQQ3;ICAL
07/27/21 16:35:23	2210727B_10.d	1450	QC	1	ADA,QQQ3;ICAL
07/29/21 09:49:05	2210729A_1.d	1400 RT TEST	QC	1	ADA,QQQ3;RT TEST
07/29/21 10:03:51	2210729A_2.d	1500	Blank	1	ADA,QQQ3;Calibration Blank
07/29/21 10:18:29	2210729A_3.d	1450	QC	1	ADA,QQQ3;CCV
07/29/21 10:41:38	2210729A_4.d	2219153	Sample	1	ADA,QQQ3;717224
07/29/21 10:56:24	2210729A_5.d	2219154	QC	1	ADA,QQQ3;717224
07/29/21 11:11:01	2210729A_6.d	2219155	QC	1	ADA,QQQ3;717224
07/29/21 11:25:41	2210729A_7.d	22107208401	Sample	1	ADA,QQQ3;717224
07/29/21 11:40:18	2210729A_8.d	22107208501	Sample	1	ADA,QQQ3;717224
07/29/21 11:54:55	2210729A_9.d	1400	QC	1	ADA,QQQ3;CCV

LC-QQQ Instrument Run Log

Agilent

Instrument: QQQ 3
Instrument Batch: 2210729B.batch.bin
Current ICAL Batch: 2210727BCAL
ICAL Std (ID/Exp): 016-100-9 11/17/21
ICV Std (ID/Exp): 019-6-1 10/18/21

LIMS Batch (HBN): 717435/717492/717493
20mM NH4OAc (ID/Exp): 019-6-57 7/31/21
Methanol (ID/Exp): 2130465 6/10/25
EIS Mix (ID/Exp): 019-2-2 1/19/22
IIS Mix (ID/Exp): 019-1-4 1/18/22

Acquisition time	Data File	Name	Type	Dilution	Comment
07/27/21 14:09:56	2210727B_1.d	1201	Cal	1	ADA,QQQ3;ICAL
07/27/21 14:24:41	2210727B_2.d	1202	Cal	1	ADA,QQQ3;ICAL
07/27/21 14:39:17	2210727B_3.d	1203	Cal	1	ADA,QQQ3;ICAL
07/27/21 14:53:53	2210727B_4.d	1204	Cal	1	ADA,QQQ3;ICAL
07/27/21 15:08:30	2210727B_5.d	1205	Cal	1	ADA,QQQ3;ICAL
07/27/21 15:23:06	2210727B_6.d	1206	Cal	1	ADA,QQQ3;ICAL
07/27/21 15:37:43	2210727B_7.d	1207	Cal	1	ADA,QQQ3;ICAL
07/27/21 16:06:01	2210727B_8.d	1500	Blank	1	ADA,QQQ3;ICAL
07/27/21 16:20:46	2210727B_9.d	1600	Sample	1	ADA,QQQ3;ICAL
07/27/21 16:35:23	2210727B_10.d	1450	QC	1	ADA,QQQ3;ICAL
07/29/21 14:04:39	2210729B_1.d	1500	Blank	1	ADA,QQQ3;BLANK;RR EIS fail
07/29/21 14:19:24	2210729B_2.d	1450	QC	1	ADA,QQQ3;CCV
07/29/21 14:38:29	2210729B_3.d	1500	Blank	1	ADA,QQQ3;BLANK
07/29/21 14:58:18	2210729B_4.d	22107160701	Sample	1	ADA,QQQ3;716533
07/29/21 15:13:04	2210729B_5.d	22107241709	Sample	1	ADA,QQQ3;717224
07/29/21 15:27:41	2210729B_6.d	22107243706	Sample	1	ADA,QQQ3;717224
07/29/21 15:42:17	2210729B_7.d	22107243707	Sample	1	ADA,QQQ3;717224
07/29/21 15:56:56	2210729B_8.d	22107243719	Sample	1	ADA,QQQ3;717224
07/29/21 16:11:33	2210729B_9.d	22107243809	Sample	1	ADA,QQQ3;717224
07/29/21 16:26:09	2210729B_10.d	22107243828	Sample	1	ADA,QQQ3;717224
07/29/21 16:40:46	2210729B_11.d	22107169425	Sample	1	ADA,QQQ3;717224
07/29/21 16:55:23	2210729B_12.d	22107155514	Sample	1	ADA,QQQ3;716773
07/29/21 17:10:00	2210729B_13.d	22106236301	Sample	50	ADA,QQQ3;715284
07/29/21 17:24:36	2210729B_14.d	1400	QC	1	ADA,QQQ3;CCV
07/29/21 17:39:30	2210729B_15.d	MEOH SHOT	Blank	1	ADA,QQQ3;MEOH SHOT
07/29/21 17:54:08	2210729B_16.d	1500	Blank	1	ADA,QQQ3;BLANK;DW
07/29/21 18:09:02	2210729B_17.d	1450	QC	1	ADA,QQQ3;CCV;DW
07/29/21 18:23:41	2210729B_18.d	2214040	Sample	1	ADA,QQQ3;716383;DW
07/29/21 18:38:18	2210729B_19.d	1400	QC	1	ADA,QQQ3;CCV;DW
07/29/21 18:52:55	2210729B_20.d	MEOH SHOT	Blank	1	ADA,QQQ3;MEOH SHOT
07/29/21 19:07:33	2210729B_21.d	1400	QC	1	ADA,QQQ3;CCV
07/29/21 19:22:26	2210729B_22.d	22107074101	Sample	10	ADA,QQQ3;716613
07/29/21 19:37:19	2210729B_23.d	22107074103	Sample	50	ADA,QQQ3;716613
07/29/21 19:51:55	2210729B_24.d	22107241607	Sample	5	ADA,QQQ3;717017
07/29/21 20:09:30	2210729B_25.d	22107241609	Sample	5	ADA,QQQ3;717017
07/29/21 20:24:15	2210729B_26.d	22107241610	Sample	5	ADA,QQQ3;717017
07/29/21 20:38:52	2210729B_27.d	22107155517	Sample	1	ADA,QQQ3;716538,DAI 100X
07/29/21 20:53:32	2210729B_28.d	2221101	Sample	1	ADA,QQQ3;716538,DAI 100X
07/29/21 21:08:09	2210729B_29.d	22106234315	Sample	50	ADA,QQQ3;716540
07/29/21 21:22:46	2210729B_30.d	22106234306	Sample	50	ADA,QQQ3;716540
07/29/21 21:37:23	2210729B_31.d	22106234315	Sample	5	ADA,QQQ3;716540
07/29/21 21:51:59	2210729B_32.d	MEOH SHOT	Blank	1	ADA,QQQ3;MEOH SHOT
07/29/21 22:06:37	2210729B_33.d	1400	QC	1	ADA,QQQ3;CCV
07/29/21 22:21:30	2210729B_34.d	22106234306	Sample	5	ADA,QQQ3;716540
07/29/21 22:36:24	2210729B_35.d	MEOH SHOT	Blank	1	ADA,QQQ3;MEOH SHOT
07/29/21 22:51:03	2210729B_36.d	22107121401	Sample	1	ADA,QQQ3;716082
07/29/21 23:05:39	2210729B_37.d	1400	QC	1	ADA,QQQ3;CCV

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/29/2021 10:18	Lab File ID:	2210729A_3.d
Analytical Method:		Analytical Batch:	717435

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	3.81	3.82	100	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	3.84	3.94	102	70	130	
NEtFOSAA	ng/L	4.00	3.78	95	70	130	
NMeFOSAA	ng/L	4.00	4.23	106	70	130	
Perfluorobutanoic acid	ng/L	4.00	3.86	96	70	130	
Perfluorobutanesulfonic acid	ng/L	3.55	3.59	101	70	130	
Perfluorodecanoic acid	ng/L	4.00	3.77	94	70	130	
Perfluorododecanoic acid	ng/L	4.00	3.93	98	70	130	
Perfluoroheptanoic acid	ng/L	4.00	3.78	95	70	130	
Perfluorohexanoic acid	ng/L	4.00	3.95	99	70	130	
Perfluorohexanesulfonic acid	ng/L	3.66	3.73	102	70	130	
Perfluorononanoic acid	ng/L	4.00	3.79	95	70	130	
Perfluorooctanoic acid	ng/L	4.00	3.78	95	70	130	
Perfluorooctanesulfonic acid	ng/L	3.71	3.82	103	70	130	
Perfluoropentanoic acid	ng/L	4.00	3.89	97	70	130	
Perfluorotetradecanoic acid	ng/L	4.00	3.87	97	70	130	
Perfluorotridecanoic acid	ng/L	4.00	3.88	97	70	130	
Perfluoroundecanoic acid	ng/L	4.00	3.93	98	70	130	

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/29/2021 14:19	Lab File ID:	2210729B_2.d
Analytical Method:		Analytical Batch:	717492

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	3.81	3.78	99	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	3.84	4.18	109	70	130	
NEtFOSAA	ng/L	4.00	4.13	103	70	130	
NMeFOSAA	ng/L	4.00	4.03	101	70	130	
Perfluorobutanoic acid	ng/L	4.00	3.82	96	70	130	
Perfluorobutanesulfonic acid	ng/L	3.55	3.25	92	70	130	
Perfluorodecanoic acid	ng/L	4.00	4.35	109	70	130	
Perfluorododecanoic acid	ng/L	4.00	4.18	104	70	130	
Perfluoroheptanoic acid	ng/L	4.00	3.86	96	70	130	
Perfluorohexanoic acid	ng/L	4.00	3.85	96	70	130	
Perfluorohexanesulfonic acid	ng/L	3.66	3.82	105	70	130	
Perfluorononanoic acid	ng/L	4.00	3.97	99	70	130	
Perfluorooctanoic acid	ng/L	4.00	3.70	93	70	130	
Perfluorooctanesulfonic acid	ng/L	3.71	3.67	99	70	130	
Perfluoropentanoic acid	ng/L	4.00	3.98	99	70	130	
Perfluorotetradecanoic acid	ng/L	4.00	3.96	99	70	130	
Perfluorotridecanoic acid	ng/L	4.00	3.91	98	70	130	
Perfluoroundecanoic acid	ng/L	4.00	3.63	91	70	130	

4I

ORGANICS INSTRUMENT BLANK

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/29/2021 10:03	Lab File ID:	2210729A_2.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	717435

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
6:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.50	3.00	4.00	
8:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.06	3.00	4.00	
NEtFOSAA	ng/L	4.00	U	1.58	4.00	8.00	
NMeFOSAA	ng/L	4.00	U	0.90	4.00	8.00	
Perfluorobutanesulfonic acid	ng/L	2.00	U	0.62	2.00	4.00	
Perfluorobutanoic acid	ng/L	3.50	U	1.52	3.50	4.00	
Perfluorodecanoic acid	ng/L	3.00	U	1.44	3.00	4.00	
Perfluorododecanoic acid	ng/L	3.00	U	1.30	3.00	4.00	
Perfluoroheptanoic acid	ng/L	3.00	U	1.16	3.00	4.00	
Perfluorohexanesulfonic acid	ng/L	3.00	U	1.24	3.00	4.00	
Perfluorohexanoic acid	ng/L	2.00	U	0.94	2.00	4.00	
Perfluorononanoic acid	ng/L	2.00	U	0.98	2.00	4.00	
Perfluorooctanesulfonic acid	ng/L	2.00	U	0.76	2.00	4.00	
Perfluorooctanoic acid	ng/L	2.00	U	0.84	2.00	4.00	
Perfluoropentanoic acid	ng/L	2.00	U	0.88	2.00	4.00	
Perfluorotetradecanoic acid	ng/L	3.00	U	1.14	3.00	4.00	
Perfluorotridecanoic acid	ng/L	3.00	U	1.23	3.00	4.00	
Perfluoroundecanoic acid	ng/L	3.00	U	1.24	3.00	4.00	

* - Result greater than 1/2 LOQ

4I

ORGANICS INSTRUMENT BLANK

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/29/2021 14:38	Lab File ID:	2210729B_3.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	717492

ANALYTE	*UNITS*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*	*#*
6:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.50	3.00	4.00	
8:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.06	3.00	4.00	
NEtFOSAA	ng/L	4.00	U	1.58	4.00	8.00	
NMeFOSAA	ng/L	4.00	U	0.90	4.00	8.00	
Perfluorobutanesulfonic acid	ng/L	2.00	U	0.62	2.00	4.00	
Perfluorobutanoic acid	ng/L	3.50	U	1.52	3.50	4.00	
Perfluorodecanoic acid	ng/L	3.00	U	1.44	3.00	4.00	
Perfluorododecanoic acid	ng/L	3.00	U	1.30	3.00	4.00	
Perfluoroheptanoic acid	ng/L	3.00	U	1.16	3.00	4.00	
Perfluorohexanesulfonic acid	ng/L	3.00	U	1.24	3.00	4.00	
Perfluorohexanoic acid	ng/L	2.00	U	0.94	2.00	4.00	
Perfluorononanoic acid	ng/L	2.00	U	0.98	2.00	4.00	
Perfluorooctanesulfonic acid	ng/L	2.00	U	0.76	2.00	4.00	
Perfluorooctanoic acid	ng/L	2.00	U	0.84	2.00	4.00	
Perfluoropentanoic acid	ng/L	2.00	U	0.88	2.00	4.00	
Perfluorotetradecanoic acid	ng/L	3.00	U	1.14	3.00	4.00	
Perfluorotridecanoic acid	ng/L	3.00	U	1.23	3.00	4.00	
Perfluoroundecanoic acid	ng/L	3.00	U	1.24	3.00	4.00	

* - Result greater than 1/2 LOQ

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/29/2021 11:54	Lab File ID:	2210729A_9.d
Analytical Method:		Analytical Batch:	717435

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	9080	95	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9100	95	70	130	
NEtFOSAA	ng/L	10000	8970	90	70	130	
NMeFOSAA	ng/L	10000	9470	95	70	130	
Perfluorobutanoic acid	ng/L	10000	9300	93	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8180	92	70	130	
Perfluorodecanoic acid	ng/L	10000	9310	93	70	130	
Perfluorododecanoic acid	ng/L	10000	9440	94	70	130	
Perfluoroheptanoic acid	ng/L	10000	9160	92	70	130	
Perfluorohexanoic acid	ng/L	10000	9070	91	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8410	92	70	130	
Perfluorononanoic acid	ng/L	10000	9260	93	70	130	
Perfluorooctanoic acid	ng/L	10000	9010	90	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8450	91	70	130	
Perfluoropentanoic acid	ng/L	10000	9330	93	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9230	92	70	130	
Perfluorotridecanoic acid	ng/L	10000	9490	95	70	130	
Perfluoroundecanoic acid	ng/L	10000	9310	93	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/29/2021 17:24	Lab File ID:	2210729B_14.d
Analytical Method:		Analytical Batch:	717492

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	8940	94	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9310	97	70	130	
NEtFOSAA	ng/L	10000	9210	92	70	130	
NMeFOSAA	ng/L	10000	9530	95	70	130	
Perfluorobutanoic acid	ng/L	10000	9320	93	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8070	91	70	130	
Perfluorodecanoic acid	ng/L	10000	9270	93	70	130	
Perfluorododecanoic acid	ng/L	10000	9370	94	70	130	
Perfluoroheptanoic acid	ng/L	10000	9070	91	70	130	
Perfluorohexanoic acid	ng/L	10000	9230	92	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8460	93	70	130	
Perfluorononanoic acid	ng/L	10000	9290	93	70	130	
Perfluorooctanoic acid	ng/L	10000	9210	92	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8330	90	70	130	
Perfluoropentanoic acid	ng/L	10000	9300	93	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9250	92	70	130	
Perfluorotridecanoic acid	ng/L	10000	9230	92	70	130	
Perfluoroundecanoic acid	ng/L	10000	9170	92	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/29/2021 19:07	Lab File ID:	2210729B_21.d
Analytical Method:		Analytical Batch:	717492

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	8800	93	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9200	96	70	130	
NEtFOSAA	ng/L	10000	8780	88	70	130	
NMeFOSAA	ng/L	10000	9060	91	70	130	
Perfluorobutanoic acid	ng/L	10000	9350	93	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	7990	90	70	130	
Perfluorodecanoic acid	ng/L	10000	9320	93	70	130	
Perfluorododecanoic acid	ng/L	10000	9400	94	70	130	
Perfluoroheptanoic acid	ng/L	10000	9100	91	70	130	
Perfluorohexanoic acid	ng/L	10000	9230	92	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8310	91	70	130	
Perfluorononanoic acid	ng/L	10000	9250	92	70	130	
Perfluorooctanoic acid	ng/L	10000	9110	91	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8370	90	70	130	
Perfluoropentanoic acid	ng/L	10000	9360	94	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9200	92	70	130	
Perfluorotridecanoic acid	ng/L	10000	9390	94	70	130	
Perfluoroundecanoic acid	ng/L	10000	9230	92	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/29/2021 22:06	Lab File ID:	2210729B_33.d
Analytical Method:		Analytical Batch:	717492

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	9150	96	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9310	97	70	130	
NEtFOSAA	ng/L	10000	9180	92	70	130	
NMeFOSAA	ng/L	10000	8910	89	70	130	
Perfluorobutanoic acid	ng/L	10000	9330	93	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8010	90	70	130	
Perfluorodecanoic acid	ng/L	10000	9270	93	70	130	
Perfluorododecanoic acid	ng/L	10000	9350	93	70	130	
Perfluoroheptanoic acid	ng/L	10000	9160	92	70	130	
Perfluorohexanoic acid	ng/L	10000	9180	92	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8330	91	70	130	
Perfluorononanoic acid	ng/L	10000	9160	92	70	130	
Perfluorooctanoic acid	ng/L	10000	9060	91	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8300	89	70	130	
Perfluoropentanoic acid	ng/L	10000	9250	93	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9290	93	70	130	
Perfluorotridecanoic acid	ng/L	10000	9140	91	70	130	
Perfluoroundecanoic acid	ng/L	10000	9260	93	70	130	

FORM 7E - ORG

8I

INTERNAL STANDARD AREA SUMMARY

Report No:	221072417	Standard ID:	1450 (ISC)
Analyst:	RXJ	Instrument ID:	QQQ3
Analysis Date:	07/29/21 10:18	Lab File ID:	2210729A_3.d
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	717435

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		716001		561739		677935		109939	
CLIENT SAMPLE ID	*LAB SAMP ID*		*#*		*#*		*#*		*#*
MB2219153	2219153	642157		500279		595164		100660	
LCS2219154	2219154	619409		488017		583466		99039	
LCSD2219155	2219155	605794		475958		571982		96688	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

8I

INTERNAL STANDARD AREA SUMMARY

Report No:	221072417	Standard ID:	1450 (ISC)
Analyst:	ADA	Instrument ID:	QQQ3
Analysis Date:	07/29/21 14:19	Lab File ID:	2210729B_2.d
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	717492

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		663658		498960		600482		100445	
CLIENT SAMPLE ID	*LAB SAMP ID*		*#*		*#*		*#*		*#*
CS-ERB-01	22107241709	665022		506432		621493		105105	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

LC-QQQ Instrument Run Log

Agilent

Instrument:	QQQ 3	**LIMS Batch (HBN):**	717622
Instrument Batch:	2210731A.batch.bin	**20mM NH4OAc (ID/Exp):**	019-8-2 8/2/21
Current ICAL Batch:	2210727BCAL	**Methanol (ID/Exp):**	2130465 6/10/25
ICAL Std (ID/Exp):	016-100-9 11/17/21	**EIS Mix (ID/Exp):**	019-2-2 1/19/22
ICV Std (ID/Exp):	019-6-1 10/18/21	**IIS Mix (ID/Exp):**	019-1-4 1/18/22

Acquisition time	Data File	Name	Type	Dilution	Comment
07/27/21 14:09:56	2210727B_1.d	1201	Cal	1	ADA,QQQ3;ICAL
07/27/21 14:24:41	2210727B_2.d	1202	Cal	1	ADA,QQQ3;ICAL
07/27/21 14:39:17	2210727B_3.d	1203	Cal	1	ADA,QQQ3;ICAL
07/27/21 14:53:53	2210727B_4.d	1204	Cal	1	ADA,QQQ3;ICAL
07/27/21 15:08:30	2210727B_5.d	1205	Cal	1	ADA,QQQ3;ICAL
07/27/21 15:23:06	2210727B_6.d	1206	Cal	1	ADA,QQQ3;ICAL
07/27/21 15:37:43	2210727B_7.d	1207	Cal	1	ADA,QQQ3;ICAL
07/27/21 16:06:01	2210727B_8.d	1500	Blank	1	ADA,QQQ3;ICAL
07/27/21 16:20:46	2210727B_9.d	1600	Sample	1	ADA,QQQ3;ICAL
07/27/21 16:35:23	2210727B_10.d	1450	QC	1	ADA,QQQ3;ICAL
07/31/21 10:11:52	2210731A_1.d	1400 RT TEST	QC	1	ADA,QQQ3;RT TEST
07/31/21 10:34:46	2210731A_2.d	1400 RT TEST	QC	1	ADA,QQQ3;RT TEST
07/31/21 10:54:54	2210731A_3.d	1500	Blank	1	ADA,QQQ3;Calibration Blank
07/31/21 11:09:39	2210731A_4.d	1450	QC	1	ADA,QQQ3;CCV
07/31/21 11:58:41	2210731A_5.d	2219180	Sample	1	ADA,QQQ3;717227
07/31/21 12:13:26	2210731A_6.d	2219181	Sample	1	ADA,QQQ3;717227
07/31/21 12:28:03	2210731A_7.d	2219182	Sample	1	ADA,QQQ3;717227
07/31/21 12:42:39	2210731A_8.d	22107238136	Sample	1	ADA,QQQ3;717227
07/31/21 12:57:19	2210731A_9.d	22107238138	Sample	1	ADA,QQQ3;717227
07/31/21 13:11:57	2210731A_10.d	22107238139	Sample	1	ADA,QQQ3;717227
07/31/21 13:26:33	2210731A_11.d	22107241701	Sample	1	ADA,QQQ3;717227
07/31/21 13:41:10	2210731A_12.d	22107241702	Sample	1	ADA,QQQ3;717227
07/31/21 13:55:47	2210731A_13.d	22107241703	Sample	1	ADA,QQQ3;717227
07/31/21 14:10:24	2210731A_14.d	22107241704	Sample	1	ADA,QQQ3;717227
07/31/21 14:25:00	2210731A_15.d	22107241705	Sample	1	ADA,QQQ3;717227
07/31/21 14:39:37	2210731A_16.d	22107243824	Sample	5	ADA,QQQ3;717227 dirty sample
07/31/21 14:54:13	2210731A_17.d	22107243825	Sample	1	ADA,QQQ3;717227
07/31/21 15:08:50	2210731A_18.d	1400	QC	1	ADA,QQQ3;CCV
07/31/21 15:23:29	2210731A_19.d	22107243826	Sample	1	ADA,QQQ3;717227
07/31/21 15:38:05	2210731A_20.d	22107243827	Sample	1	ADA,QQQ3;717227
07/31/21 15:52:41	2210731A_21.d	22107243829	Sample	5	ADA,QQQ3;717227 dirty sample
07/31/21 16:07:18	2210731A_22.d	22107243830	Sample	5	ADA,QQQ3;717227 dirty sample
07/31/21 16:21:55	2210731A_23.d	22107243831	Sample	5	ADA,QQQ3;717227 dirty sample
07/31/21 16:36:32	2210731A_24.d	22107243832	Sample	5	ADA,QQQ3;717227 dirty sample
07/31/21 16:51:08	2210731A_25.d	22107244901	Sample	5	ADA,QQQ3;717227 dirty sample
07/31/21 17:05:44	2210731A_26.d	22107244902	Sample	5	ADA,QQQ3;717227 dirty sample
07/31/21 17:20:21	2210731A_27.d	2219183	Sample	5	ADA,QQQ3;717227 dirty sample
07/31/21 17:34:58	2210731A_28.d	2219184	Sample	5	ADA,QQQ3;717227 dirty sample
07/31/21 17:49:37	2210731A_29.d	22107137220	Sample	1	ADA,QQQ3;717227
07/31/21 18:04:14	2210731A_30.d	1400	QC	1	ADA,QQQ3;CCV

4I

ORGANICS INSTRUMENT BLANK

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/31/2021 10:54	Lab File ID:	2210731A_3.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	717622

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
6:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.50	3.00	4.00	
8:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.06	3.00	4.00	
NEtFOSAA	ng/L	4.00	U	1.58	4.00	8.00	
NMeFOSAA	ng/L	4.00	U	0.90	4.00	8.00	
Perfluorobutanesulfonic acid	ng/L	2.00	U	0.62	2.00	4.00	
Perfluorobutanoic acid	ng/L	3.50	U	1.52	3.50	4.00	
Perfluorodecanoic acid	ng/L	3.00	U	1.44	3.00	4.00	
Perfluorododecanoic acid	ng/L	3.00	U	1.30	3.00	4.00	
Perfluoroheptanoic acid	ng/L	3.00	U	1.16	3.00	4.00	
Perfluorohexanesulfonic acid	ng/L	3.00	U	1.24	3.00	4.00	
Perfluorohexanoic acid	ng/L	2.00	U	0.94	2.00	4.00	
Perfluorononanoic acid	ng/L	2.00	U	0.98	2.00	4.00	
Perfluorooctanesulfonic acid	ng/L	2.00	U	0.76	2.00	4.00	
Perfluorooctanoic acid	ng/L	2.00	U	0.84	2.00	4.00	
Perfluoropentanoic acid	ng/L	2.00	U	0.88	2.00	4.00	
Perfluorotetradecanoic acid	ng/L	3.00	U	1.14	3.00	4.00	
Perfluorotridecanoic acid	ng/L	3.00	U	1.23	3.00	4.00	
Perfluoroundecanoic acid	ng/L	3.00	U	1.24	3.00	4.00	

* - Result greater than 1/2 LOQ

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/31/2021 15:08	Lab File ID:	2210731A_18.d
Analytical Method:		Analytical Batch:	717622

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	8790	92	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9090	95	70	130	
NEtFOSAA	ng/L	10000	8990	90	70	130	
NMeFOSAA	ng/L	10000	9490	95	70	130	
Perfluorobutanoic acid	ng/L	10000	9330	93	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8090	91	70	130	
Perfluorodecanoic acid	ng/L	10000	9260	93	70	130	
Perfluorododecanoic acid	ng/L	10000	9230	92	70	130	
Perfluoroheptanoic acid	ng/L	10000	9170	92	70	130	
Perfluorohexanoic acid	ng/L	10000	9170	92	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8350	91	70	130	
Perfluorononanoic acid	ng/L	10000	9220	92	70	130	
Perfluorooctanoic acid	ng/L	10000	9240	92	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8260	89	70	130	
Perfluoropentanoic acid	ng/L	10000	9360	94	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9020	90	70	130	
Perfluorotridecanoic acid	ng/L	10000	9460	95	70	130	
Perfluoroundecanoic acid	ng/L	10000	9380	94	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072417	Instrument ID:	QQQ3
Analysis Date:	07/31/2021 18:04	Lab File ID:	2210731A_30.d
Analytical Method:		Analytical Batch:	717622

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	9030	95	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9290	97	70	130	
NEtFOSAA	ng/L	10000	9040	90	70	130	
NMeFOSAA	ng/L	10000	9590	96	70	130	
Perfluorobutanoic acid	ng/L	10000	9350	93	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8110	91	70	130	
Perfluorodecanoic acid	ng/L	10000	9240	92	70	130	
Perfluorododecanoic acid	ng/L	10000	9250	93	70	130	
Perfluoroheptanoic acid	ng/L	10000	9180	92	70	130	
Perfluorohexanoic acid	ng/L	10000	9060	91	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8540	93	70	130	
Perfluorononanoic acid	ng/L	10000	9210	92	70	130	
Perfluorooctanoic acid	ng/L	10000	9020	90	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8420	91	70	130	
Perfluoropentanoic acid	ng/L	10000	9300	93	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9010	90	70	130	
Perfluorotridecanoic acid	ng/L	10000	9200	92	70	130	
Perfluoroundecanoic acid	ng/L	10000	9390	94	70	130	

FORM 7E - ORG

8I

INTERNAL STANDARD AREA SUMMARY

Report No:	221072417	Standard ID:	1450 (ISC)
Analyst:	ADA	Instrument ID:	QQQ3
Analysis Date:	07/31/21 11:09	Lab File ID:	2210731A_4.d
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	717622

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		632754		493908		585458		103928	
CLIENT SAMPLE ID	*LAB SAMP ID*		*#*		*#*		*#*		*#*
CS-MW004S-SB-07-09	22107241701	604454		484114		583054		104031	
CS-MW001S-SB-00-02	22107241702	639845		483281		591364		105543	
CS-MW001S-SB-00-02-D	22107241703	620975		472686		571127		102385	
CS-MW001D-SB-08-10	22107241704	603522		477662		578888		102299	
CS-MW004S-SB-00-02	22107241705	620737		488117		586910		104439	
MB2219180	2219180	652272		498401		637113		108474	
LCS2219181	2219181	634596		497358		600431		107416	
LCSD2219182	2219182	634701		502078		602393		106958	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

LC-QQQ Instrument Run Log

Agilent

Instrument: QQQ 4
Instrument Batch: 2210804A.batch.bin
Current ICAL Batch: 2210803ACAL
ICAL Std (ID/Exp): 016-100-9 11/17/21
ICV Std (ID/Exp): 019-6-1 10/18/21

LIMS Batch (HBN): 717959
20mM NH4OAc (ID/Exp): 019-9-4 8/5/21
Methanol (ID/Exp): 2130465 6/10/25
EIS Mix (ID/Exp): 019-2-2 119/21
IIS Mix (ID/Exp): 019-1-4 1/18/22

Acquisition time	Data File	Name	Type	Dilution	Comment
08/03/21 10:30:18	2210803A_02.d	1201	Cal	1	MRA,QQQ4;ICAL
08/03/21 10:44:54	2210803A_03.d	1202	Cal	1	MRA,QQQ4;ICAL
08/03/21 10:59:32	2210803A_04.d	1203	Cal	1	MRA,QQQ4;ICAL
08/03/21 11:14:08	2210803A_05.d	1204	Cal	1	MRA,QQQ4;ICAL
08/03/21 11:28:43	2210803A_06.d	1205	Cal	1	MRA,QQQ4;ICAL
08/03/21 11:43:19	2210803A_07.d	1206	Cal	1	MRA,QQQ4;ICAL
08/03/21 11:57:55	2210803A_08.d	1207	Cal	1	MRA,QQQ4;ICAL
08/03/21 12:18:13	2210803A_09.d	1500	Sample	1	MRA,QQQ4
08/03/21 12:32:59	2210803A_10.d	1600	Sample	1	MRA,QQQ4
08/03/21 12:47:36	2210803A_11.d	1450	QC	1	MRA,QQQ4
08/04/21 10:43:51	2210804A_01.d	1400 TEST	QC	1	MRA,QQQ4
08/04/21 10:58:37	2210804A_02.d	1500	Sample	1	MRA,QQQ4;ICAL
08/04/21 11:13:14	2210804A_03.d	1450	QC	1	MRA,QQQ4;ICAL
08/04/21 12:27:19	2210804A_04.d	22107283807 10x	Sample	10	MRA,QQQ4;717571
08/04/21 12:42:03	2210804A_05.d	2220286	Sample	1	MRA,QQQ4;717433
08/04/21 12:56:39	2210804A_06.d	2220287	QC	1	MRA,QQQ4;717433
08/04/21 13:11:16	2210804A_07.d	2220288	QC	1	MRA,QQQ4;717433
08/04/21 13:25:54	2210804A_08.d	22107280715	Sample	1	MRA,QQQ4;717433
08/04/21 13:40:31	2210804A_09.d	22107280716	Sample	1	MRA,QQQ4;717433
08/04/21 13:55:07	2210804A_10.d	22107280717	Sample	1	MRA,QQQ4;717433
08/04/21 14:09:43	2210804A_11.d	22107280718	Sample	1	MRA,QQQ4;717433
08/04/21 14:24:19	2210804A_12.d	22107280719	QC	1	MRA,QQQ4;717433
08/04/21 14:38:56	2210804A_13.d	22107280720	QC	1	MRA,QQQ4;717433
08/04/21 14:53:32	2210804A_14.d	22107283701	Sample	1	MRA,QQQ4;717433
08/04/21 15:08:09	2210804A_15.d	22107283817	Sample	1	MRA,QQQ4;717433
08/04/21 15:22:46	2210804A_16.d	22107283818	Sample	1	MRA,QQQ4;717433
08/04/21 15:37:22	2210804A_17.d	1400	QC	1	MRA,QQQ4;CCV
08/04/21 15:52:00	2210804A_18.d	22107283819	Sample	1	MRA,QQQ4;717433
08/04/21 16:06:36	2210804A_19.d	22107283820	Sample	1	MRA,QQQ4;717433
08/04/21 16:21:13	2210804A_20.d	22107293901	Sample	1	MRA,QQQ4;717433
08/04/21 16:35:50	2210804A_21.d	22107293914	Sample	1	MRA,QQQ4;717433
08/04/21 16:50:28	2210804A_22.d	22107293915	Sample	1	MRA,QQQ4;717433
08/04/21 17:05:04	2210804A_23.d	22107293916	QC	1	MRA,QQQ4;717433
08/04/21 17:19:40	2210804A_24.d	22107293917	QC	1	MRA,QQQ4;717433
08/04/21 17:34:16	2210804A_25.d	22107293918	Sample	1	MRA,QQQ4;717433
08/04/21 17:48:52	2210804A_26.d	22107293919	Sample	1	MRA,QQQ4;717433
08/04/21 18:03:28	2210804A_27.d	22107245012	Sample	1	MRA,QQQ4;717433
08/04/21 18:18:07	2210804A_28.d	22107245013	Sample	1	MRA,QQQ4;717433
08/04/21 18:32:43	2210804A_29.d	1400	QC	1	MRA,QQQ4;CCV

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/04/2021 11:13	Lab File ID:	2210804A_03.d
Analytical Method:		Analytical Batch:	717959

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	3.81	3.74	98	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	3.84	4.00	104	70	130	
NEtFOSAA	ng/L	4.00	3.54	88	70	130	
NMeFOSAA	ng/L	4.00	4.22	106	70	130	
Perfluorobutanoic acid	ng/L	4.00	3.82	95	70	130	
Perfluorobutanesulfonic acid	ng/L	3.55	3.34	94	70	130	
Perfluorodecanoic acid	ng/L	4.00	3.66	91	70	130	
Perfluorododecanoic acid	ng/L	4.00	3.80	95	70	130	
Perfluoroheptanoic acid	ng/L	4.00	3.74	93	70	130	
Perfluorohexanoic acid	ng/L	4.00	3.86	96	70	130	
Perfluorohexanesulfonic acid	ng/L	3.66	3.55	97	70	130	
Perfluorononanoic acid	ng/L	4.00	3.67	92	70	130	
Perfluorooctanoic acid	ng/L	4.00	3.74	94	70	130	
Perfluorooctanesulfonic acid	ng/L	3.71	3.59	97	70	130	
Perfluoropentanoic acid	ng/L	4.00	3.75	94	70	130	
Perfluorotetradecanoic acid	ng/L	4.00	3.86	96	70	130	
Perfluorotridecanoic acid	ng/L	4.00	3.90	98	70	130	
Perfluoroundecanoic acid	ng/L	4.00	3.69	92	70	130	

4I

ORGANICS INSTRUMENT BLANK

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/04/2021 10:58	Lab File ID:	2210804A_02.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	717959

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
6:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.50	3.00	4.00	
8:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.06	3.00	4.00	
NEtFOSAA	ng/L	4.00	U	1.58	4.00	8.00	
NMeFOSAA	ng/L	4.00	U	0.90	4.00	8.00	
Perfluorobutanesulfonic acid	ng/L	2.00	U	0.62	2.00	4.00	
Perfluorobutanoic acid	ng/L	3.50	U	1.52	3.50	4.00	
Perfluorodecanoic acid	ng/L	3.00	U	1.44	3.00	4.00	
Perfluorododecanoic acid	ng/L	3.00	U	1.30	3.00	4.00	
Perfluoroheptanoic acid	ng/L	3.00	U	1.16	3.00	4.00	
Perfluorohexanesulfonic acid	ng/L	3.00	U	1.24	3.00	4.00	
Perfluorohexanoic acid	ng/L	2.00	U	0.94	2.00	4.00	
Perfluorononanoic acid	ng/L	2.00	U	0.98	2.00	4.00	
Perfluorooctanesulfonic acid	ng/L	2.00	U	0.76	2.00	4.00	
Perfluorooctanoic acid	ng/L	2.00	U	0.84	2.00	4.00	
Perfluoropentanoic acid	ng/L	2.00	U	0.88	2.00	4.00	
Perfluorotetradecanoic acid	ng/L	3.00	U	1.14	3.00	4.00	
Perfluorotridecanoic acid	ng/L	3.00	U	1.23	3.00	4.00	
Perfluoroundecanoic acid	ng/L	3.00	U	1.24	3.00	4.00	

* - Result greater than 1/2 LOQ

Quantitative Analysis Calibration Report

Batch Data Path	C:\MassHunter\Data\QQQ4\2210803ACAL\QuantResults\2210804A.batch.bin		
Analysis Time	8/9/2021 4:57 PM	**Analyst Name**	GCAL\lcms
Report Time	8/16/2021 11:20 AM	**Reporter Name**	GCAL\lcms
Last Calib Update	8/4/2021 11:46 AM	**Batch State**	Processed

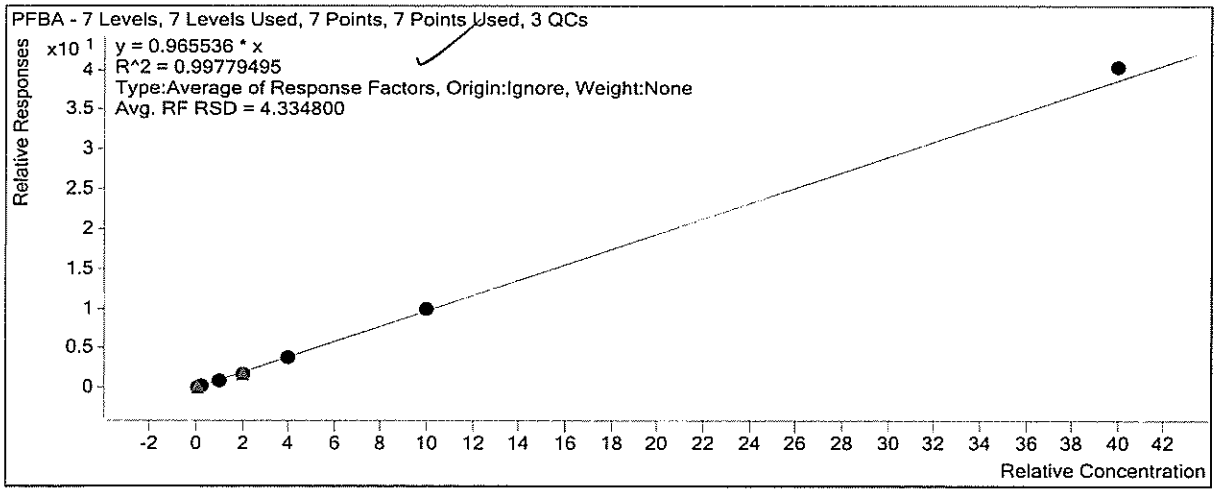
Calibration Info

Extracted ISTD *MPFBA*

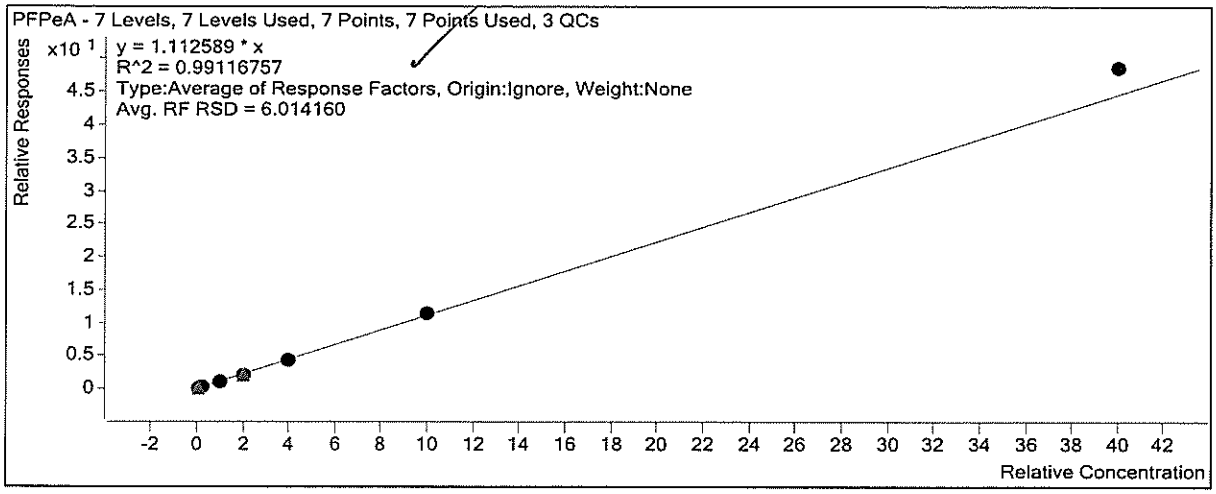
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	136577	5.0000	27315.4232
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	126284	5.0000	25256.7782
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	133668	5.0000	26733.5866
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	134517	5.0000	26903.4754
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	147122	5.0000	29424.3705
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	160440	5.0000	32087.9801
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	151185	5.0000	30236.9682

Target Compound *PFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	12364	0.5000	0.9053
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	31549	1.2500	0.9993
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	130112	5.0000	0.9734
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	244205	10.0000	0.9077
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	578627	20.0000	0.9832
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	1576785	50.0000	0.9828
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	6089988	200.0000	1.0070



Quantitative Analysis Calibration Report



Extracted ISTD *M5PFPeA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	176361	5.0000	35272.2216
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	162396	5.0000	32479.2801
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	167484	5.0000	33496.8989
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	169369	5.0000	33873.8950
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	184158	5.0000	36831.6136
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	196831	5.0000	39366.2454
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	178136	5.0000	35627.1572

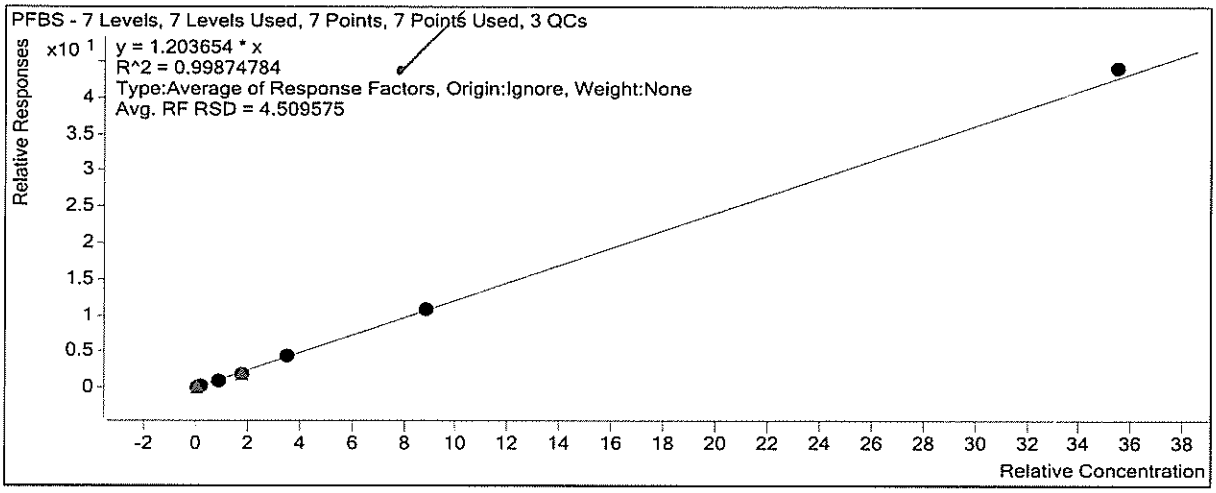
Extracted ISTD *M3PFBS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	60494	5.0000	12098.8707
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	55159	5.0000	11031.8625
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	57596	5.0000	11519.2835
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	57740	5.0000	11548.0191
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	62210	5.0000	12441.9772
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	65794	5.0000	13158.8597
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	59677	5.0000	11935.4740

Target Compound *PFBS*

Quantitative Analysis Calibration Report

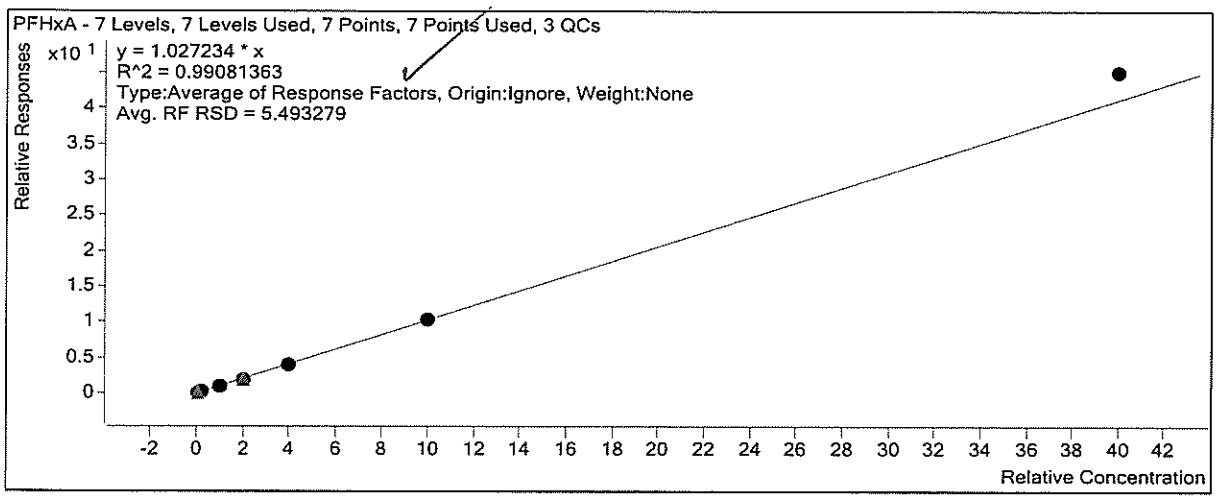
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	6107	0.4435	1.1381
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	15511	1.1088	1.2681
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	61707	4.4350	1.2079
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	114793	8.8700	1.1207
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	269957	17.7400	1.2231
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	715403	44.3500	1.2259
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	2629512	177.4000	1.2419



Target Compound *PFMBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	12507	0.5000	0.6484
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	30874	1.2500	0.6825
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	127502	5.0000	0.6637
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	236482	10.0000	0.6119
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	554237	20.0000	0.6616
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	1494585	50.0000	0.6671
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	5075299	200.0000	0.6309

Quantitative Analysis Calibration Report



Extracted ISTD *M5PFHxA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	192903	5.0000	38580.5715
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	180951	5.0000	36190.1291
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	192110	5.0000	38421.9917
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	193224	5.0000	38644.8449
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	209415	5.0000	41883.0917
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	224026	5.0000	44805.2269
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	201126	5.0000	40225.1186

Instrument ISTD *M2PFHxA*

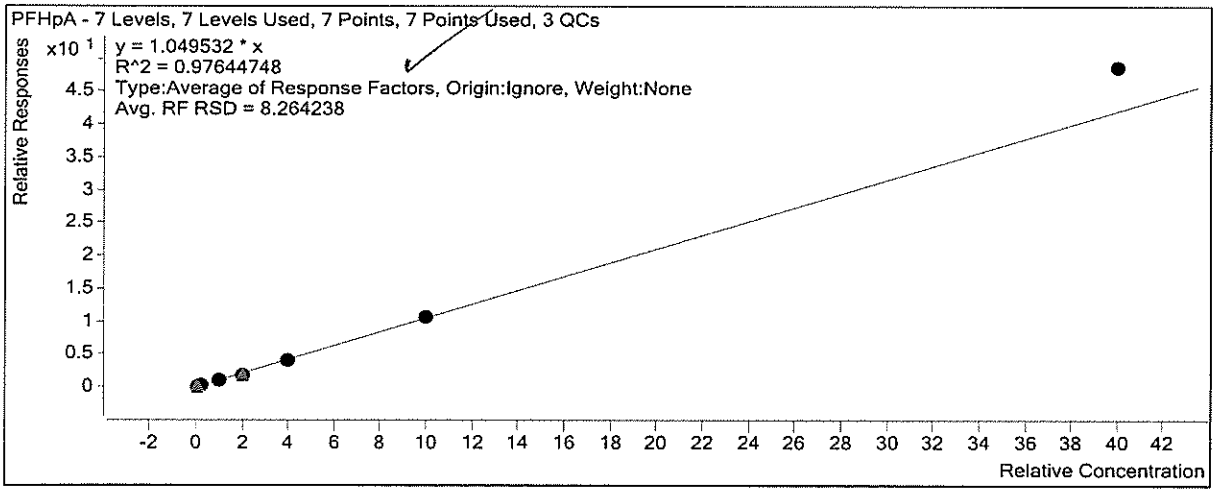
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	861575	20.0000	43078.7593
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	867528	20.0000	43376.4238
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	828313	20.0000	41415.6291
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	783352	20.0000	39167.6094
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	899732	20.0000	44986.6210
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	955047	20.0000	47752.3649
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	861205	20.0000	43060.2486

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	322678	5.0000	64535.6858
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	350699	5.0000	70139.8611
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	377900	5.0000	75580.0395
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	345438	5.0000	69087.5144

Target Compound *PFHpA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	32067	0.5000	0.9638
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	81397	1.2500	1.0684
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	326091	5.0000	1.0279
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	616665	10.0000	0.9555
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	1459022	20.0000	1.0401
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	4066548	50.0000	1.0761
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	16786390	200.0000	1.2149

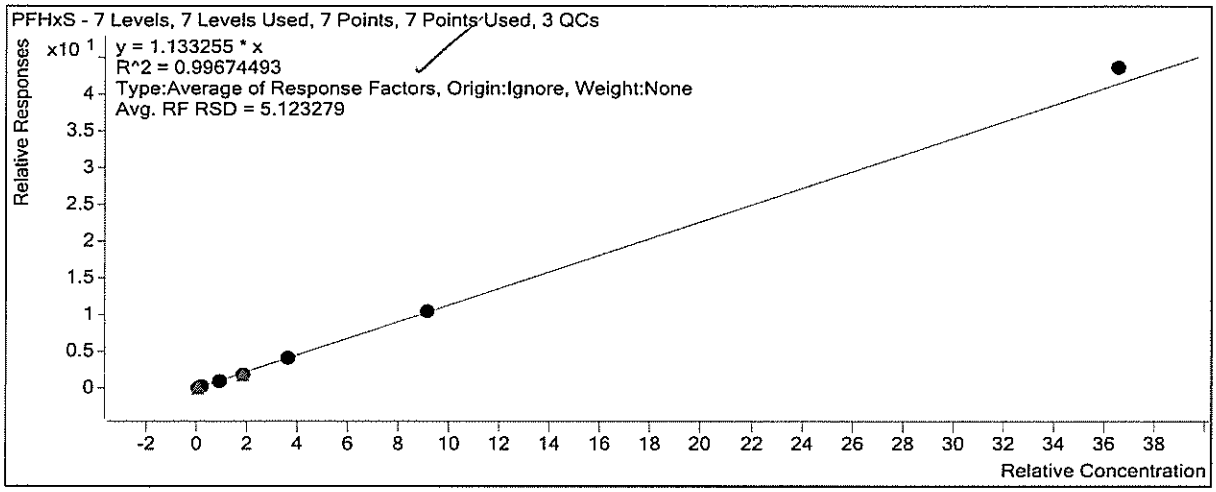


Target Compound *PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	4865	0.4570	1.0687
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	12434	1.1425	1.1953
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	49275	4.5700	1.1328
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	92238	9.1400	1.0434
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	221486	18.2800	1.1512
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	598868	45.7000	1.1481

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	2220592	182.8000	1.1932



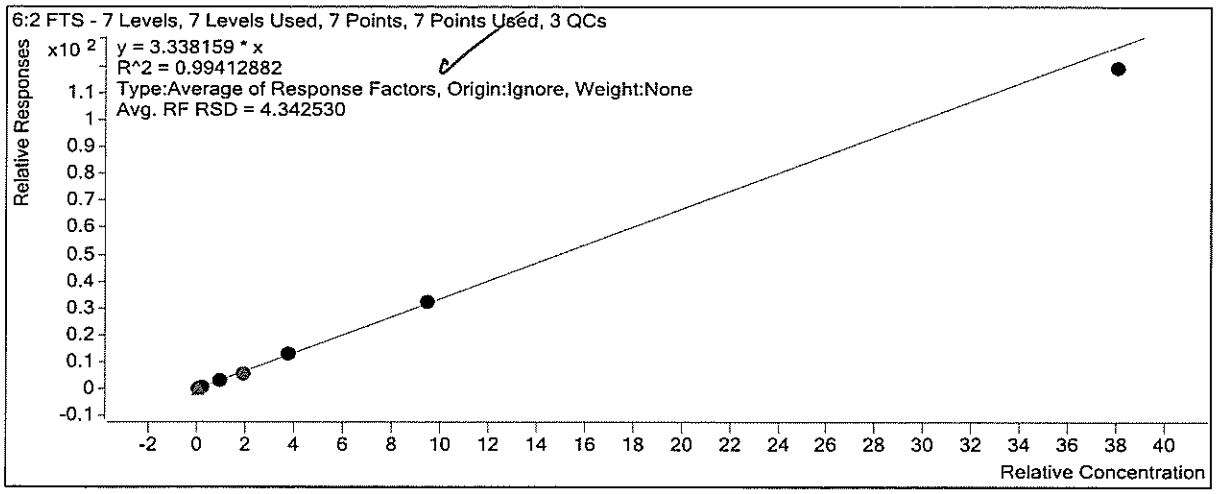
Extracted ISTD *M3PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	49807	5.0000	9961.3209
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	45523	5.0000	9104.5014
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	47593	5.0000	9518.6509
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	48357	5.0000	9671.4882
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	52624	5.0000	10524.8815
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	57071	5.0000	11414.1871
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	50902	5.0000	10180.3777

Target Compound *ADONA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	38749	0.4725	1.6053
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	96948	1.1813	1.8022
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	395068	4.7250	1.7280
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	739542	9.4500	1.5926
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	1785364	18.9000	1.8049
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	5072408	47.2500	1.9265
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	21170485	189.0000	2.2256

Quantitative Analysis Calibration Report



Extracted ISTD *M8PFOA*

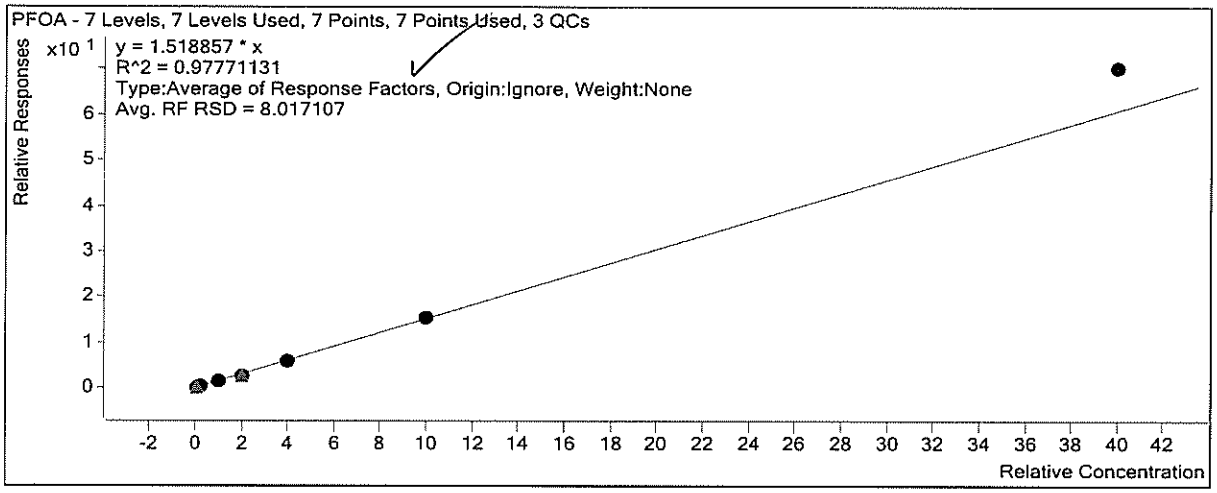
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	255434	5.0000	51086.7750
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	227689	5.0000	45537.8148
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	241929	5.0000	48385.7949
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	245692	5.0000	49138.4284
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	261690	5.0000	52338.0546
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	278625	5.0000	55725.0576
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	251649	5.0000	50329.7629

Instrument ISTD *MPFOA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	1711684	25.0000	68467.3550
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	1603725	25.0000	64149.0055
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	1476067	25.0000	59042.6866
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	1498502	25.0000	59940.0712
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	1704894	25.0000	68195.7794
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	1738377	25.0000	69535.0823
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	1521467	25.0000	60858.6846

Quantitative Analysis Calibration Report

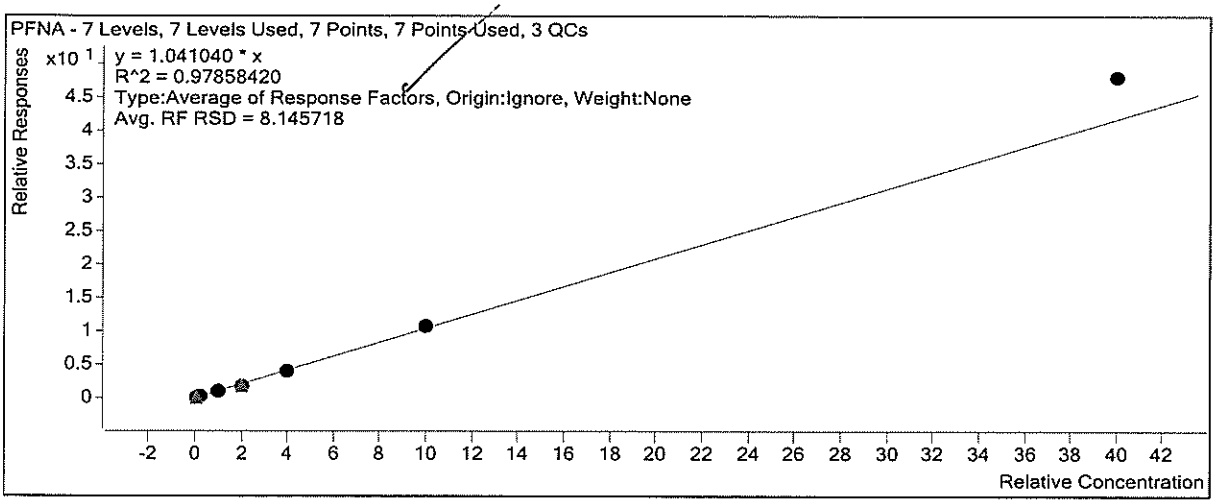
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	36587	0.5000	1.4324
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D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	356485	5.0000	1.4735
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	671587	10.0000	1.3667
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	1574851	20.0000	1.5045
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	4303289	50.0000	1.5445
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	17622356	200.0000	1.7507



Target Compound *PFHpS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	5316	0.4765	1.1199
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	13434	1.1913	1.2386
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	53813	4.7650	1.1864
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	100400	9.5300	1.0893
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	234308	19.0600	1.1680
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	617546	47.6500	1.1354
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	2144909	190.6000	1.1054

Quantitative Analysis Calibration Report



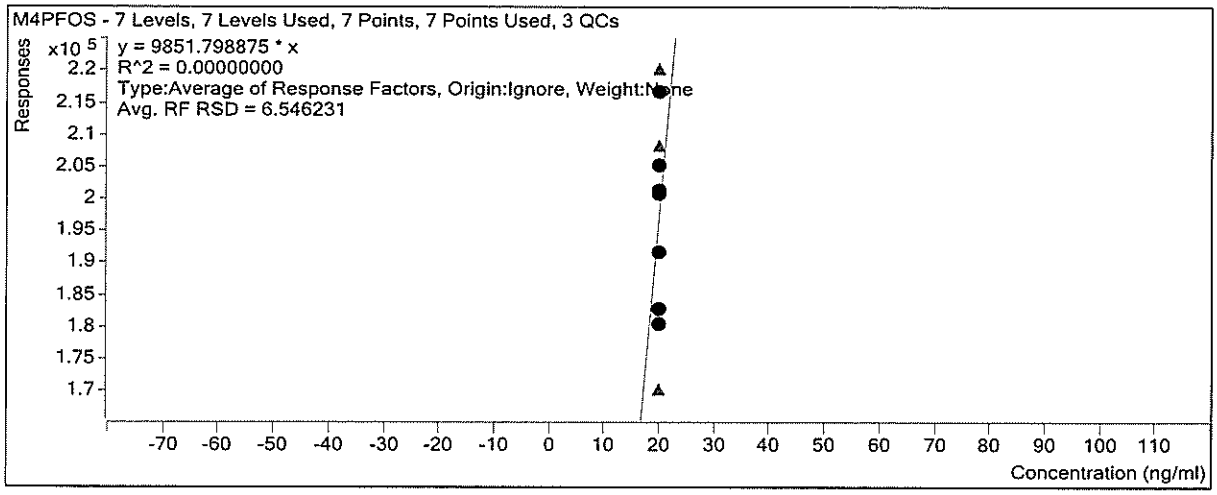
Extracted ISTD *M8PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	46917	5.0000	9383.4706
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	43826	5.0000	8765.2676
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	45467	5.0000	9093.3095
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	45832	5.0000	9166.3583
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	49379	5.0000	9875.7819
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	51982	5.0000	10396.3444
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	44815	5.0000	8962.9832

Instrument ISTD *M4PFOS*

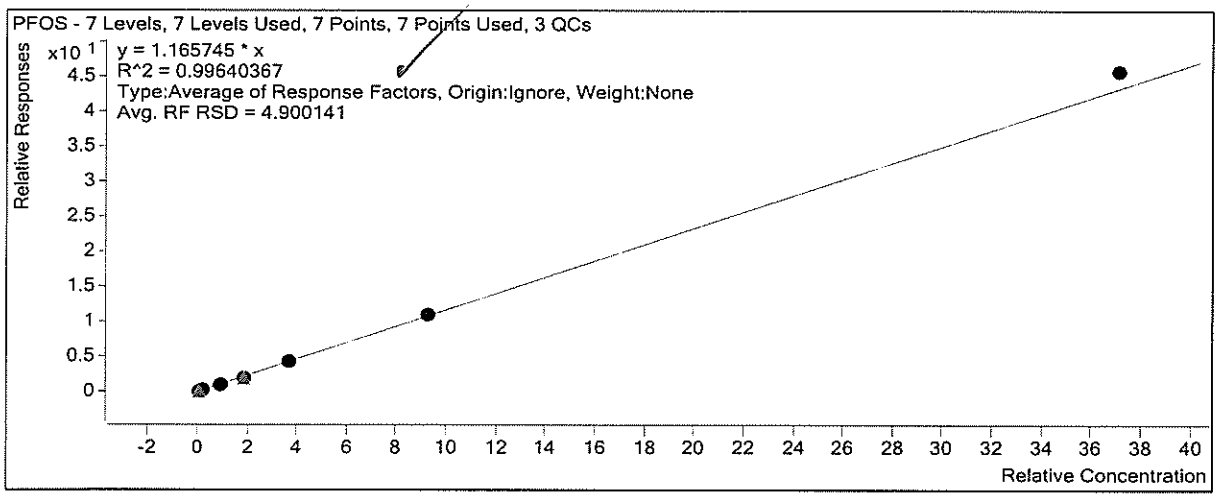
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	201332	20.0000	10066.6132
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	200825	20.0000	10041.2571
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	191708	20.0000	9585.3931
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	180519	20.0000	9025.9418
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	205316	20.0000	10265.8026
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	216814	20.0000	10840.7186
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	182737	20.0000	9136.8658

Quantitative Analysis Calibration Report



Target Compound *PFOS*

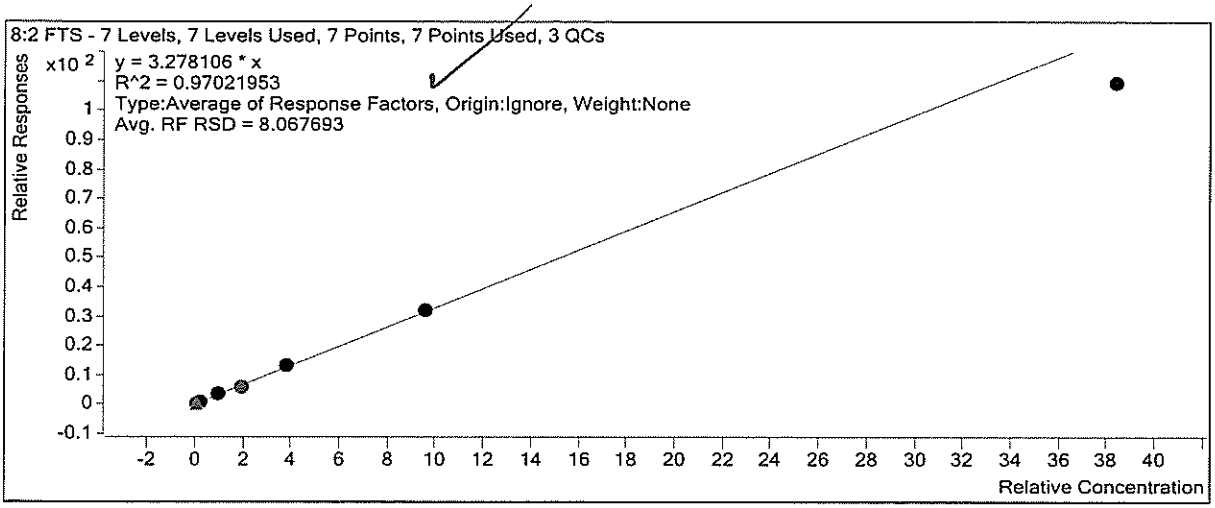
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	4794	0.4640	1.1011
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	12420	1.1600	1.2215
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	49066	4.6400	1.1629
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	91851	9.2800	1.0798
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	215169	18.5600	1.1739
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	574197	46.4000	1.1903
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	2047290	185.6000	1.2307



Target Compound *9Cl-PF3ONS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report



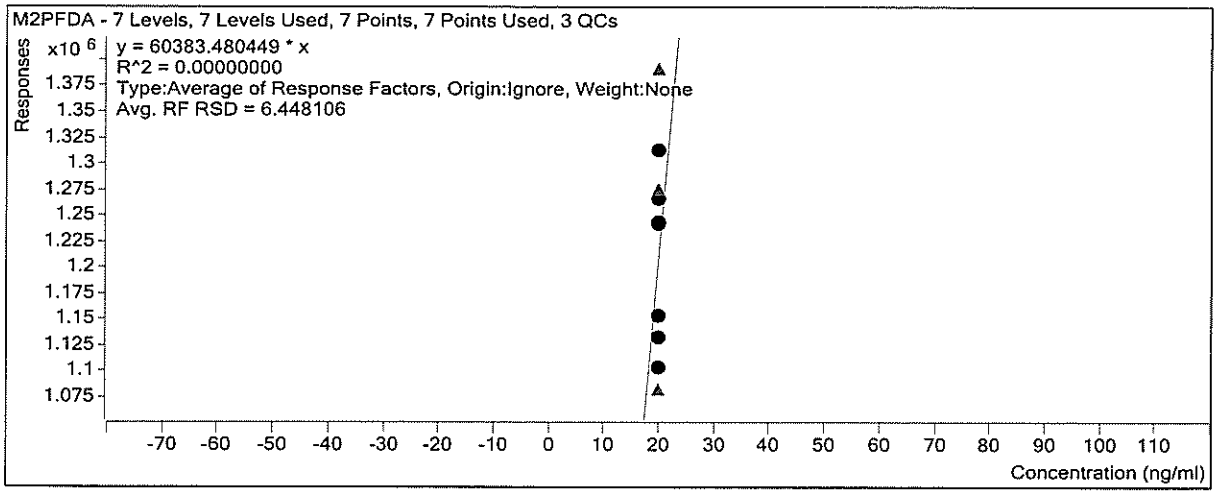
Extracted ISTD *M2 8:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	12710	5.0000	2542.0921
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	10693	5.0000	2138.5539
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	10783	5.0000	2156.5815
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	11021	5.0000	2204.2683
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	11543	5.0000	2308.5975
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	11180	5.0000	2235.9186
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	9587	5.0000	1917.4663

Target Compound *PFNS*

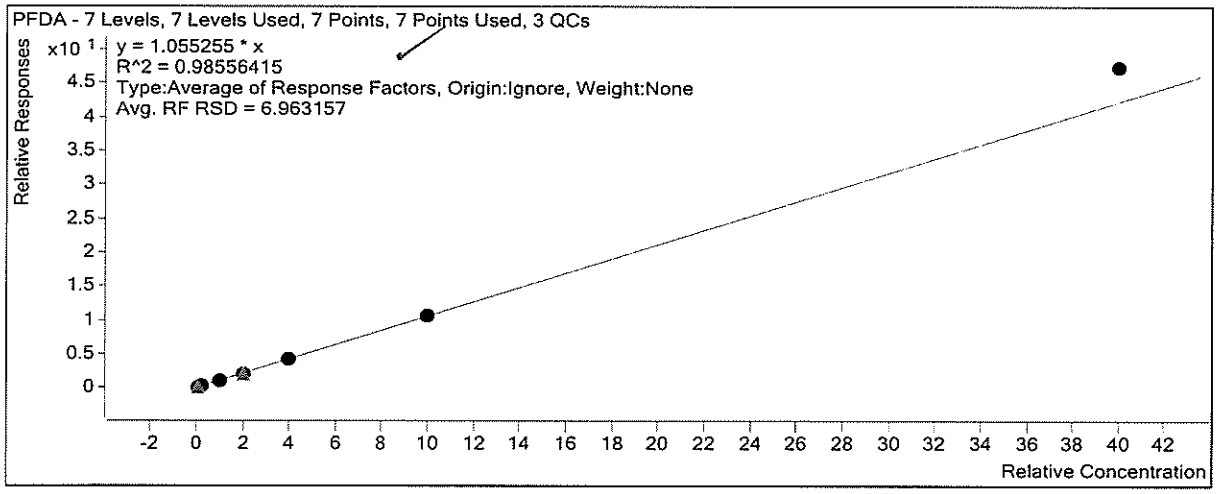
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	4687	0.4810	1.0385
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	11716	1.2025	1.1115
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	46381	4.8100	1.0604
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	88722	9.6200	1.0061
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	204378	19.2400	1.0756
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	536576	48.1000	1.0730
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	1765176	192.4000	1.0236

Quantitative Analysis Calibration Report



Target Compound *PFDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	27880	0.5000	0.9474
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	72195	1.2500	1.0775
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	289621	5.0000	1.0548
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	553749	10.0000	0.9910
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	1296002	20.0000	1.0710
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	3437429	50.0000	1.0641
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	13020227	200.0000	1.1810



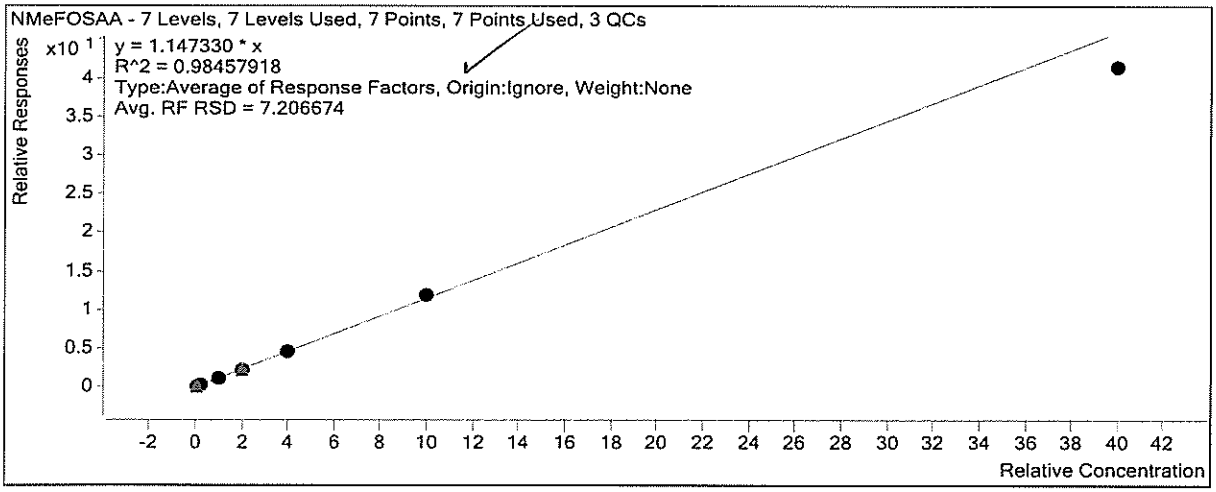
Extracted ISTD *d3-NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	23551	5.0000	4710.2121
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	21266	5.0000	4253.1453
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	22959	5.0000	4591.7103
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	21993	5.0000	4398.6383
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	26024	5.0000	5204.7274
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	27816	5.0000	5563.1526
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	31424	5.0000	6284.7236

Target Compound *NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	2629	0.5000	1.1163
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	6856	1.2500	1.2896
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	26843	5.0000	1.1692
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	47522	10.0000	1.0804
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	119517	20.0000	1.1482
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	331912	50.0000	1.1933
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	1300174	200.0000	1.0344

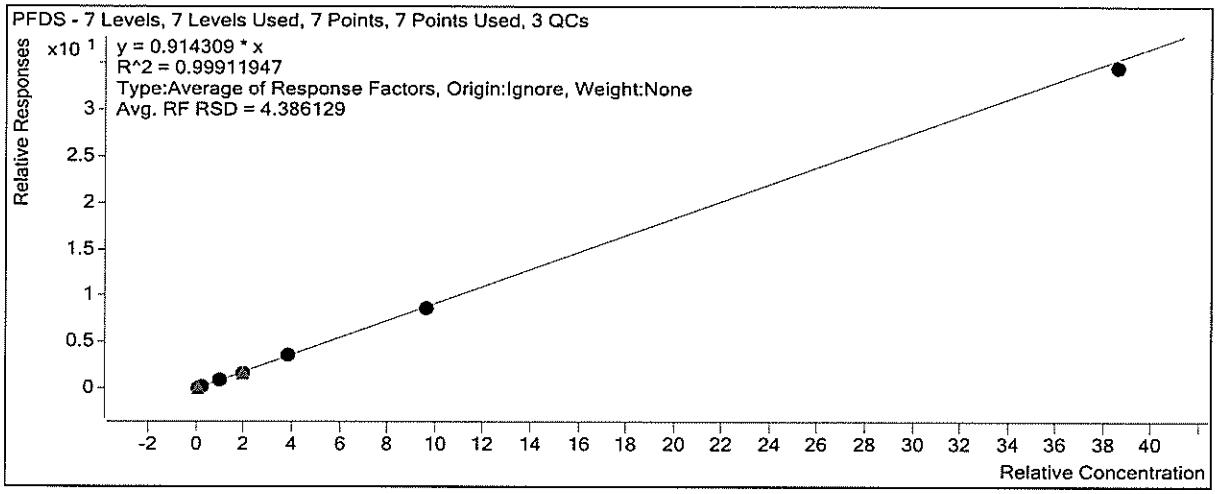


Target Compound *FOSA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	10236	0.5000	1.0044
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	26565	1.2500	1.1227
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	104343	5.0000	1.0907

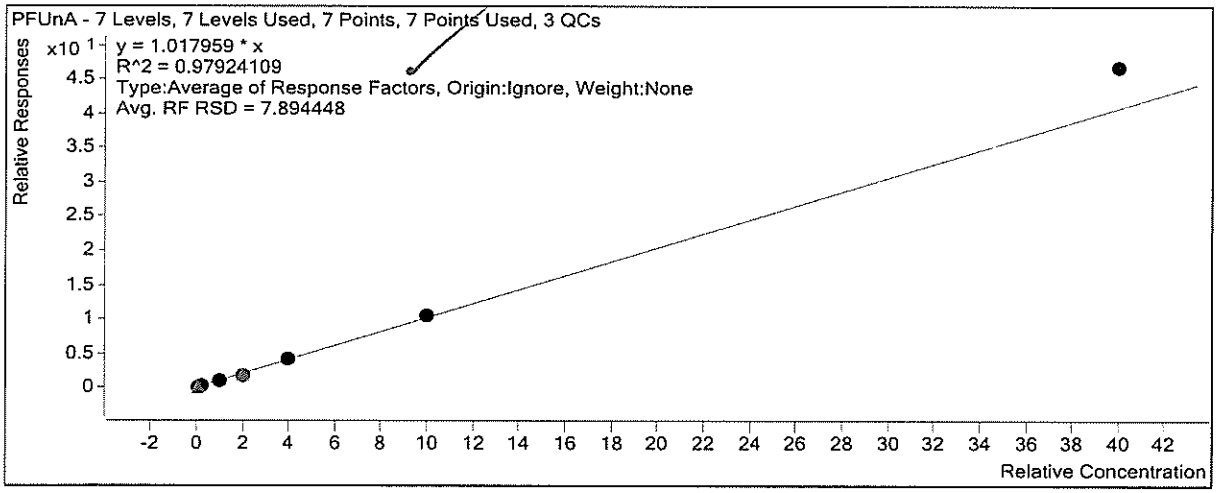
Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	1541796	193.0000	0.8913



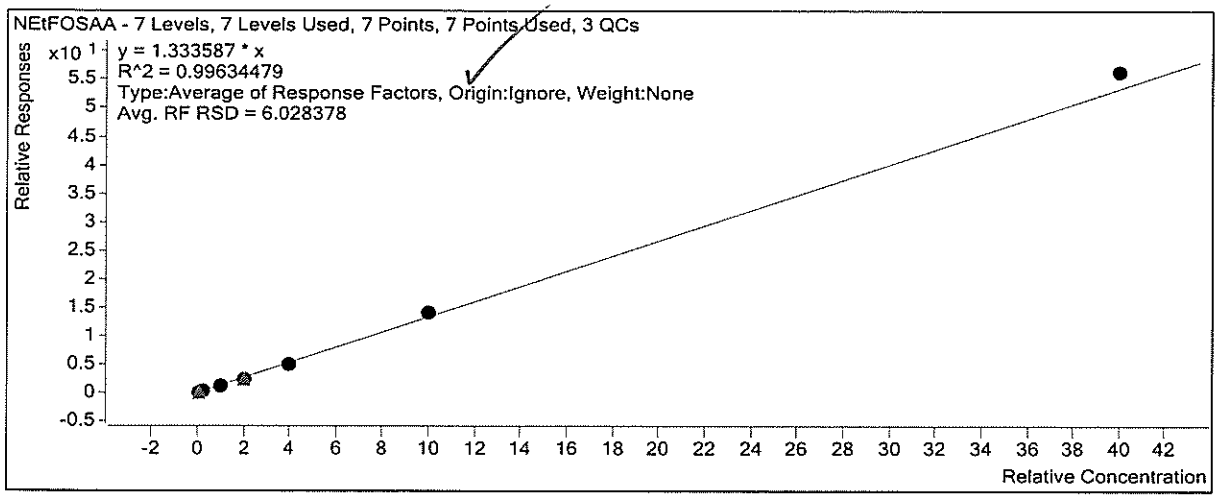
Target Compound *PFUnA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	27205	0.5000	0.9349
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	70438	1.2500	1.0342
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	278867	5.0000	1.0024
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	520808	10.0000	0.9257
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	1219173	20.0000	1.0186
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	3262467	50.0000	1.0429
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	12368595	200.0000	1.1670



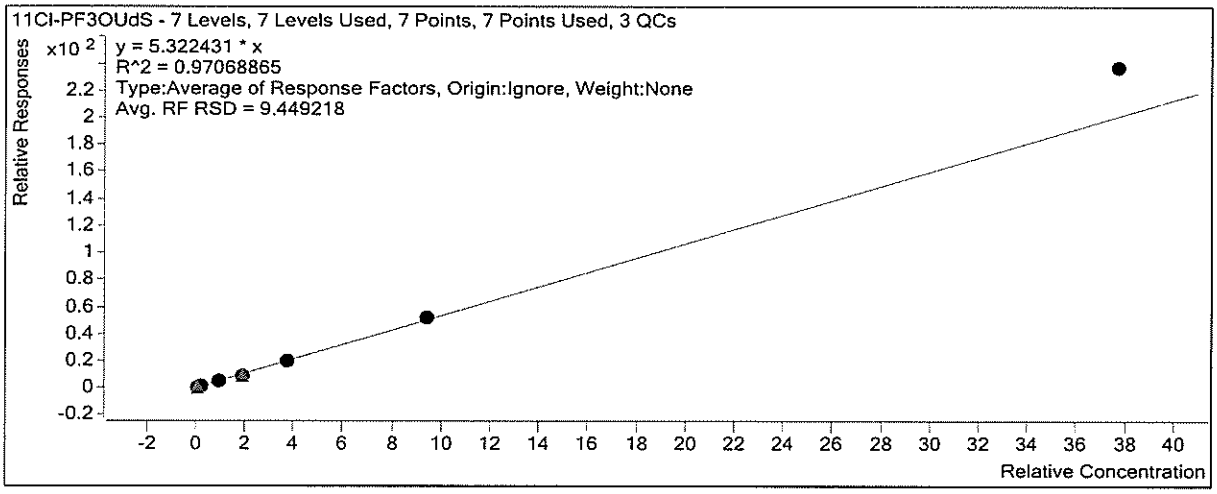
Extracted ISTD *d5-NEtFOSAA*

Quantitative Analysis Calibration Report



Target Compound *11Cl-PF3OUdS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	21007	0.4715	4.7480
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	56419	1.1788	5.4604
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	221914	4.7150	5.1759
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	419557	9.4300	4.8538
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	985059	18.8600	5.2887
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	2673665	47.1500	5.4544
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	10608846	188.6000	6.2759

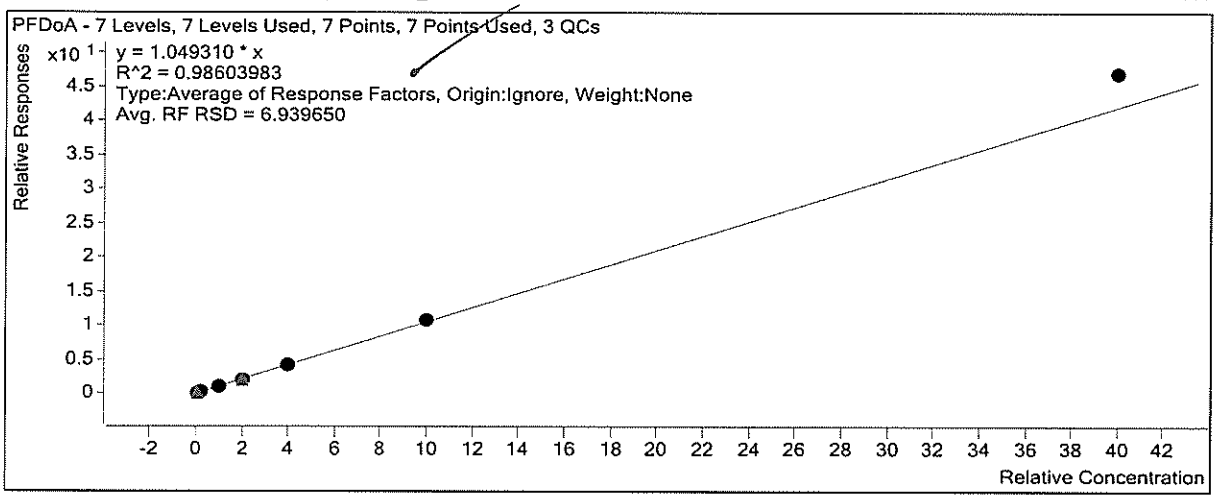


Target Compound *PFDoA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	33607	0.5000	0.9851
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	85663	1.2500	1.0576
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	344639	5.0000	1.0364
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	642911	10.0000	0.9448
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	1503511	20.0000	1.0628
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	4121300	50.0000	1.0867
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	16225784	200.0000	1.1716



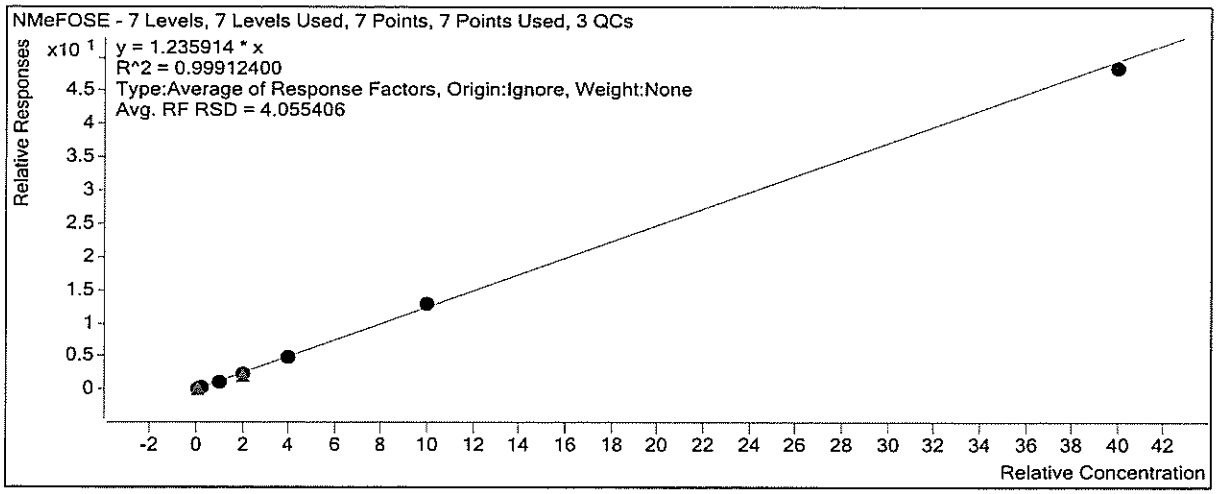
Extracted ISTD *MPFDoA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	341140	5.0000	68227.9330
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	323975	5.0000	64794.9624
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	332542	5.0000	66508.4449
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	340226	5.0000	68045.2270
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	353651	5.0000	70730.2145
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	379258	5.0000	75851.6782
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	346218	5.0000	69243.5859

Target Compound *10:2 FTS*

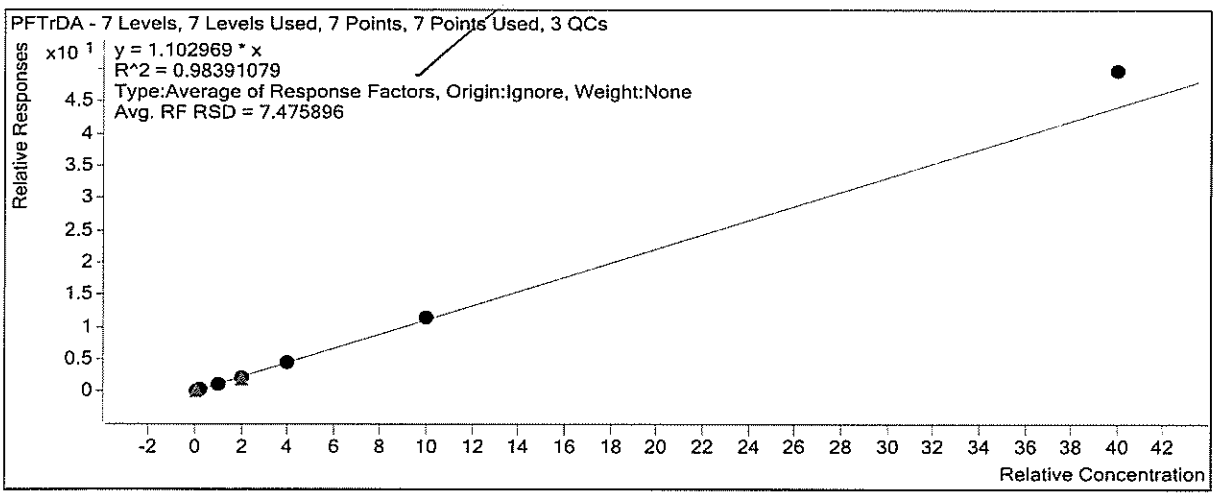
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	4930	0.4820	4.0235
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	11826	1.2050	4.5891
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	47821	4.8200	4.6005

Quantitative Analysis Calibration Report



Target Compound *PFTrDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	34308	0.5000	1.0057
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	89934	1.2500	1.1104
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	362320	5.0000	1.0895
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	686102	10.0000	1.0083
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	1569376	20.0000	1.1094
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	4381808	50.0000	1.1554
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	17201130	200.0000	1.2421

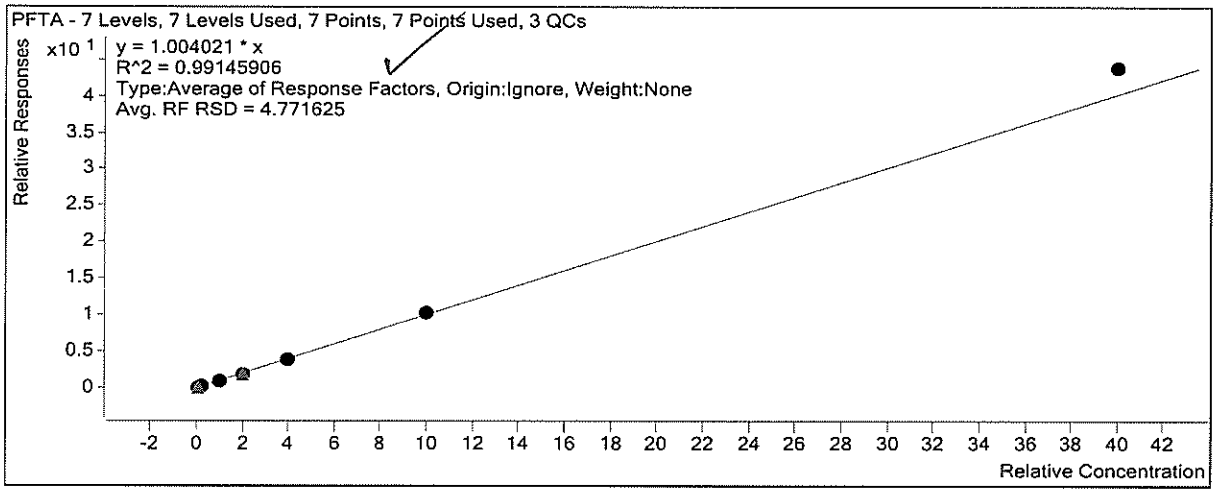


Extracted ISTD *d9-NEtFOSE*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	42883	0.5000	0.9795
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	103050	1.2500	1.0140
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	417754	5.0000	0.9876
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	800476	10.0000	0.9394
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	1875611	20.0000	0.9895
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	5215377	50.0000	1.0248
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	20649084	200.0000	1.0934



Extracted ISTD *M2PFTA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	437805	5.0000	87560.9448
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	406522	5.0000	81304.4164
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	423011	5.0000	84602.2899
D:\MassHunter\Data\2210803ACAL\2210803A_05.d	Calibration	4	☑	426044	5.0000	85208.8689
D:\MassHunter\Data\2210803ACAL\2210803A_06.d	Calibration	5	☑	473864	5.0000	94772.8234
D:\MassHunter\Data\2210803ACAL\2210803A_07.d	Calibration	6	☑	508935	5.0000	101787.0683
D:\MassHunter\Data\2210803ACAL\2210803A_08.d	Calibration	7	☑	472133	5.0000	94426.6079

Target Compound *PFHxDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210803ACAL\2210803A_02.d	Calibration	1	☑	64426	0.5000	9.0856
D:\MassHunter\Data\2210803ACAL\2210803A_03.d	Calibration	2	☑	137326	1.2500	9.3319
D:\MassHunter\Data\2210803ACAL\2210803A_04.d	Calibration	3	☑	524363	5.0000	8.5832

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/04/2021 15:37	Lab File ID:	2210804A_17.d
Analytical Method:		Analytical Batch:	717959

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	9080	95	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9290	97	70	130	
NEtFOSAA	ng/L	10000	8860	89	70	130	
NMeFOSAA	ng/L	10000	9160	92	70	130	
Perfluorobutanoic acid	ng/L	10000	9390	94	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8250	93	70	130	
Perfluorodecanoic acid	ng/L	10000	9340	93	70	130	
Perfluorododecanoic acid	ng/L	10000	9260	93	70	130	
Perfluoroheptanoic acid	ng/L	10000	9040	90	70	130	
Perfluorohexanoic acid	ng/L	10000	9360	94	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8510	93	70	130	
Perfluorononanoic acid	ng/L	10000	9120	91	70	130	
Perfluorooctanoic acid	ng/L	10000	9020	90	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8520	92	70	130	
Perfluoropentanoic acid	ng/L	10000	9120	91	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9180	92	70	130	
Perfluorotridecanoic acid	ng/L	10000	9300	93	70	130	
Perfluoroundecanoic acid	ng/L	10000	9080	91	70	130	

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/04/2021 18:32	Lab File ID:	2210804A_29.d
Analytical Method:		Analytical Batch:	717959

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	9510	9100	96	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9320	97	70	130	
NEtFOSAA	ng/L	10000	9130	91	70	130	
NMeFOSAA	ng/L	10000	9970	100	70	130	
Perfluorobutanoic acid	ng/L	10000	9370	94	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8170	92	70	130	
Perfluorodecanoic acid	ng/L	10000	9270	93	70	130	
Perfluorododecanoic acid	ng/L	10000	9050	91	70	130	
Perfluoroheptanoic acid	ng/L	10000	9020	90	70	130	
Perfluorohexanoic acid	ng/L	10000	9330	93	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8530	93	70	130	
Perfluorononanoic acid	ng/L	10000	9170	92	70	130	
Perfluorooctanoic acid	ng/L	10000	9040	90	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8430	91	70	130	
Perfluoropentanoic acid	ng/L	10000	9170	92	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9000	90	70	130	
Perfluorotridecanoic acid	ng/L	10000	8920	89	70	130	
Perfluoroundecanoic acid	ng/L	10000	9320	93	70	130	

FORM 7E - ORG

8I

INTERNAL STANDARD AREA SUMMARY

Report No:	221072807	Standard ID:	1450 (ISC)
Analyst:	RXJ	Instrument ID:	QQQ4
Analysis Date:	08/04/21 11:13	Lab File ID:	2210804A_03.d
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	717959

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		1276276		890091		1094849		208307	
CLIENT SAMPLE ID	*LAB SAMP ID*		#		#		#		#
CS-ERB-03	22107280716	964576		624450		772464		160303	
CS-FRB-01	22107280717	976373		612302		762112		157367	
CS-MW001S-GW	22107280718	739086		498993		614991		125973	
CS-MW001S-GW-D	22107280719	784328		521679		639049		130512	
CS-MW001D-GW	22107280720	940930		625157		779217		159148	
MB2220286	2220286	874930		577893		711171		147297	
LCS2220287	2220287	833631		554746		682465		140594	
LCSD2220288	2220288	779347		526922		652038		133091	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

LC-QQQ Instrument Run Log

Agilent

Instrument: QQQ 3
Instrument Batch: 2210804D.batch.bin
Current ICAL Batch: 2210804DCAL
ICAL Std (ID/Exp): 016-100-9 11/17/21
ICV Std (ID/Exp): 019-9-2 2/2/22

LIMS Batch (HBN): 718007
20mM NH4OAc (ID/Exp): 019-10-2 8/6/21
Methanol (ID/Exp): 2130465 6/10/25
EIS Mix (ID/Exp): 019-2-2 1/19/22
IIS Mix (ID/Exp): 019-1-4 1/18/22

Acquisition time	Data File	Name	Type	Dilution	Comment
08/04/21 22:37:31	2210804D_1.d	1201	Cal	1	ADA,QQQ3;ICAL
08/04/21 22:52:24	2210804D_2.d	1202	Cal	1	ADA,QQQ3;ICAL
08/04/21 23:07:00	2210804D_3.d	1203	Cal	1	ADA,QQQ3;ICAL
08/04/21 23:21:35	2210804D_4.d	1204	Cal	1	ADA,QQQ3;ICAL
08/04/21 23:36:15	2210804D_5.d	1205	Cal	1	ADA,QQQ3;ICAL
08/04/21 23:50:51	2210804D_6.d	1206	Cal	1	ADA,QQQ3;ICAL
08/05/21 00:05:27	2210804D_7.d	1207	Cal	1	ADA,QQQ3;ICAL
08/05/21 00:20:04	2210804D_8.d	1500	Blank	1	ADA,QQQ3;ICAL
08/05/21 00:34:41	2210804D_9.d	1600	Sample	1	ADA,QQQ3;ICAL
08/05/21 00:49:18	2210804D_10.d	1450	QC	1	ADA,QQQ3;ICAL
08/05/21 01:03:53	2210804D_11.d	2220588	Sample	1	ADA,QQQ3;717471
08/05/21 01:18:30	2210804D_12.d	2220589	Sample	1	ADA,QQQ3;717471
08/05/21 01:33:06	2210804D_13.d	2220590	Sample	1	ADA,QQQ3;717471
08/05/21 01:47:42	2210804D_14.d	22107238130	Sample	1	ADA,QQQ3;717471
08/05/21 02:02:21	2210804D_15.d	22107238131	Sample	5	ADA,QQQ3;717471
08/05/21 02:16:57	2210804D_16.d	22107238132	Sample	5	ADA,QQQ3;717471
08/05/21 02:31:36	2210804D_17.d	22107238133	Sample	5	ADA,QQQ3;717471
08/05/21 02:46:12	2210804D_18.d	22107238134	Sample	1	ADA,QQQ3;717471
08/05/21 03:00:49	2210804D_19.d	22107238135	Sample	1	ADA,QQQ3;717471
08/05/21 03:15:26	2210804D_20.d	22107280701	Sample	1	ADA,QQQ3;717471
08/05/21 03:30:02	2210804D_21.d	22107280703	Sample	1	ADA,QQQ3;717471
08/05/21 03:44:38	2210804D_22.d	22107280704	Sample	1	ADA,QQQ3;717471
08/05/21 03:59:14	2210804D_23.d	22107280705	Sample	1	ADA,QQQ3;717471
08/05/21 04:13:50	2210804D_24.d	22107280706	Sample	10	ADA,QQQ3;717471;IIS double spiked
08/05/21 04:28:29	2210804D_25.d	22107280707	Sample	1	ADA,QQQ3;717471
08/05/21 04:43:05	2210804D_26.d	1400	QC	1	ADA,QQQ3;CCV
08/05/21 04:57:41	2210804D_27.d	22107280710	Sample	1	ADA,QQQ3;717471
08/05/21 05:12:18	2210804D_28.d	22107280711	Sample	1	ADA,QQQ3;717471
08/05/21 05:26:55	2210804D_29.d	22107280712	Sample	1	ADA,QQQ3;717471
08/05/21 05:41:32	2210804D_30.d	22107280713	Sample	1	ADA,QQQ3;717471
08/05/21 05:56:07	2210804D_31.d	22107280714	Sample	1	ADA,QQQ3;717471
08/05/21 06:10:43	2210804D_32.d	22107280722	Sample	1	ADA,QQQ3;717471
08/05/21 06:25:19	2210804D_33.d	22107280723	Sample	1	ADA,QQQ3;717471
08/05/21 06:39:56	2210804D_34.d	22107280724	Sample	1	ADA,QQQ3;717471
08/05/21 06:54:34	2210804D_35.d	22107283801	Sample	1	ADA,QQQ3;717471
08/05/21 07:09:11	2210804D_36.d	22107238131	Sample	1	ADA,QQQ3;717471
08/05/21 07:23:48	2210804D_37.d	22107238132	Sample	1	ADA,QQQ3;717471
08/05/21 07:38:24	2210804D_38.d	22107238133	Sample	1	ADA,QQQ3;717471
08/05/21 07:53:01	2210804D_39.d	22107280706	Sample	1	ADA,QQQ3;717471
08/05/21 08:07:38	2210804D_40.d	1400	QC	1	ADA,QQQ3;CCV

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	221072807	Instrument ID:	QQQ3
Analysis Date:	08/05/2021 00:49	Lab File ID:	2210804D_10.d
Analytical Method:		Analytical Batch:	718007

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	3.81	3.75	99	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	3.84	3.61	94	70	130	
NEtFOSAA	ng/L	4.00	4.03	101	70	130	
NMeFOSAA	ng/L	4.00	4.50	112	70	130	
Perfluorobutanoic acid	ng/L	4.00	3.86	97	70	130	
Perfluorobutanesulfonic acid	ng/L	3.55	3.48	98	70	130	
Perfluorodecanoic acid	ng/L	4.00	3.95	99	70	130	
Perfluorododecanoic acid	ng/L	4.00	3.90	97	70	130	
Perfluoroheptanoic acid	ng/L	4.00	3.78	94	70	130	
Perfluorohexanoic acid	ng/L	4.00	4.02	100	70	130	
Perfluorohexanesulfonic acid	ng/L	3.66	3.64	100	70	130	
Perfluorononanoic acid	ng/L	4.00	3.82	95	70	130	
Perfluorooctanoic acid	ng/L	4.00	4.23	106	70	130	
Perfluorooctanesulfonic acid	ng/L	3.71	3.66	99	70	130	
Perfluoropentanoic acid	ng/L	4.00	3.85	96	70	130	
Perfluorotetradecanoic acid	ng/L	4.00	4.09	102	70	130	
Perfluorotridecanoic acid	ng/L	4.00	3.97	99	70	130	
Perfluoroundecanoic acid	ng/L	4.00	3.93	98	70	130	

FORM 7S - ORG

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ3
Analysis Date:	08/05/2021 00:34	Lab File ID:	2210804D_9.d
Analytical Method:		Analytical Batch:	718007

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	10000	8760	88	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	10100	8200	81	70	130	
NEtFOSAA	ng/L	10000	7820	78	70	130	
NMeFOSAA	ng/L	10000	8650	87	70	130	
Perfluorobutanoic acid	ng/L	10000	7910	79	70	130	
Perfluorobutanesulfonic acid	ng/L	10000	7860	79	70	130	
Perfluorodecanoic acid	ng/L	10000	8260	83	70	130	
Perfluorododecanoic acid	ng/L	10000	7750	78	70	130	
Perfluoroheptanoic acid	ng/L	10000	8160	82	70	130	
Perfluorohexanoic acid	ng/L	10100	8130	80	70	130	
Perfluorohexanesulfonic acid	ng/L	10000	7890	79	70	130	
Perfluorononanoic acid	ng/L	10000	8360	84	70	130	
Perfluorooctanoic acid	ng/L	10100	7820	77	70	130	
Perfluorooctanesulfonic acid	ng/L	10000	7030	70	70	130	
Perfluoropentanoic acid	ng/L	10100	8110	80	70	130	
Perfluorotetradecanoic acid	ng/L	10000	8430	84	70	130	
Perfluorotridecanoic acid	ng/L	10000	7290	73	70	130	
Perfluoroundecanoic acid	ng/L	10000	7780	78	70	130	

4I

ORGANICS INSTRUMENT BLANK

Report No:	221072807	Instrument ID:	QQQ3
Analysis Date:	08/05/2021 00:20	Lab File ID:	2210804D_8.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	718007

ANALYTE	*UNITS*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*	*#*
6:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.50	3.00	4.00	
8:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.06	3.00	4.00	
NEtFOSAA	ng/L	4.00	U	1.58	4.00	8.00	
NMeFOSAA	ng/L	4.00	U	0.90	4.00	8.00	
Perfluorobutanesulfonic acid	ng/L	2.00	U	0.62	2.00	4.00	
Perfluorobutanoic acid	ng/L	3.50	U	1.52	3.50	4.00	
Perfluorodecanoic acid	ng/L	3.00	U	1.44	3.00	4.00	
Perfluorododecanoic acid	ng/L	3.00	U	1.30	3.00	4.00	
Perfluoroheptanoic acid	ng/L	3.00	U	1.16	3.00	4.00	
Perfluorohexanesulfonic acid	ng/L	3.00	U	1.24	3.00	4.00	
Perfluorohexanoic acid	ng/L	2.00	U	0.94	2.00	4.00	
Perfluorononanoic acid	ng/L	2.00	U	0.98	2.00	4.00	
Perfluorooctanesulfonic acid	ng/L	2.00	U	0.76	2.00	4.00	
Perfluorooctanoic acid	ng/L	2.00	U	0.84	2.00	4.00	
Perfluoropentanoic acid	ng/L	2.00	U	0.88	2.00	4.00	
Perfluorotetradecanoic acid	ng/L	3.00	U	1.14	3.00	4.00	
Perfluorotridecanoic acid	ng/L	3.00	U	1.23	3.00	4.00	
Perfluoroundecanoic acid	ng/L	3.00	U	1.24	3.00	4.00	

* - Result greater than 1/2 LOQ

Quantitative Analysis Calibration Report

Batch Data Path	C:\MassHunter\Data\QQQ3\2210804DCAL\QuantResults\2210804D.batch.bin		
Analysis Time	8/7/2021 3:12 PM	**Analyst Name**	GCAL\lcms
Report Time	8/11/2021 1:09 PM	**Reporter Name**	GCAL\lcms
Last Calib Update	8/5/2021 9:17 AM	**Batch State**	Processed

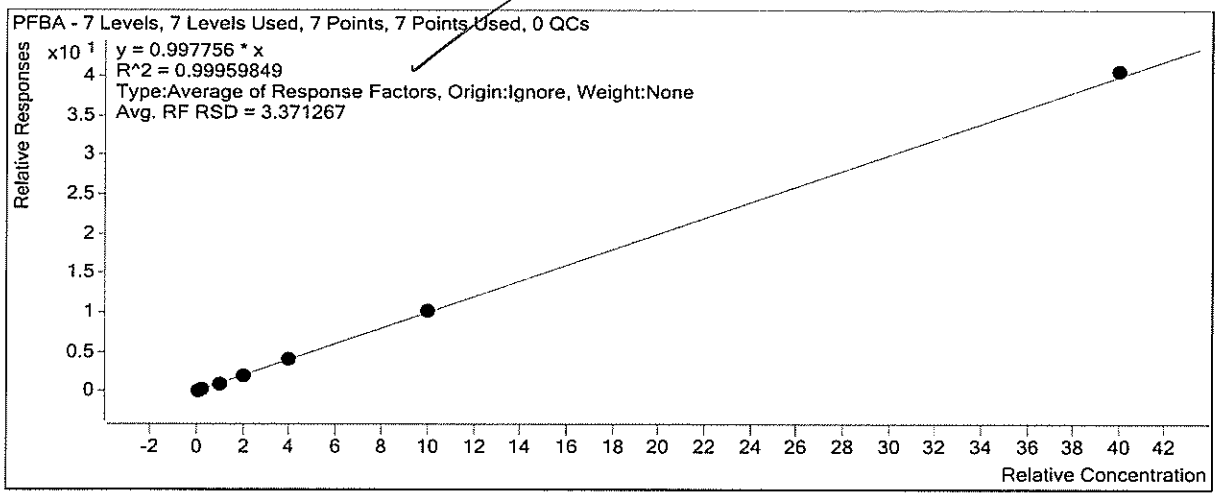
Calibration Info

Extracted ISTD *MPFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	97128	5.0000	19425.5465
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	116341	5.0000	23268.2800
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	107175	5.0000	21435.0397
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	115259	5.0000	23051.7542
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	110975	5.0000	22194.9285
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	112276	5.0000	22455.2017
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	110486	5.0000	22097.1333

Target Compound *PFBA*

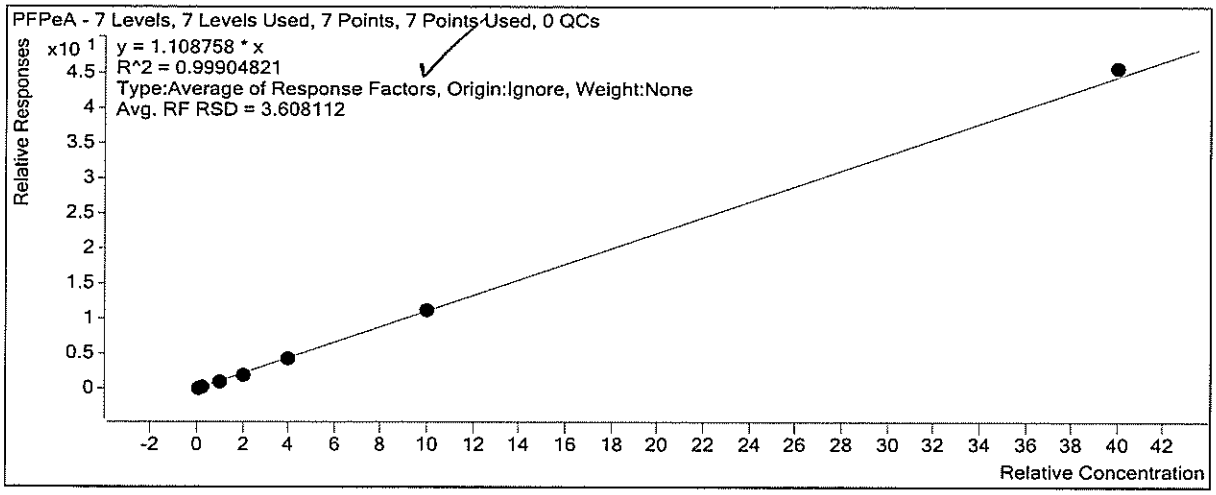
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	9305	0.5000	0.9580
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	29876	1.2500	1.0272
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	108150	5.0000	1.0091
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	216990	10.0000	0.9413
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	451421	20.0000	1.0169
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	1141861	50.0000	1.0170
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	4484624	200.0000	1.0148



Target Compound *PFMPA*

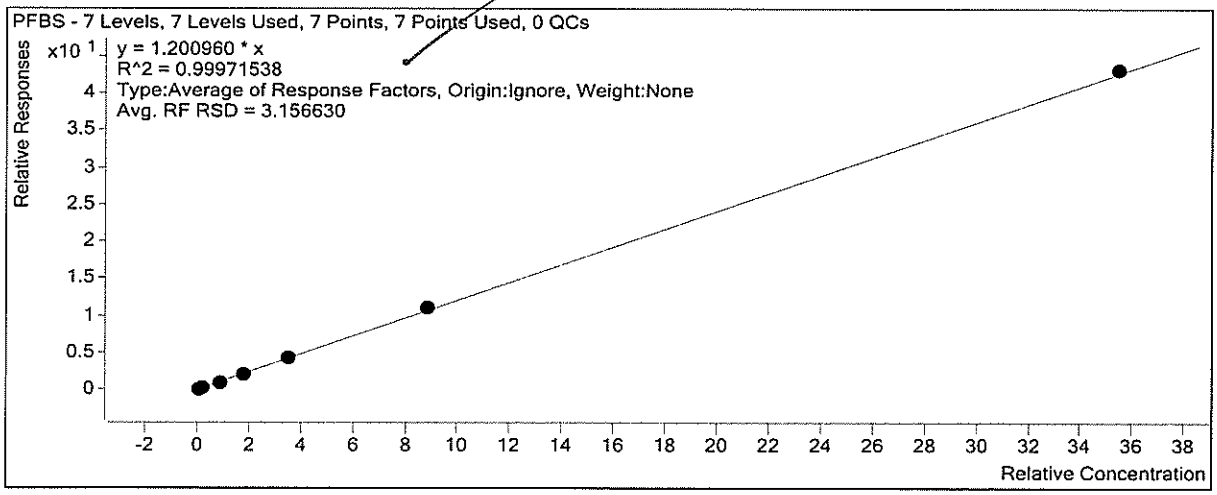
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	1614	0.5000	0.1506
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	5095	1.2500	0.1584
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	18318	5.0000	0.1531
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	36506	10.0000	0.1435

Quantitative Analysis Calibration Report



Target Compound *PFBS*

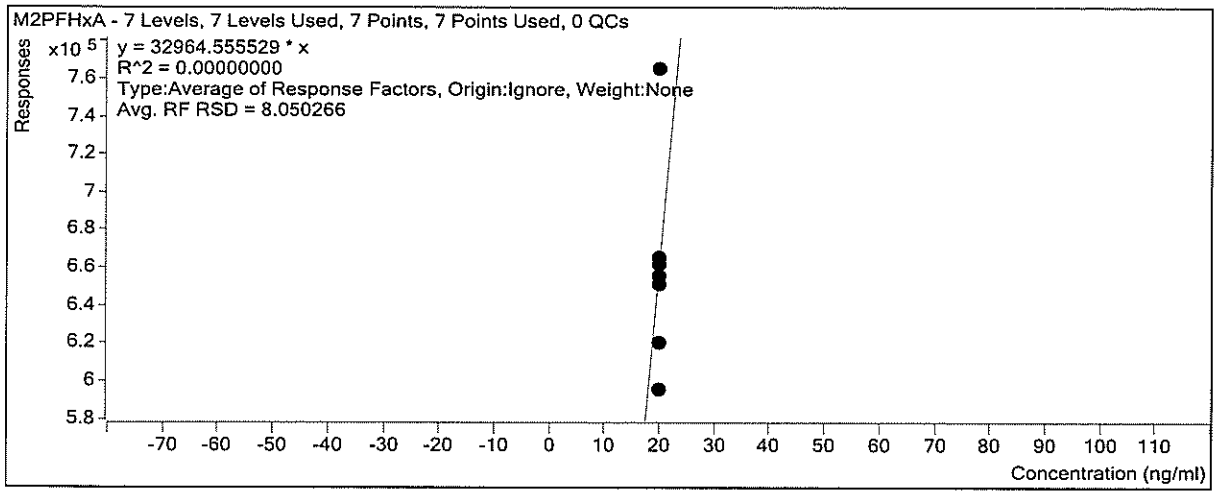
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	3609	0.4435	1.1766
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	11317	1.1088	1.2264
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	40955	4.4350	1.1970
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	83182	8.8700	1.1302
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	166543	17.7400	1.2171
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	419308	44.3500	1.2445
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	1535696	177.4000	1.2149



Extracted ISTD *M3PFBS*

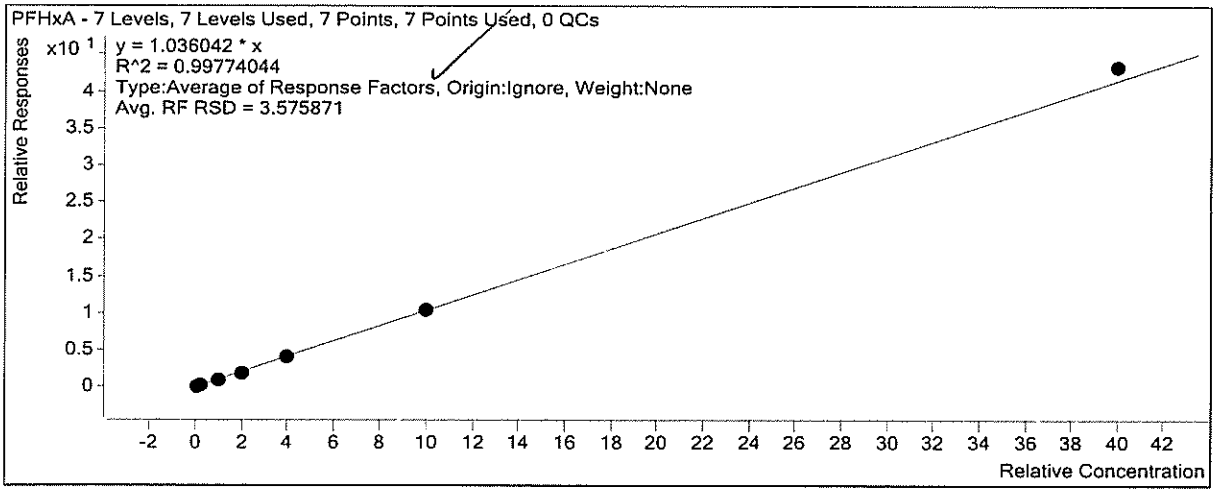
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	34585	5.0000	6917.0702
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S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	38574	5.0000	7714.8113
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	41489	5.0000	8297.8713
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	38568	5.0000	7713.6404

Quantitative Analysis Calibration Report



Target Compound *PFHxA*

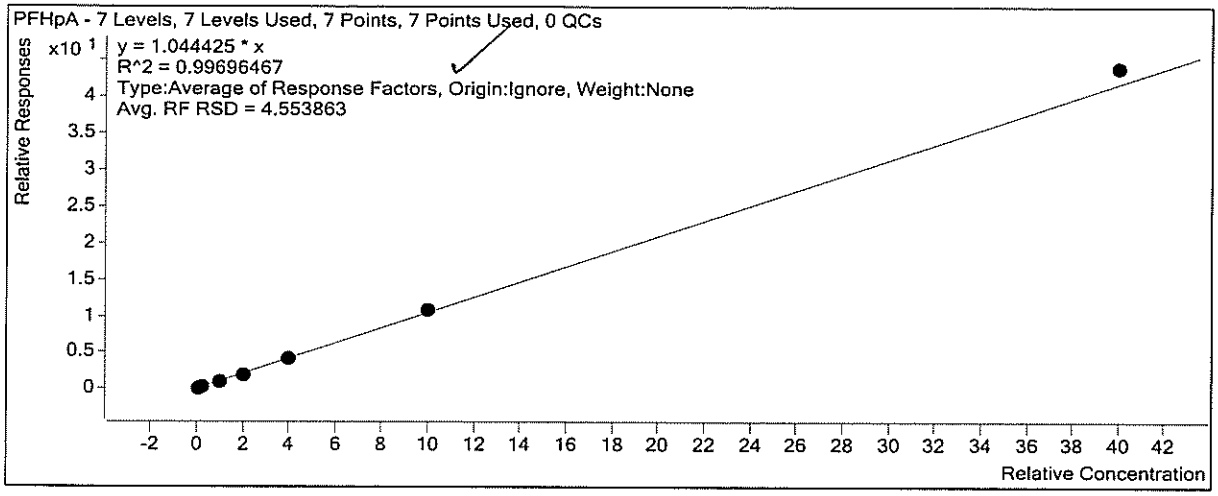
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
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S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	46241	1.2500	1.0653
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	166165	5.0000	1.0424
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	334724	10.0000	0.9736
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	688595	20.0000	1.0392
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	1750248	50.0000	1.0492
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	6745830	200.0000	1.0813



Target Compound *PFPeS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	4195	0.4705	1.2891
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	12611	1.1763	1.2883
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	46552	4.7050	1.2825
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	92454	9.4100	1.1840
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Quantitative Analysis Calibration Report



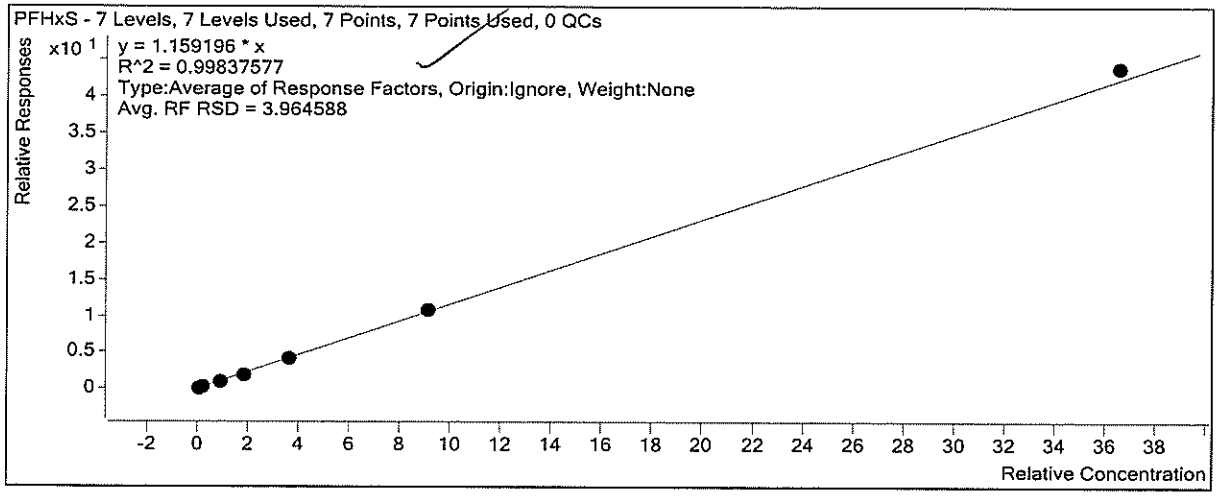
Extracted ISTD *M3PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
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S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	36317	5.0000	7263.4709
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	34438	5.0000	6887.6848
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	36309	5.0000	7261.8673
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	34470	5.0000	6893.9753
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	33412	5.0000	6682.3365
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	31302	5.0000	6260.3351

Target Compound *PFHxS*

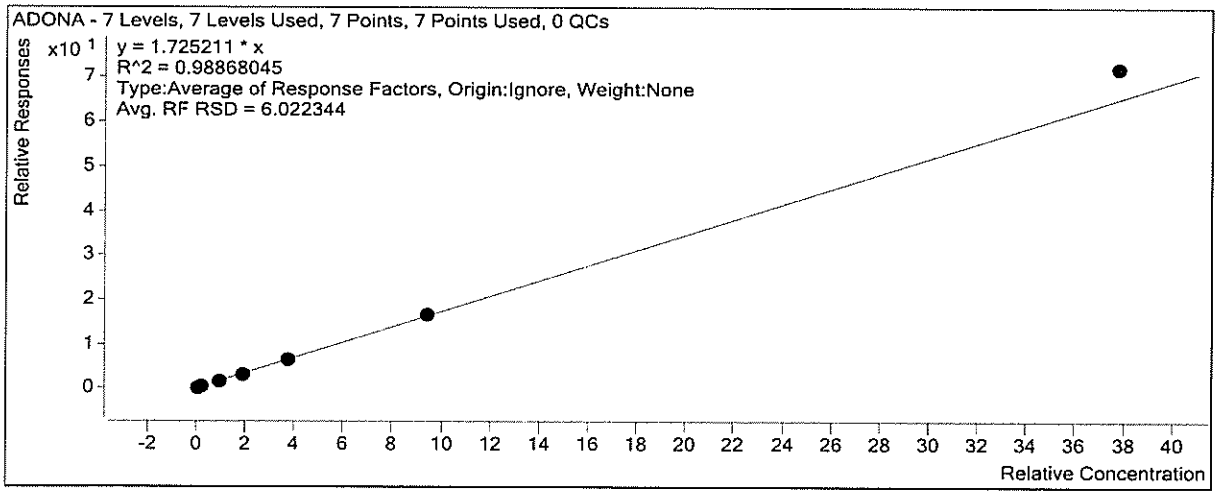
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	3205	0.4570	1.1314
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	9990	1.1425	1.2039
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	35874	4.5700	1.1397
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	71507	9.1400	1.0773
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	147665	18.2800	1.1717
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	363155	45.7000	1.1892
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	1374629	182.8000	1.2012

Quantitative Analysis Calibration Report



Target Compound *ADONA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	26170	0.4725	1.6004
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	85291	1.1813	1.7734
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	302957	4.7250	1.6904
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	616456	9.4500	1.6135
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	1265439	18.9000	1.7435
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	3196394	47.2500	1.7506
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	12518946	189.0000	1.9047



Extracted ISTD *M2 6:2 FTS*

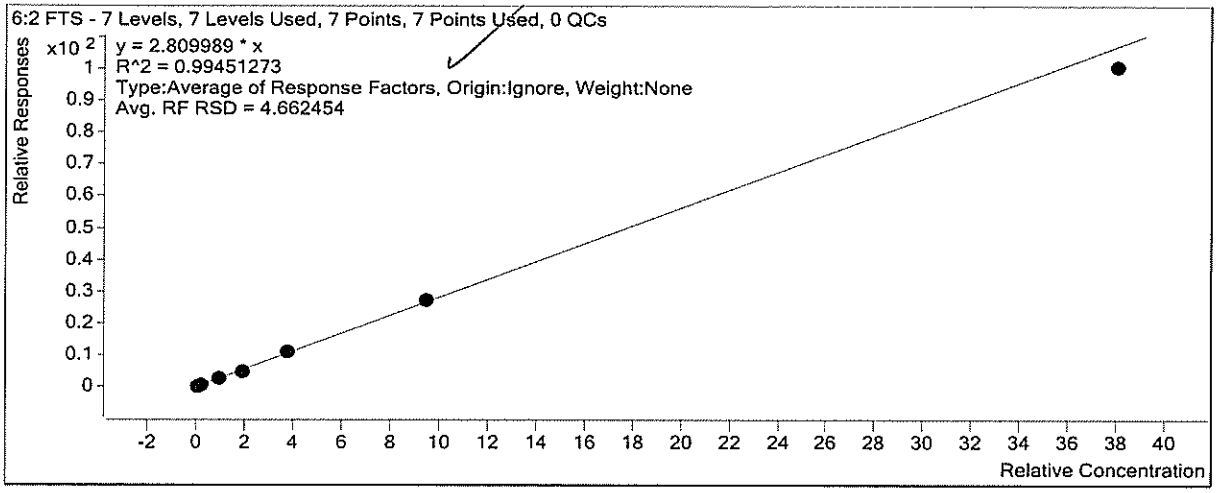
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	11858	5.0000	2371.5078
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	13463	5.0000	2692.5507
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	12895	5.0000	2579.0000
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	14259	5.0000	2851.8033
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	13027	5.0000	2605.4228

Quantitative Analysis Calibration Report

S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	12379	5.0000	2475.8393
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	10854	5.0000	2170.8313

Target Compound *6:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	3217	0.4755	2.8524
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	9417	1.1888	2.9418
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	35358	4.7550	2.8833
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	70728	9.5100	2.6079
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	142772	19.0200	2.8811
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	337303	47.5500	2.8651
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	1089309	190.2000	2.6382



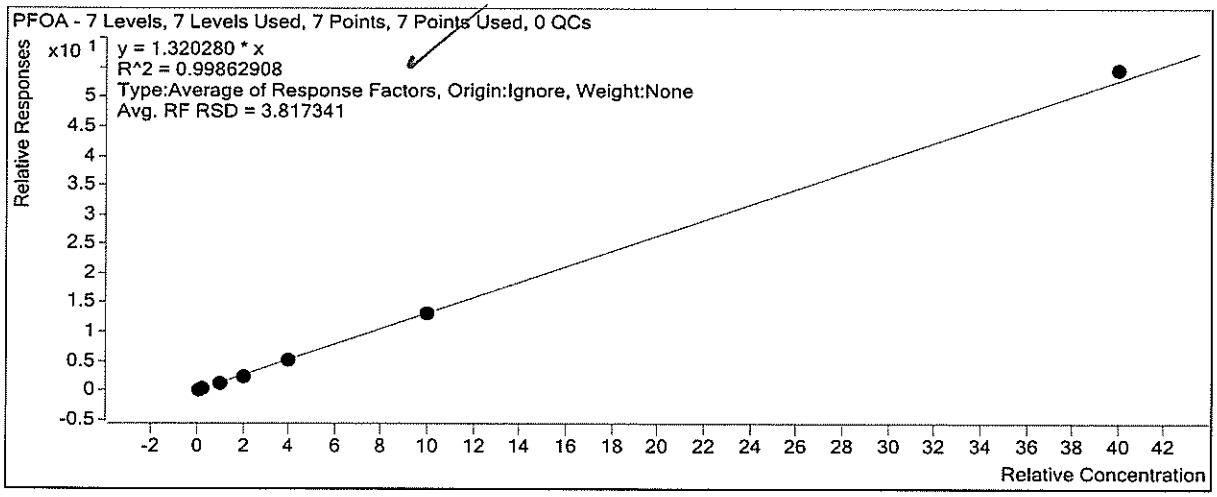
Extracted ISTD *M8PFOA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	173039	5.0000	34607.7963
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	203569	5.0000	40713.8560
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	189658	5.0000	37931.5285
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	202144	5.0000	40428.8342
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	192008	5.0000	38401.6700
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	193211	5.0000	38642.1855
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	173884	5.0000	34776.8133

Instrument ISTD *MPFOA*

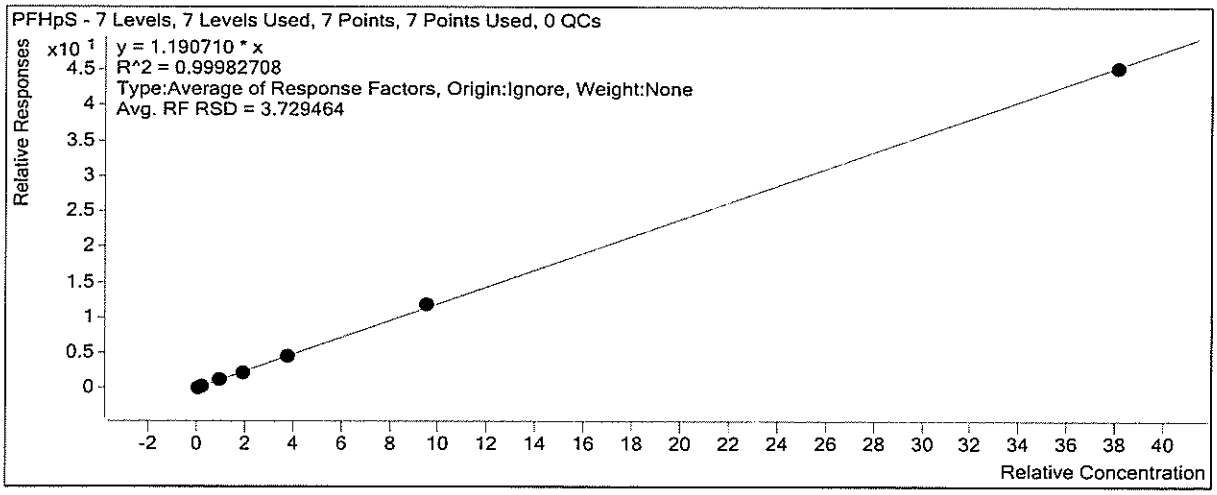
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	994759	25.0000	39790.3593
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	1235855	25.0000	49434.1931
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	1005797	25.0000	40231.8843
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	1085805	25.0000	43432.2196
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	1087683	25.0000	43507.3102
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	1043457	25.0000	41738.2735
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	919648	25.0000	36785.9068

S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	2541243	50.0000	1.3153
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	9492088	200.0000	1.3647



Target Compound *PFHpS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	3434	0.4765	1.1626
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	10654	1.1913	1.2313
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	39206	4.7650	1.1946
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	76792	9.5300	1.1096
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	159320	19.0600	1.2125
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	394425	47.6500	1.2387
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	1414794	190.6000	1.1857



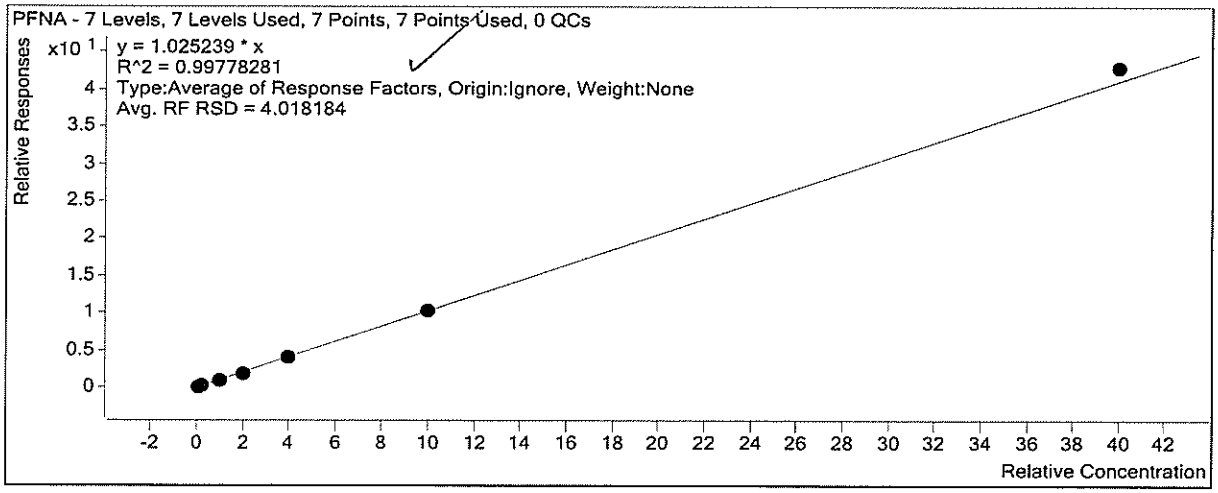
Extracted ISTD *M9PFNA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	191204	5.0000	38240.7510
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	226842	5.0000	45368.3441
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	213540	5.0000	42707.9701

S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	227137	5.0000	45427.3285
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	216354	5.0000	43270.8718
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	211588	5.0000	42317.5703
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	189092	5.0000	37818.4032

Target Compound *PFNA*

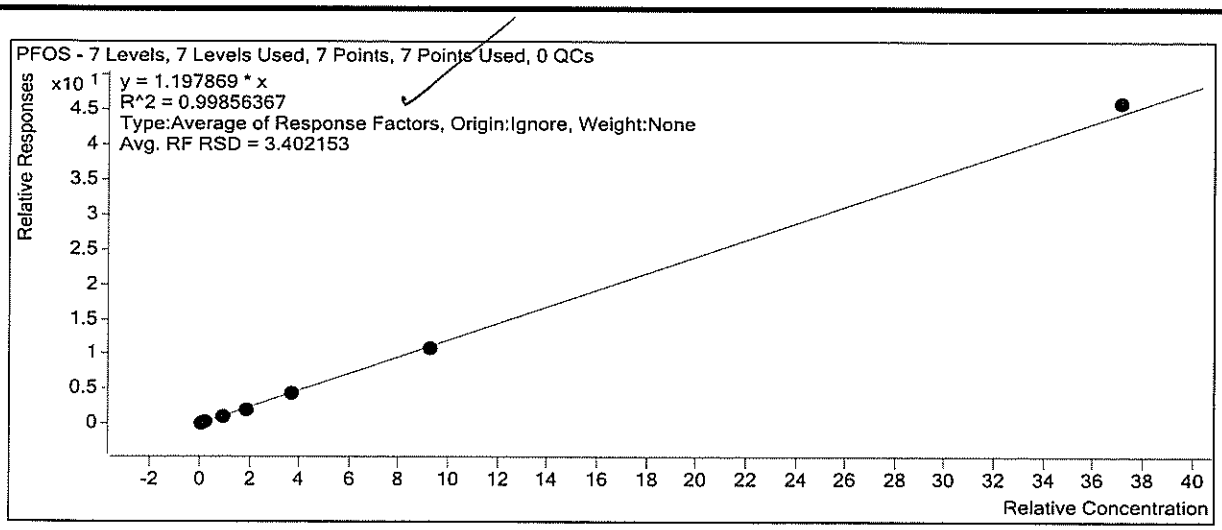
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	19225	0.5000	1.0055
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	60679	1.2500	1.0700
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	216194	5.0000	1.0124
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	432065	10.0000	0.9511
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	896138	20.0000	1.0355
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	2184779	50.0000	1.0326
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	8090382	200.0000	1.0696



Target Compound *PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	3165	0.4640	1.2093
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	9614	1.1600	1.2358
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	35583	4.6400	1.2216
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	69090	9.2800	1.1290
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	138175	18.5600	1.1911
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	344302	46.4000	1.1602
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	1260135	185.6000	1.2382

Quantitative Analysis Calibration Report



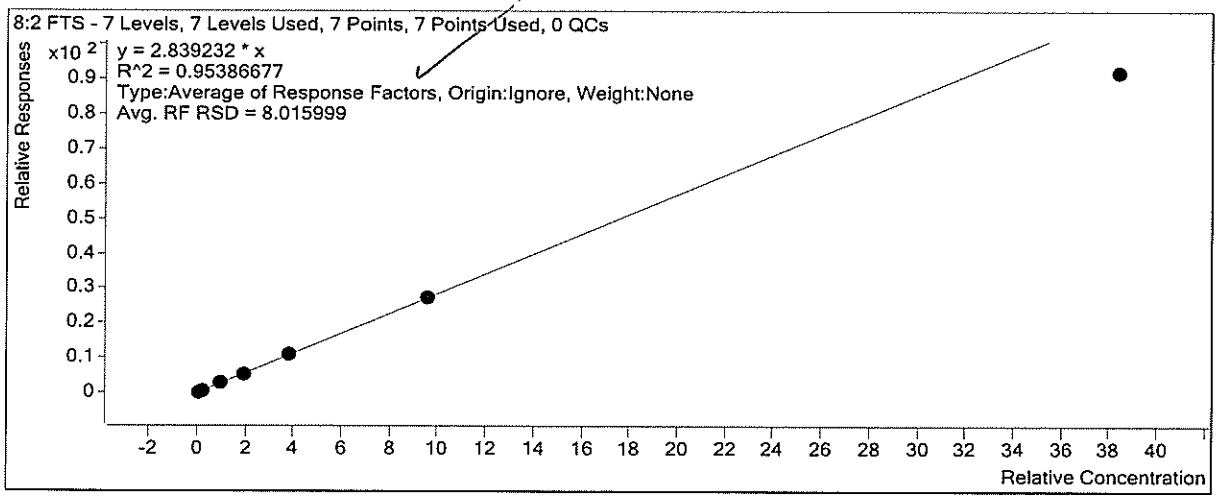
Extracted ISTD *M8PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	28206	5.0000	5641.2019
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	33533	5.0000	6706.6852
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	31388	5.0000	6277.6277
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	32972	5.0000	6594.3866
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	31253	5.0000	6250.5366
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	31979	5.0000	6395.7048
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	27418	5.0000	5483.5811

Instrument ISTD *M4PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	123978	20.0000	6198.9243
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	157918	20.0000	7895.8970
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	135378	20.0000	6768.8786
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	135189	20.0000	6759.4693
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	134109	20.0000	6705.4353
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	133999	20.0000	6699.9558
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	115155	20.0000	5757.7459

S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	224343	48.0000	2.8271
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	669559	192.0000	2.3873



Extracted ISTD *M2 8:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	8450	5.0000	1689.9531
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	9428	5.0000	1885.6194
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	9027	5.0000	1805.4420
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	9566	5.0000	1913.1015
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	8893	5.0000	1778.6668
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	8266	5.0000	1653.2418
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	7304	5.0000	1460.7376

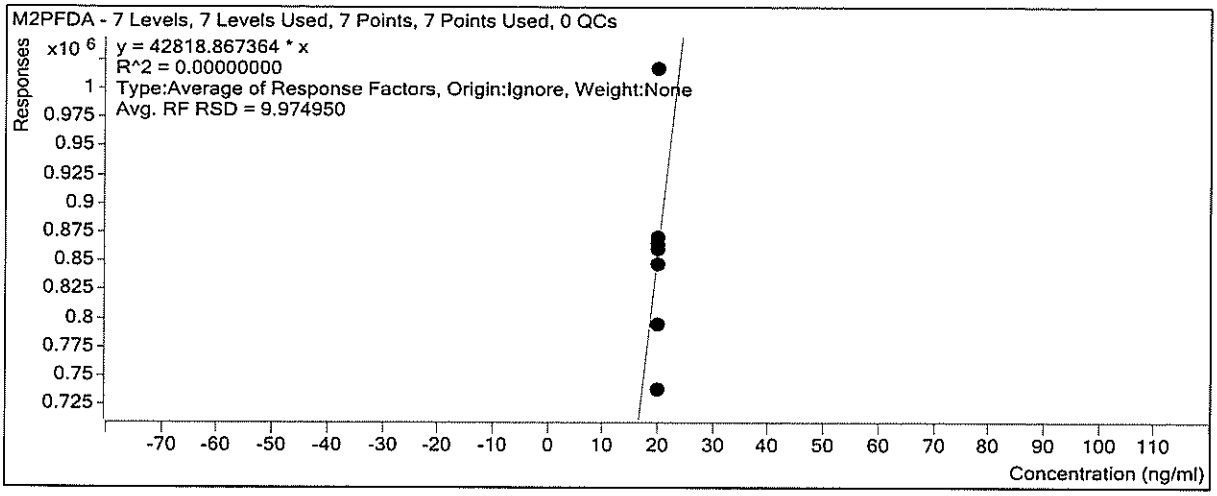
Extracted ISTD *M6PFDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	184280	5.0000	36856.0239
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	222249	5.0000	44449.8082
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	207371	5.0000	41474.2800
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	219269	5.0000	43853.7893
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	207965	5.0000	41592.9678
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	203658	5.0000	40731.6081
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	180198	5.0000	36039.5629

Instrument ISTD *M2PFDA*

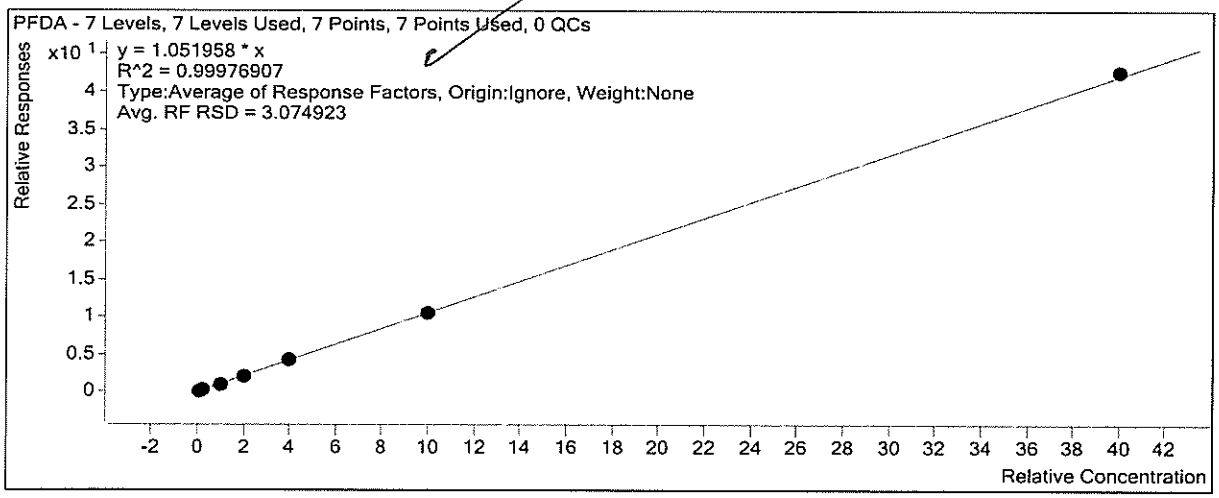
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	795461	20.0000	39773.0406
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	1017105	20.0000	50855.2571
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	865120	20.0000	43256.0189
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	870320	20.0000	43515.9843
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	860991	20.0000	43049.5432
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	846988	20.0000	42349.4092
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	738656	20.0000	36932.8183

Quantitative Analysis Calibration Report



Target Compound *PFDA*

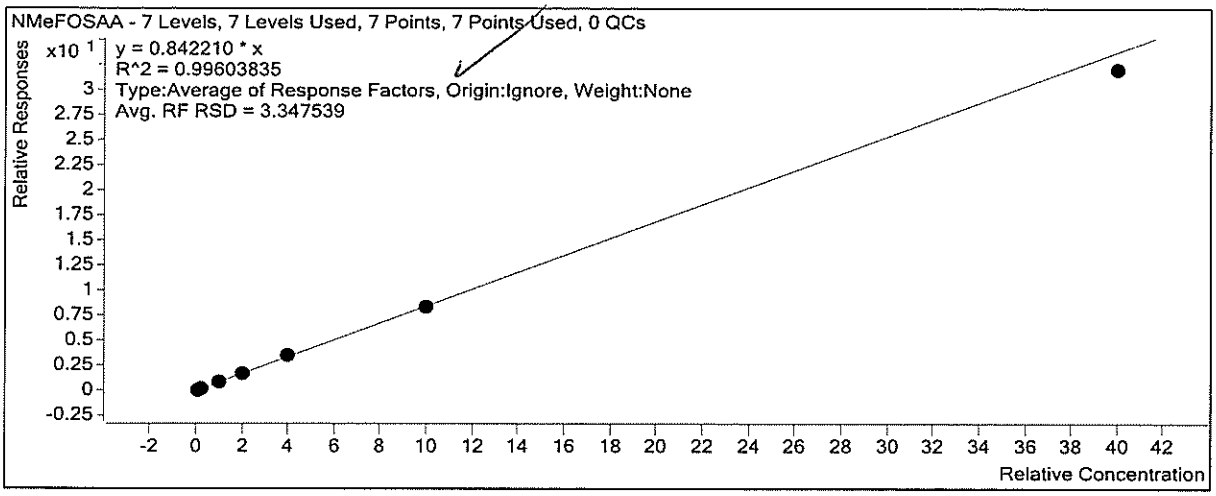
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	18977	0.5000	1.0298
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	60816	1.2500	1.0946
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	217457	5.0000	1.0486
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	436261	10.0000	0.9948
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	893422	20.0000	1.0740
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	2150869	50.0000	1.0561
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	7682073	200.0000	1.0658



Target Compound *PFNS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	2747	0.4810	1.0124
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	8915	1.2025	1.1054
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	31264	4.8100	1.0354
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	63300	9.6200	0.9978
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	126097	19.2400	1.0485

Quantitative Analysis Calibration Report



Extracted ISTD *M8FOSA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	64955	5.0000	12990.9841
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	77447	5.0000	15489.3668
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	73043	5.0000	14608.6017
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	76732	5.0000	15346.3897
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	73317	5.0000	14663.4677
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	73599	5.0000	14719.7713
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	72006	5.0000	14401.2301

Target Compound *FOSA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	6713	0.5000	1.0336
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	21203	1.2500	1.0951
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	77345	5.0000	1.0589
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	151949	10.0000	0.9901
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	309599	20.0000	1.0557
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	782269	50.0000	1.0629
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	3086475	200.0000	1.0716

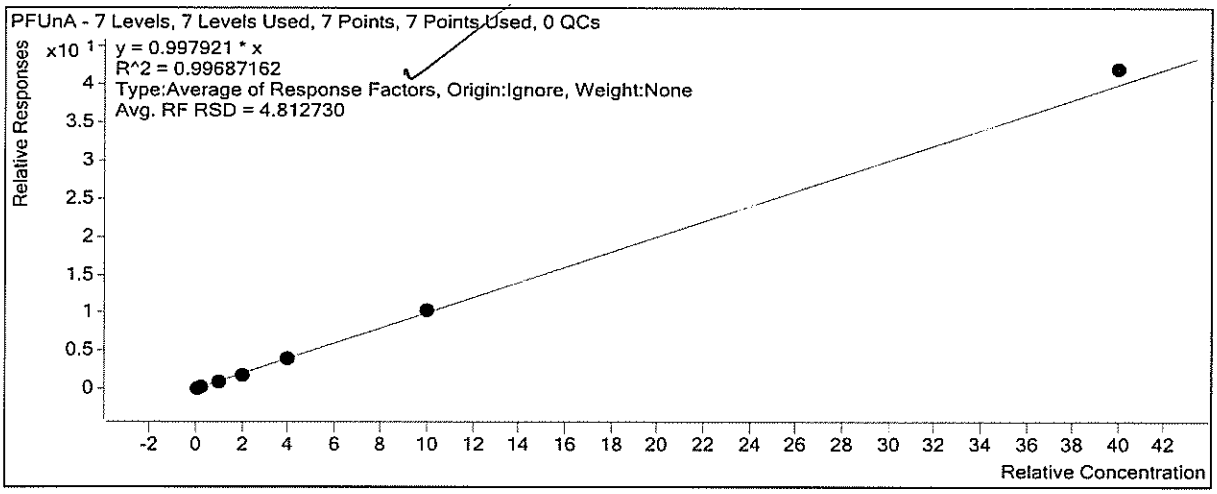
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	41798	5.0000	8359.5728
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	33841	5.0000	6768.1115

Extracted ISTD *M7PFUnA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	195470	5.0000	39093.9701
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	235551	5.0000	47110.2783
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	215967	5.0000	43193.3154
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	233133	5.0000	46626.5081
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	217260	5.0000	43452.0544
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	214069	5.0000	42813.7411
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	182847	5.0000	36569.4444

Target Compound *PFUnA*

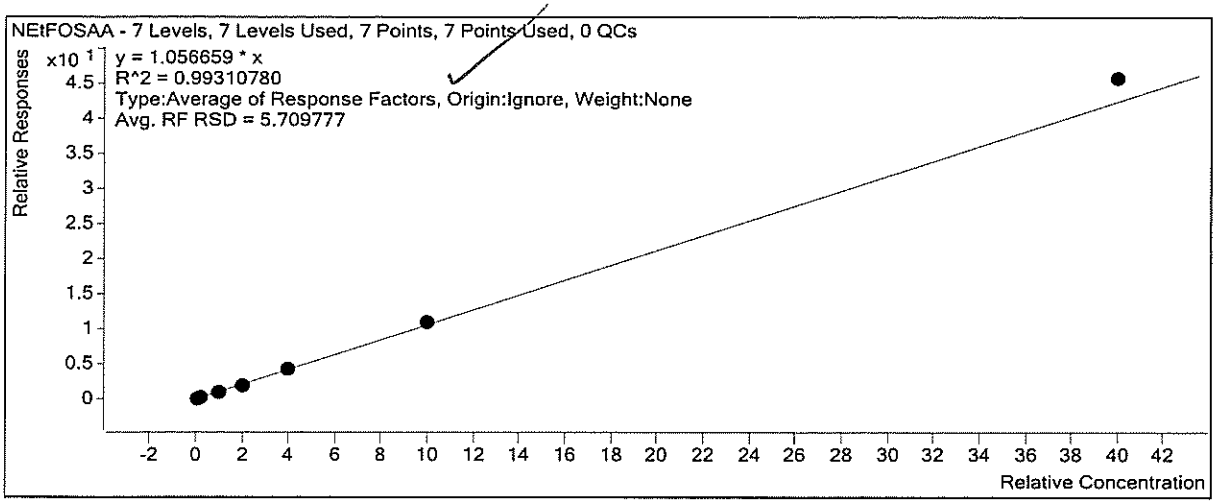
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	18636	0.5000	0.9534
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	61114	1.2500	1.0378
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	214131	5.0000	0.9915
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	427305	10.0000	0.9164
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	878882	20.0000	1.0113
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	2195699	50.0000	1.0257
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	7674237	200.0000	1.0493



Target Compound *NEtFOSAA*

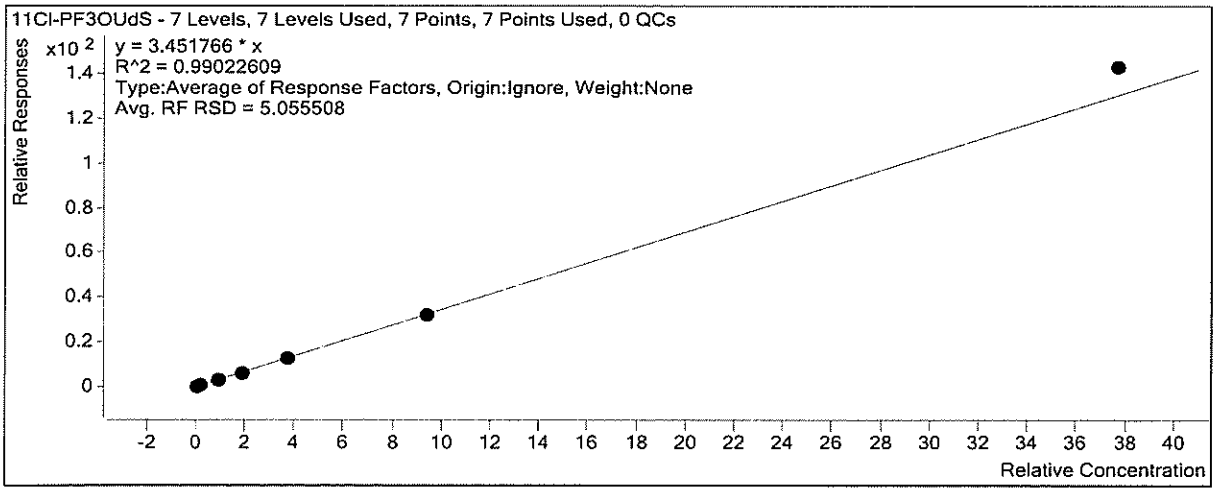
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	4118	0.5000	0.9941
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	13434	1.2500	1.0602
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	47487	5.0000	1.0481
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	94238	10.0000	0.9680
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	193939	20.0000	1.0790
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	463094	50.0000	1.1079
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	1542291	200.0000	1.1394

Quantitative Analysis Calibration Report



Target Compound *11Cl-PF3OUdS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	9302	0.4715	3.4973
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	27283	1.1788	3.4510
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	98253	4.7150	3.3195
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	200698	9.4300	3.2274
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	410394	18.8600	3.4813
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	1026249	47.1500	3.4032
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	3912171	188.6000	3.7828



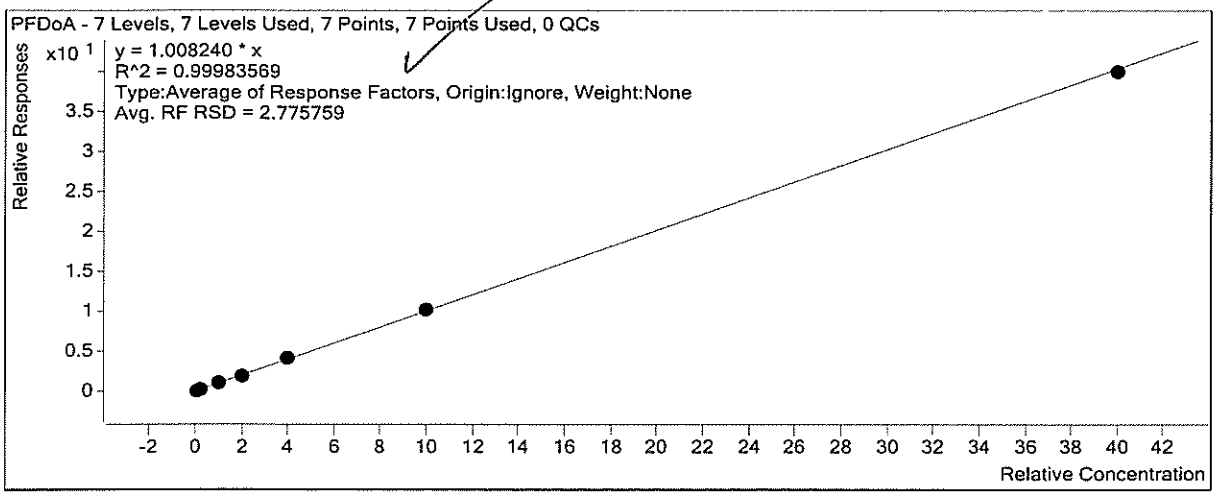
Extracted ISTD *MPFDoA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	222573	5.0000	44514.6958
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	263180	5.0000	52635.9126
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	248759	5.0000	49751.8090
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	266094	5.0000	53218.7882
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	251123	5.0000	50224.6741

S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	251542	5.0000	50308.3934
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	235617	5.0000	47123.4013

Target Compound *PFDoA*

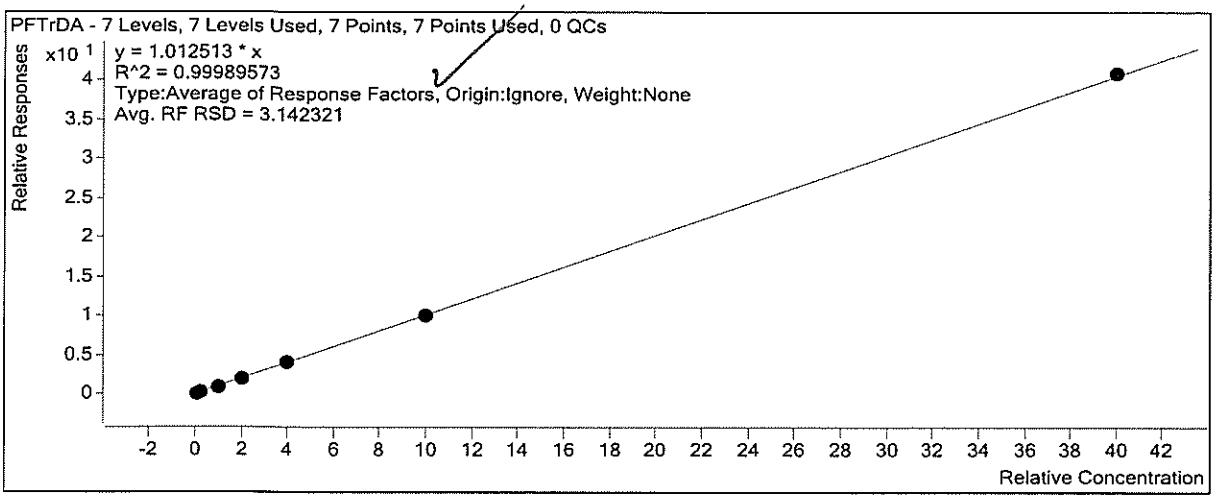
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	22118	0.5000	0.9937
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	68310	1.2500	1.0382
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	250693	5.0000	1.0078
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	509885	10.0000	0.9581
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	1035248	20.0000	1.0306
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	2591657	50.0000	1.0303
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	9414667	200.0000	0.9989



Target Compound *10:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	2366	0.4820	2.9047
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	7730	1.2050	3.4019
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	27002	4.8200	3.1028
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	55167	9.6400	2.9913
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	105833	19.2800	3.0862
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	244632	48.2000	3.0699
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☐	1190147	192.8000	4.2259

Quantitative Analysis Calibration Report



Extracted ISTD *d7-NMeFOSE*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	10890	5.0000	2178.0581
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	12376	5.0000	2475.1337
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	11631	5.0000	2326.2219
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	12417	5.0000	2483.3663
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	12007	5.0000	2401.3285
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	12851	5.0000	2570.1015
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	10980	5.0000	2195.9120

Target Compound *NMeFOSE*

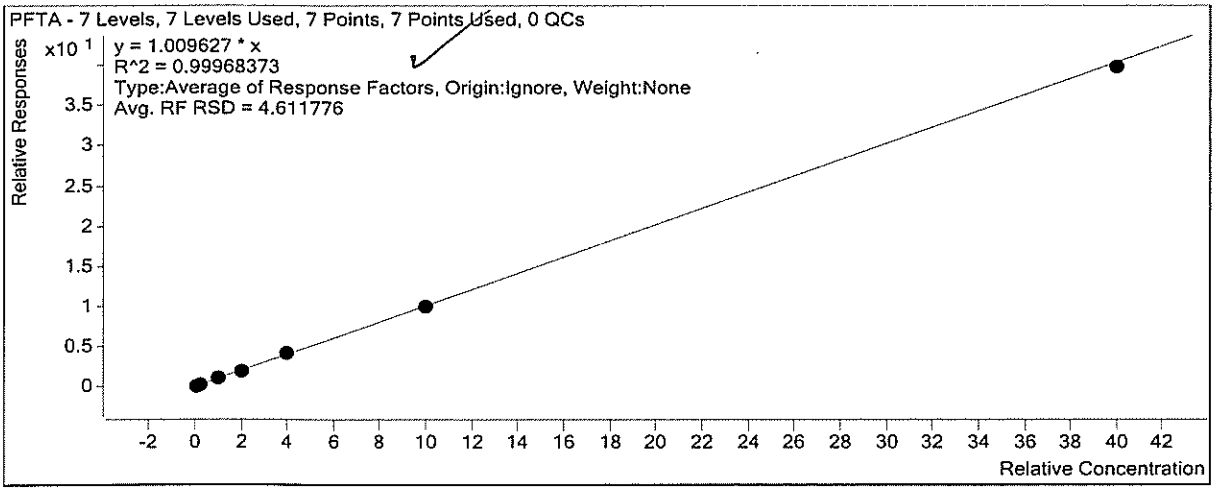
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	1347	0.5000	1.2364
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	4017	1.2500	1.2983
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	14755	5.0000	1.2685
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	29489	10.0000	1.1875
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	61271	20.0000	1.2758
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	153191	50.0000	1.1921
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	547156	200.0000	1.2459

Quantitative Analysis Calibration Report

S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	263235	5.0000	52647.0603
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	254040	5.0000	50807.9272

Target Compound *PFTA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	24531	0.5000	1.0334
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	72616	1.2500	1.0738
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	257364	5.0000	1.0110
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	514570	10.0000	0.9236
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	1070509	20.0000	1.0331
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	2625559	50.0000	0.9974
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	10111667	200.0000	0.9951



Extracted ISTD *M2PFHxDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	18031	5.0000	3606.1836
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	19951	5.0000	3990.2782
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	19853	5.0000	3970.6912
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	21619	5.0000	4323.8286
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	19617	5.0000	3923.4053
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	20618	5.0000	4123.6356
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☑	19317	5.0000	3863.4448

Target Compound *PFHxDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
S:\MassHunter\Data\2210804DCAL\2210804D_1.d	Calibration	1	☑	27792	0.5000	15.4135
S:\MassHunter\Data\2210804DCAL\2210804D_2.d	Calibration	2	☑	75780	1.2500	15.1930
S:\MassHunter\Data\2210804DCAL\2210804D_3.d	Calibration	3	☑	285235	5.0000	14.3670
S:\MassHunter\Data\2210804DCAL\2210804D_4.d	Calibration	4	☑	571986	10.0000	13.2287
S:\MassHunter\Data\2210804DCAL\2210804D_5.d	Calibration	5	☑	1183391	20.0000	15.0812
S:\MassHunter\Data\2210804DCAL\2210804D_6.d	Calibration	6	☑	3025567	50.0000	14.6743
S:\MassHunter\Data\2210804DCAL\2210804D_7.d	Calibration	7	☐	24204	200.0000	0.0313

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ3
Analysis Date:	08/05/2021 04:43	Lab File ID:	2210804D_26.d
Analytical Method:		Analytical Batch:	718007

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	9490	100	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9330	97	70	130	
NEtFOSAA	ng/L	10000	9400	94	70	130	
NMeFOSAA	ng/L	10000	9800	98	70	130	
Perfluorobutanoic acid	ng/L	10000	9370	94	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8370	94	70	130	
Perfluorodecanoic acid	ng/L	10000	9290	93	70	130	
Perfluorododecanoic acid	ng/L	10000	9360	94	70	130	
Perfluoroheptanoic acid	ng/L	10000	9280	93	70	130	
Perfluorohexanoic acid	ng/L	10000	9470	95	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8590	94	70	130	
Perfluorononanoic acid	ng/L	10000	9240	92	70	130	
Perfluorooctanoic acid	ng/L	10000	9350	94	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8670	93	70	130	
Perfluoropentanoic acid	ng/L	10000	9370	94	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9430	94	70	130	
Perfluorotridecanoic acid	ng/L	10000	9050	90	70	130	
Perfluoroundecanoic acid	ng/L	10000	9320	93	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ3
Analysis Date:	08/05/2021 08:07	Lab File ID:	2210804D_40.d
Analytical Method:		Analytical Batch:	718007

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	9360	98	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9360	97	70	130	
NEtFOSAA	ng/L	10000	9150	91	70	130	
NMeFOSAA	ng/L	10000	9820	98	70	130	
Perfluorobutanoic acid	ng/L	10000	9250	93	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8150	92	70	130	
Perfluorodecanoic acid	ng/L	10000	9220	92	70	130	
Perfluorododecanoic acid	ng/L	10000	9410	94	70	130	
Perfluoroheptanoic acid	ng/L	10000	9430	94	70	130	
Perfluorohexanoic acid	ng/L	10000	9240	92	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8590	94	70	130	
Perfluorononanoic acid	ng/L	10000	9320	93	70	130	
Perfluorooctanoic acid	ng/L	10000	9450	95	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8640	93	70	130	
Perfluoropentanoic acid	ng/L	10000	9290	93	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9430	94	70	130	
Perfluorotridecanoic acid	ng/L	10000	9320	93	70	130	
Perfluoroundecanoic acid	ng/L	10000	9450	95	70	130	

FORM 7E - ORG

8I

INTERNAL STANDARD AREA SUMMARY

Report No:	221072807	Standard ID:	1205 (ICAL Midpoint)
Analyst:	ADA	Instrument ID:	QQQ3
Analysis Date:	08/04/21 23:36	Lab File ID:	2210804D_5.d
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	718007

	M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
	Area		*Area*		*Area*		*Area*	
STANDARD	860991		665705		795496		134109	
CLIENT SAMPLE ID	***LAB SAMP ID***	*#*		*#*		*#*		*#*
CS-MW002D-SB-39-41	22107280701	704267		523104		634039		116585	
AOI2-SB2-00-02	22107280703	834712		623563		755846		138357	
AOI2-SB2-02-04	22107280704	701254		532487		639015		114349	
AOI2-SB3-00-02	22107280705	795604		582855		718746		125468	
AOI2-SB3-02-04	22107280706	876584		649463		793564		103747	
AOI2-SB3-02-04DL	22107280706DL	1390024	*	1028790	*	1264299	*	213596	*
AOI2-SB4-00-02	22107280707	832951		624091		757038		137137	
AOI2-SB5-00-02	22107280710	753592		552183		676352		123471	
AOI2-SB4-02-04	22107280711	836472		613981		743599		134218	
AOI2-SB5-02-04	22107280712	821329		617835		733480		137778	
AOI2-SB5-02-04 MS	22107280713	857407		648463		787155		144033	
AOI2-SB5-02-04 MSD	22107280714	888737		667750		810750		148002	
CS-MW003S-SB-40-42	22107280722	817934		611167		748428		134254	
CS-MW003S-SB-40-42-D	22107280723	871456		640980		770418		142585	
MB2220588	2220588	790280		578088		708120		131138	
LCS2220589	2220589	813435		594831		715165		135013	
LCSD2220590	2220590	833596		609195		747761		140199	

* for information only

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

LC-QQQ Instrument Run Log

Agilent

Instrument: QQQ 3
Instrument Batch: 2210809C.batch.bin
Current ICAL Batch: 2210809ACAL
ICAL Std (ID/Exp): 019-11-2 1/19/22
ICV Std (ID/Exp): 019-9-2 2/2/22

LIMS Batch (HBN): 718366
20mM NH4OAc (ID/Exp): 019-11-3 8/11/21
Methanol (ID/Exp): 2130577 5/31/26
EIS Mix (ID/Exp): 019-11-1 1/19/22
IIS Mix (ID/Exp): 019-11-5 2/9/22

Acquisition time	Data File	Name	Type	Dilution	Comment
08/09/21 13:44:20	2210809A_1.d	1400 RT TEST	Sample	1	ADA,QQQ3;RT TEST
08/09/21 14:02:27	2210809A_2.d	1201	Cal	1	ADA,QQQ3;ICAL
08/09/21 14:17:12	2210809A_3.d	1202	Cal	1	ADA,QQQ3;ICAL
08/09/21 14:31:48	2210809A_4.d	1203	Cal	1	ADA,QQQ3;ICAL
08/09/21 14:46:25	2210809A_5.d	1204	Sample	1	ADA,QQQ3;ICAL incorrect IIS spike
08/09/21 15:01:01	2210809A_6.d	1205	Cal	1	ADA,QQQ3;ICAL
08/09/21 15:15:37	2210809A_7.d	1206	Cal	1	ADA,QQQ3;ICAL
08/09/21 15:30:14	2210809A_8.d	1207	Cal	1	ADA,QQQ3;ICAL
08/09/21 16:25:38	2210809A_9.d	1204	Cal	1	ADA,QQQ3;ICAL
08/09/21 16:45:29	2210809A_10.d	1500	Blank	1	ADA,QQQ3;ICAL
08/09/21 17:00:17	2210809A_11.d	1600	Sample	1	ADA,QQQ3;ICAL accuracy for 10:2 low
08/09/21 17:14:53	2210809A_12.d	1450	QC	1	ADA,QQQ3;ICAL
08/09/21 17:38:07	2210809A_13.d	1600	Sample	1	ADA,QQQ3;ICAL
08/10/21 06:25:34	2210809C_1.d	1500	Blank	1	ADA,QQQ3;CAL blank
08/10/21 06:40:11	2210809C_2.d	1450	QC	1	ADA,QQQ3;CCV
08/10/21 06:54:49	2210809C_3.d	2223697	Sample	1	ADA,QQQ3;718109; EIS Fail RR
08/10/21 07:09:43	2210809C_4.d	2223698	QC	1	ADA,QQQ3;718109; EIS Fail RR
08/10/21 07:24:19	2210809C_5.d	2223699	QC	1	ADA,QQQ3;718109; EIS Fail RR
08/10/21 07:38:56	2210809C_6.d	22107280724	Sample	1	ADA,QQQ3;718109
08/10/21 07:53:36	2210809C_7.d	22107316308*5	Sample	5	ADA,QQQ3;718109
08/10/21 08:08:14	2210809C_8.d	22107316312	Sample	1	ADA,QQQ3;718109
08/10/21 08:22:51	2210809C_9.d	22107317401*5	Sample	5	ADA,QQQ3;718109 dirty sample
08/10/21 08:37:28	2210809C_10.d	22107317402*5	Sample	5	ADA,QQQ3;718109 dirty sample
08/10/21 08:52:06	2210809C_11.d	22107317403*5	Sample	5	ADA,QQQ3;718109 dirty sample
08/10/21 09:06:43	2210809C_12.d	22107317404*5	Sample	5	ADA,QQQ3;718109 dirty sample
08/10/21 09:21:20	2210809C_13.d	22107317405*5	Sample	5	ADA,QQQ3;718109 dirty sample
08/10/21 09:35:58	2210809C_14.d	22107317406	Sample	1	ADA,QQQ3;718109
08/10/21 09:50:35	2210809C_15.d	22107317407	Sample	1	ADA,QQQ3;718109
08/10/21 10:05:12	2210809C_16.d	1400	QC	1	ADA,QQQ3;CCV
08/10/21 10:20:08	2210809C_17.d	22107317408	Sample	1	ADA,QQQ3;718109
08/10/21 10:35:01	2210809C_18.d	22107317409	Sample	1	ADA,QQQ3;718109
08/10/21 10:49:40	2210809C_19.d	22107317410	Sample	1	ADA,QQQ3;718109
08/10/21 11:04:16	2210809C_20.d	22107317411	Sample	1	ADA,QQQ3;718109
08/10/21 11:18:54	2210809C_21.d	22107317412	Sample	1	ADA,QQQ3;718109
08/10/21 11:33:47	2210809C_22.d	22107317413	Sample	1	ADA,QQQ3;718109
08/10/21 11:48:23	2210809C_23.d	22107317414	Sample	1	ADA,QQQ3;718109
08/10/21 12:03:01	2210809C_24.d	22107317415	Sample	1	ADA,QQQ3;718109
08/10/21 12:17:38	2210809C_25.d	22107317416*ms	Sample	1	ADA,QQQ3;718109
08/10/21 12:32:14	2210809C_26.d	22107317417*msd	Sample	1	ADA,QQQ3;718109
08/10/21 12:46:54	2210809C_27.d	22107316308	Sample	1	ADA,QQQ3;718109
08/10/21 13:01:30	2210809C_28.d	1400	QC	1	ADA,QQQ3;CCV

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	221072807	Instrument ID:	QQQ3
Analysis Date:	08/10/2021 06:40	Lab File ID:	2210809C_2.d
Analytical Method:		Analytical Batch:	718366

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	3.81	3.74	99	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	3.84	4.03	105	70	130	
NEtFOSAA	ng/L	4.00	3.62	90	70	130	
NMeFOSAA	ng/L	4.00	3.94	98	70	130	
Perfluorobutanoic acid	ng/L	4.00	3.82	96	70	130	
Perfluorobutanesulfonic acid	ng/L	3.55	3.38	95	70	130	
Perfluorodecanoic acid	ng/L	4.00	3.64	91	70	130	
Perfluorododecanoic acid	ng/L	4.00	3.79	95	70	130	
Perfluoroheptanoic acid	ng/L	4.00	3.84	96	70	130	
Perfluorohexanoic acid	ng/L	4.00	3.92	98	70	130	
Perfluorohexanesulfonic acid	ng/L	3.66	3.68	101	70	130	
Perfluorononanoic acid	ng/L	4.00	3.69	92	70	130	
Perfluorooctanoic acid	ng/L	4.00	3.74	94	70	130	
Perfluorooctanesulfonic acid	ng/L	3.71	3.58	97	70	130	
Perfluoropentanoic acid	ng/L	4.00	3.58	90	70	130	
Perfluorotetradecanoic acid	ng/L	4.00	3.74	94	70	130	
Perfluorotridecanoic acid	ng/L	4.00	3.89	97	70	130	
Perfluoroundecanoic acid	ng/L	4.00	3.82	96	70	130	

FORM 7S - ORG

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ3
Analysis Date:	08/09/2021 17:38	Lab File ID:	2210809A_13.d
Analytical Method:		Analytical Batch:	718360

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	10000	10600	106	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	10100	9660	96	70	130	
NEtFOSAA	ng/L	10000	9820	98	70	130	
NMeFOSAA	ng/L	10000	10200	102	70	130	
Perfluorobutanoic acid	ng/L	10000	9850	99	70	130	
Perfluorobutanesulfonic acid	ng/L	10000	9780	98	70	130	
Perfluorodecanoic acid	ng/L	10000	10300	103	70	130	
Perfluorododecanoic acid	ng/L	10000	9620	96	70	130	
Perfluoroheptanoic acid	ng/L	10000	10100	101	70	130	
Perfluorohexanoic acid	ng/L	10100	9970	99	70	130	
Perfluorohexanesulfonic acid	ng/L	10000	9740	97	70	130	
Perfluorononanoic acid	ng/L	10000	10600	106	70	130	
Perfluorooctanoic acid	ng/L	10100	9820	97	70	130	
Perfluorooctanesulfonic acid	ng/L	10000	8820	88	70	130	
Perfluoropentanoic acid	ng/L	10100	9970	99	70	130	
Perfluorotetradecanoic acid	ng/L	10000	10500	105	70	130	
Perfluorotridecanoic acid	ng/L	10000	9050	90	70	130	
Perfluoroundecanoic acid	ng/L	10000	9670	97	70	130	

FORM 6I - ORG

4I

ORGANICS INSTRUMENT BLANK

Report No:	221072807	Instrument ID:	QQQ3
Analysis Date:	08/10/2021 06:25	Lab File ID:	2210809C_1.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	718366

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
6:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.50	3.00	4.00	
8:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.06	3.00	4.00	
NEtFOSAA	ng/L	4.00	U	1.58	4.00	8.00	
NMeFOSAA	ng/L	4.00	U	0.90	4.00	8.00	
Perfluorobutanesulfonic acid	ng/L	2.00	U	0.62	2.00	4.00	
Perfluorobutanoic acid	ng/L	3.50	U	1.52	3.50	4.00	
Perfluorodecanoic acid	ng/L	3.00	U	1.44	3.00	4.00	
Perfluorododecanoic acid	ng/L	3.00	U	1.30	3.00	4.00	
Perfluoroheptanoic acid	ng/L	3.00	U	1.16	3.00	4.00	
Perfluorohexanesulfonic acid	ng/L	3.00	U	1.24	3.00	4.00	
Perfluorohexanoic acid	ng/L	2.00	U	0.94	2.00	4.00	
Perfluorononanoic acid	ng/L	2.00	U	0.98	2.00	4.00	
Perfluorooctanesulfonic acid	ng/L	2.00	U	0.76	2.00	4.00	
Perfluorooctanoic acid	ng/L	2.00	U	0.84	2.00	4.00	
Perfluoropentanoic acid	ng/L	2.00	U	0.88	2.00	4.00	
Perfluorotetradecanoic acid	ng/L	3.00	U	1.14	3.00	4.00	
Perfluorotridecanoic acid	ng/L	3.00	U	1.23	3.00	4.00	
Perfluoroundecanoic acid	ng/L	3.00	U	1.24	3.00	4.00	

* - Result greater than 1/2 LOQ

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ3
Analysis Date:	08/10/2021 10:05	Lab File ID:	2210809C_16.d
Analytical Method:		Analytical Batch:	718366

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	9510	9690	102	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9980	104	70	130	
NEtFOSAA	ng/L	10000	9790	98	70	130	
NMeFOSAA	ng/L	10000	10100	101	70	130	
Perfluorobutanoic acid	ng/L	10000	9920	99	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8770	99	70	130	
Perfluorodecanoic acid	ng/L	10000	9620	96	70	130	
Perfluorododecanoic acid	ng/L	10000	9890	99	70	130	
Perfluoroheptanoic acid	ng/L	10000	9710	97	70	130	
Perfluorohexanoic acid	ng/L	10000	9750	97	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8830	97	70	130	
Perfluorononanoic acid	ng/L	10000	9740	97	70	130	
Perfluorooctanoic acid	ng/L	10000	9760	98	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8800	95	70	130	
Perfluoropentanoic acid	ng/L	10000	9790	98	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9960	100	70	130	
Perfluorotridecanoic acid	ng/L	10000	10200	102	70	130	
Perfluoroundecanoic acid	ng/L	10000	9670	97	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ3
Analysis Date:	08/10/2021 13:01	Lab File ID:	2210809C_28.d
Analytical Method:		Analytical Batch:	718366

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	9610	101	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9290	97	70	130	
NEtFOSAA	ng/L	10000	9580	96	70	130	
NMeFOSAA	ng/L	10000	9950	100	70	130	
Perfluorobutanoic acid	ng/L	10000	9830	98	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8820	99	70	130	
Perfluorodecanoic acid	ng/L	10000	9610	96	70	130	
Perfluorododecanoic acid	ng/L	10000	9950	99	70	130	
Perfluoroheptanoic acid	ng/L	10000	9740	97	70	130	
Perfluorohexanoic acid	ng/L	10000	9600	96	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8830	97	70	130	
Perfluorononanoic acid	ng/L	10000	9780	98	70	130	
Perfluorooctanoic acid	ng/L	10000	9810	98	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	9030	97	70	130	
Perfluoropentanoic acid	ng/L	10000	9750	97	70	130	
Perfluorotetradecanoic acid	ng/L	10000	10000	100	70	130	
Perfluorotridecanoic acid	ng/L	10000	10200	102	70	130	
Perfluoroundecanoic acid	ng/L	10000	9890	99	70	130	

FORM 7E - ORG

8I

INTERNAL STANDARD AREA SUMMARY

Report No:	221072807	Standard ID:	1450 (ISC)
Analyst:	ADA	Instrument ID:	QQQ3
Analysis Date:	08/10/21 06:40	Lab File ID:	2210809C_2.d
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	718366

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		996955		749291		919642		164109	
CLIENT SAMPLE ID	*LAB SAMP ID*		*#*		*#*		*#*		*#*
CS-ST-045-072621	22107280724	812929		608429		744055		129056	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

LC-QQQ Instrument Run Log

Agilent

Instrument: QQQ 3
Instrument Batch: 2210810B.batch.bin
Current ICAL Batch: 2210809ACAL
ICAL Std (ID/Exp): 019-12-3 1/19/22
ICV Std (ID/Exp): 019-9-2 2/2/22

LIMS Batch (HBN): 718449/718454
20mM NH4OAc (ID/Exp): 019-12-1 8/12/21
Methanol (ID/Exp): 2130577 5/31/26
EIS Mix (ID/Exp): 019-11-1 1/19/22
IIS Mix (ID/Exp): 019-11-5 2/9/22

Acquisition time	Data File	Name	Type	Dilution	Comment
08/09/21 14:02:27	2210809A_2.d	1201	Cal	1	ADA,QQQ3;ICAL
08/09/21 14:17:12	2210809A_3.d	1202	Cal	1	ADA,QQQ3;ICAL
08/09/21 14:31:48	2210809A_4.d	1203	Cal	1	ADA,QQQ3;ICAL
08/09/21 14:46:25	2210809A_5.d	1204	Sample	1	ADA,QQQ3;ICAL incorrect IIS spike
08/09/21 15:01:01	2210809A_6.d	1205	Cal	1	ADA,QQQ3;ICAL
08/09/21 15:15:37	2210809A_7.d	1206	Cal	1	ADA,QQQ3;ICAL
08/09/21 15:30:14	2210809A_8.d	1207	Cal	1	ADA,QQQ3;ICAL
08/09/21 16:25:38	2210809A_9.d	1204	Cal	1	ADA,QQQ3;ICAL
08/09/21 16:45:29	2210809A_10.d	1500	Blank	1	ADA,QQQ3;ICAL
08/09/21 17:00:17	2210809A_11.d	1600	Sample	1	ADA,QQQ3;ICAL accuracy for 10:2 low
08/09/21 17:14:53	2210809A_12.d	1450	QC	1	ADA,QQQ3;ICAL
08/09/21 17:38:07	2210809A_13.d	1600	Sample	1	ADA,QQQ3;ICAL
08/11/21 01:43:08	2210810B_1.d	1500	Blank	1	ADA,QQQ3;CAL blank
08/11/21 01:57:44	2210810B_2.d	1450	QC	1	ADA,QQQ3;CCV
08/11/21 02:12:21	2210810B_3.d	22107316109	Sample	1	ADA,QQQ3;718100
08/11/21 02:27:13	2210810B_4.d	22107316110	Sample	1	ADA,QQQ3;718100
08/11/21 02:41:50	2210810B_5.d	22107316112	Sample	1	ADA,QQQ3;718100
08/11/21 02:56:31	2210810B_6.d	22107316113	Sample	1	ADA,QQQ3;718100
08/11/21 03:11:08	2210810B_7.d	22107316114	Sample	1	ADA,QQQ3;718100
08/11/21 03:25:47	2210810B_8.d	22107316117	Sample	1	ADA,QQQ3;718100
08/11/21 03:40:24	2210810B_9.d	22107316118	Sample	1	ADA,QQQ3;718100
08/11/21 03:55:00	2210810B_10.d	22107316119	Sample	1	ADA,QQQ3;718100
08/11/21 04:09:38	2210810B_11.d	22107316120	Sample	1	ADA,QQQ3;718100
08/11/21 04:24:15	2210810B_12.d	22107316121	Sample	1	ADA,QQQ3;718100
08/11/21 04:38:51	2210810B_13.d	1400	QC	1	ADA,QQQ3;CCV
08/11/21 04:53:45	2210810B_14.d	22107316122	Sample	1	ADA,QQQ3;718100
08/11/21 05:08:38	2210810B_15.d	2223674	Sample	1	ADA,QQQ3;718100
08/11/21 05:23:15	2210810B_16.d	2223675	Sample	1	ADA,QQQ3;718100
08/11/21 05:37:51	2210810B_17.d	22107316123	Sample	1	ADA,QQQ3;718100
08/11/21 05:52:30	2210810B_18.d	22107316301	Sample	1	ADA,QQQ3;718100
08/11/21 06:07:06	2210810B_19.d	22107316304	Sample	1	ADA,QQQ3;718100
08/11/21 06:21:44	2210810B_20.d	22107316305	Sample	1	ADA,QQQ3;718100
08/11/21 06:36:21	2210810B_21.d	22107316306	Sample	1	ADA,QQQ3;718100
08/11/21 06:50:58	2210810B_22.d	22107316307	Sample	1	ADA,QQQ3;718100
08/11/21 07:05:34	2210810B_23.d	2223697	Sample	1	ADA,QQQ3;718109
08/11/21 07:20:10	2210810B_24.d	2223698	Sample	1	ADA,QQQ3;718109
08/11/21 07:34:46	2210810B_25.d	2223699	Sample	1	ADA,QQQ3;718109
08/11/21 07:49:22	2210810B_26.d	22107317401	Sample	5	ADA,QQQ3;718109 dirty sample
08/11/21 08:03:59	2210810B_27.d	22107317402	Sample	5	ADA,QQQ3;718109 dirty sample
08/11/21 08:18:39	2210810B_28.d	22107317403	Sample	5	ADA,QQQ3;718109 dirty sample
08/11/21 08:33:15	2210810B_29.d	1400	QC	1	ADA,QQQ3;CCV
08/11/21 08:48:08	2210810B_30.d	22107317404	Sample	5	ADA,QQQ3;718109 dirty sample
08/11/21 09:03:01	2210810B_31.d	22107317405	Sample	5	ADA,QQQ3;718109 dirty sample
08/11/21 09:17:38	2210810B_32.d	22107237108	Sample	5	ADA,QQQ3;717923
08/11/21 09:32:14	2210810B_33.d	22107237118	Sample	10	ADA,QQQ3;717923
08/11/21 09:46:50	2210810B_34.d	22107237126	Sample	5	ADA,QQQ3;717923
08/11/21 10:01:26	2210810B_35.d	22107232701	Sample	20	ADA,QQQ3;716994 PRE TA
08/11/21 10:16:03	2210810B_36.d	22107232702	Sample	5	ADA,QQQ3;716994 PRE TA
08/11/21 10:30:39	2210810B_37.d	22107232701	Sample	20	ADA,QQQ3;717311 POST TA
08/11/21 10:45:19	2210810B_38.d	22107232702	Sample	5	ADA,QQQ3;717311 POST TA
08/11/21 10:59:56	2210810B_39.d	1400	QC	1	ADA,QQQ3;CCV

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	221072807	Instrument ID:	QQQ3
Analysis Date:	08/11/2021 01:57	Lab File ID:	2210810B_2.d
Analytical Method:		Analytical Batch:	718449

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	3.81	3.42	90	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	3.84	3.60	94	70	130	
NEtFOSAA	ng/L	4.00	3.46	87	70	130	
NMeFOSAA	ng/L	4.00	3.82	96	70	130	
Perfluorobutanoic acid	ng/L	4.00	3.66	91	70	130	
Perfluorobutanesulfonic acid	ng/L	3.55	3.29	93	70	130	
Perfluorodecanoic acid	ng/L	4.00	3.48	87	70	130	
Perfluorododecanoic acid	ng/L	4.00	3.55	89	70	130	
Perfluoroheptanoic acid	ng/L	4.00	3.61	90	70	130	
Perfluorohexanoic acid	ng/L	4.00	3.67	92	70	130	
Perfluorohexanesulfonic acid	ng/L	3.66	3.55	97	70	130	
Perfluorononanoic acid	ng/L	4.00	3.58	90	70	130	
Perfluorooctanoic acid	ng/L	4.00	3.66	91	70	130	
Perfluorooctanesulfonic acid	ng/L	3.71	3.50	94	70	130	
Perfluoropentanoic acid	ng/L	4.00	3.71	93	70	130	
Perfluorotetradecanoic acid	ng/L	4.00	3.60	90	70	130	
Perfluorotridecanoic acid	ng/L	4.00	3.73	93	70	130	
Perfluoroundecanoic acid	ng/L	4.00	3.55	89	70	130	

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/03/2021 12:32	Lab File ID:	2210803A_10.d
Analytical Method:		Analytical Batch:	717833

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	10000	8410	84	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	10100	8440	84	70	130	
NEtFOSAA	ng/L	10000	7310	73	70	130	
NMeFOSAA	ng/L	10000	8210	82	70	130	
Perfluorobutanoic acid	ng/L	10000	7780	78	70	130	
Perfluorobutanesulfonic acid	ng/L	10000	7910	79	70	130	
Perfluorodecanoic acid	ng/L	10000	7900	79	70	130	
Perfluorododecanoic acid	ng/L	10000	7650	77	70	130	
Perfluoroheptanoic acid	ng/L	10000	7780	78	70	130	
Perfluorohexanoic acid	ng/L	10100	7930	79	70	130	
Perfluorohexanesulfonic acid	ng/L	10000	7700	77	70	130	
Perfluorononanoic acid	ng/L	10000	8240	82	70	130	
Perfluorooctanoic acid	ng/L	10100	7410	73	70	130	
Perfluorooctanesulfonic acid	ng/L	10000	7110	71	70	130	
Perfluoropentanoic acid	ng/L	10100	7880	78	70	130	
Perfluorotetradecanoic acid	ng/L	10000	8360	84	70	130	
Perfluorotridecanoic acid	ng/L	10000	7020	70	70	130	
Perfluoroundecanoic acid	ng/L	10000	7660	77	70	130	

4I

ORGANICS INSTRUMENT BLANK

Report No:	221072807	Instrument ID:	QQQ3
Analysis Date:	08/11/2021 01:43	Lab File ID:	2210810B_1.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	718449

ANALYTE	*UNITS*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*	*#*
6:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.50	3.00	4.00	
8:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.06	3.00	4.00	
NEtFOSAA	ng/L	4.00	U	1.58	4.00	8.00	
NMeFOSAA	ng/L	4.00	U	0.90	4.00	8.00	
Perfluorobutanesulfonic acid	ng/L	2.00	U	0.62	2.00	4.00	
Perfluorobutanoic acid	ng/L	3.50	U	1.52	3.50	4.00	
Perfluorodecanoic acid	ng/L	3.00	U	1.44	3.00	4.00	
Perfluorododecanoic acid	ng/L	3.00	U	1.30	3.00	4.00	
Perfluoroheptanoic acid	ng/L	3.00	U	1.16	3.00	4.00	
Perfluorohexanesulfonic acid	ng/L	3.00	U	1.24	3.00	4.00	
Perfluorohexanoic acid	ng/L	2.00	U	0.94	2.00	4.00	
Perfluorononanoic acid	ng/L	2.00	U	0.98	2.00	4.00	
Perfluorooctanesulfonic acid	ng/L	2.00	U	0.76	2.00	4.00	
Perfluorooctanoic acid	ng/L	2.00	U	0.84	2.00	4.00	
Perfluoropentanoic acid	ng/L	2.00	U	0.88	2.00	4.00	
Perfluorotetradecanoic acid	ng/L	3.00	U	1.14	3.00	4.00	
Perfluorotridecanoic acid	ng/L	3.00	U	1.23	3.00	4.00	
Perfluoroundecanoic acid	ng/L	3.00	U	1.24	3.00	4.00	

* - Result greater than 1/2 LOQ

Quantitative Analysis Calibration Report

Batch Data Path	D:\MassHunter\Data\QQQ3\2210809ACAL\QuantResults\2210810B.batch.bin		
Analysis Time	8/12/2021 10:36 AM	**Analyst Name**	GCAL\lcms
Report Time	8/20/2021 10:11 AM	**Reporter Name**	GCAL\lcms
Last Calib Update	8/10/2021 11:41 AM	**Batch State**	Processed

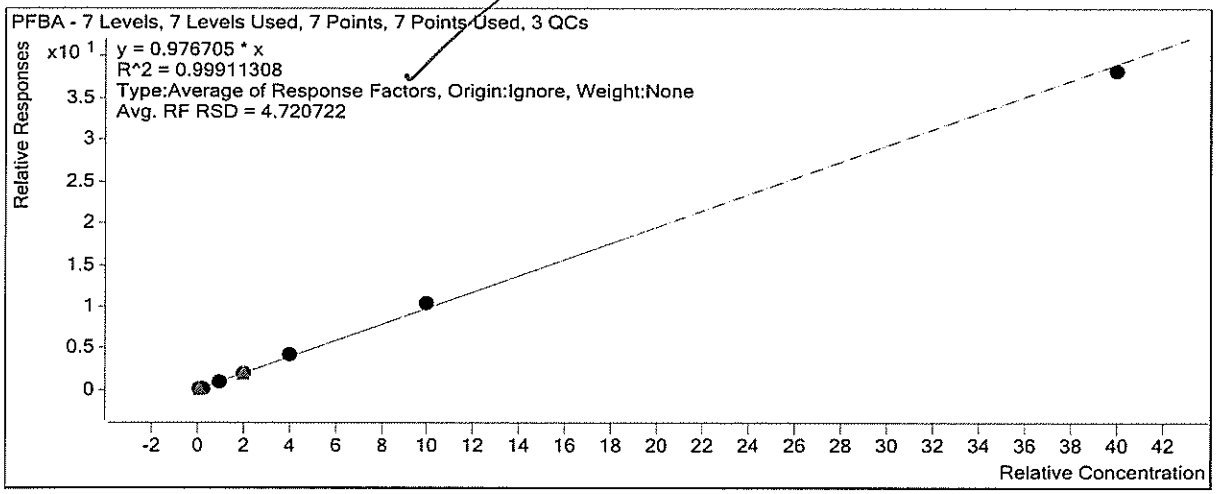
Calibration Info

Extracted ISTD *MPFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	94599	5.0000	18919.8307
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	97100	5.0000	19420.0445
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	100399	5.0000	20079.8394
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	108398	5.0000	21679.5866
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	97415	5.0000	19483.0028
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	96603	5.0000	19320.6159
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	94202	5.0000	18840.4334

Target Compound *PFBA*

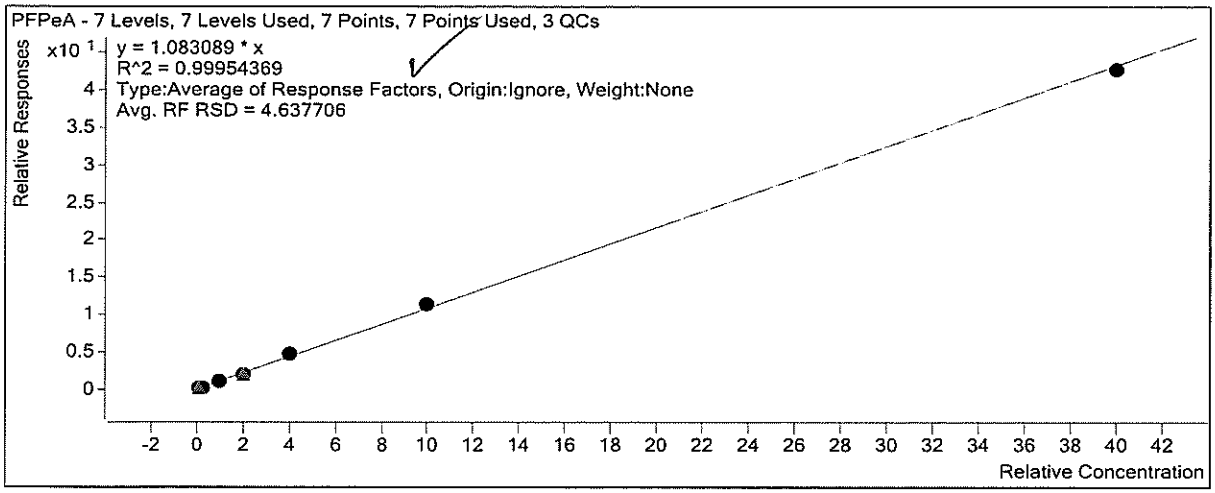
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	8779	0.5000	0.9280
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	23193	1.2500	0.9554
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	94696	5.0000	0.9432
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	210168	10.0000	0.9694
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	406926	20.0000	1.0443
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	1003328	50.0000	1.0386
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	3609739	200.0000	0.9580



Target Compound *PFMPA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	1069	0.5000	0.1022
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	2902	1.2500	0.1103
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	11113	5.0000	0.1006
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	24824	10.0000	0.1046

Quantitative Analysis Calibration Report



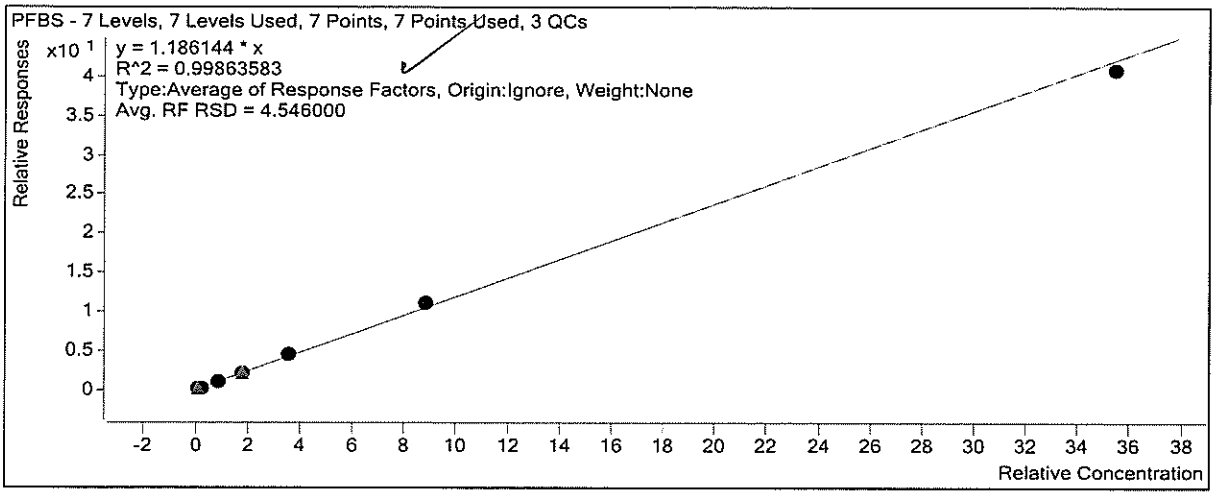
Extracted ISTD *M3PFBS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	32342	5.0000	6468.4392
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	32998	5.0000	6599.5990
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	34706	5.0000	6941.1804
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	37339	5.0000	7467.7385
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	33187	5.0000	6637.4304
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	32228	5.0000	6445.5791
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	30115	5.0000	6023.0873

Target Compound *PFBS*

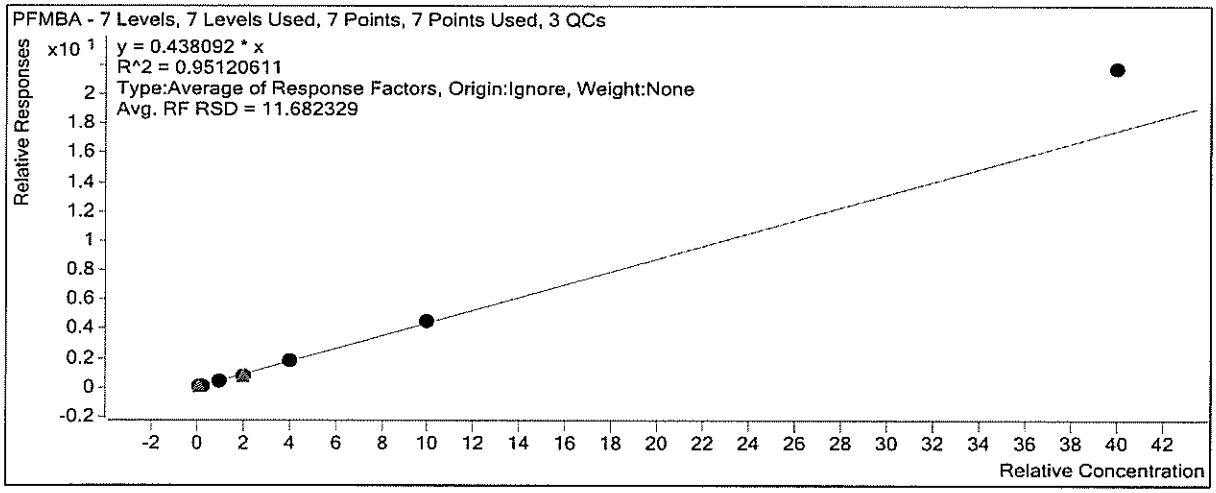
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	3325	0.4435	1.1590
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	8860	1.1088	1.2108
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	34233	4.4350	1.1120
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	77034	8.8700	1.1630
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	148125	17.7400	1.2580
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	356665	44.3500	1.2477
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	1231555	177.4000	1.1526

Quantitative Analysis Calibration Report



Target Compound *PFMBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	5610	0.5000	0.3992
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	15430	1.2500	0.4272
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	60001	5.0000	0.3983
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	133289	10.0000	0.4072
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	253081	20.0000	0.4439
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	639062	50.0000	0.4457
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	2972379	200.0000	0.5451

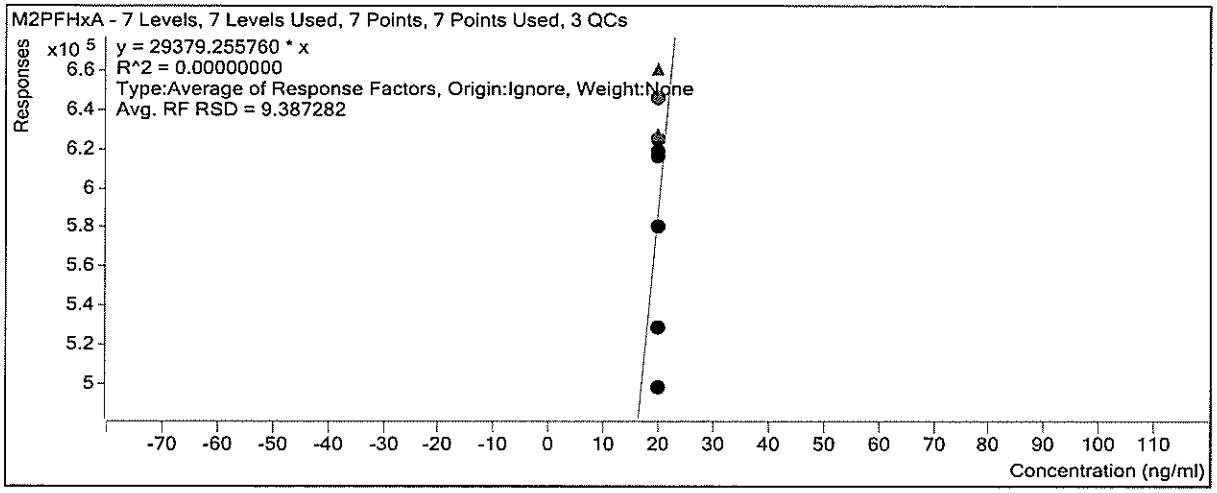


Target Compound *PFEESA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	6987	0.4450	2.7554
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	17921	1.1125	2.7068
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	72473	4.4500	2.6333
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	163004	8.9000	2.7502
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	315332	17.8000	2.9920

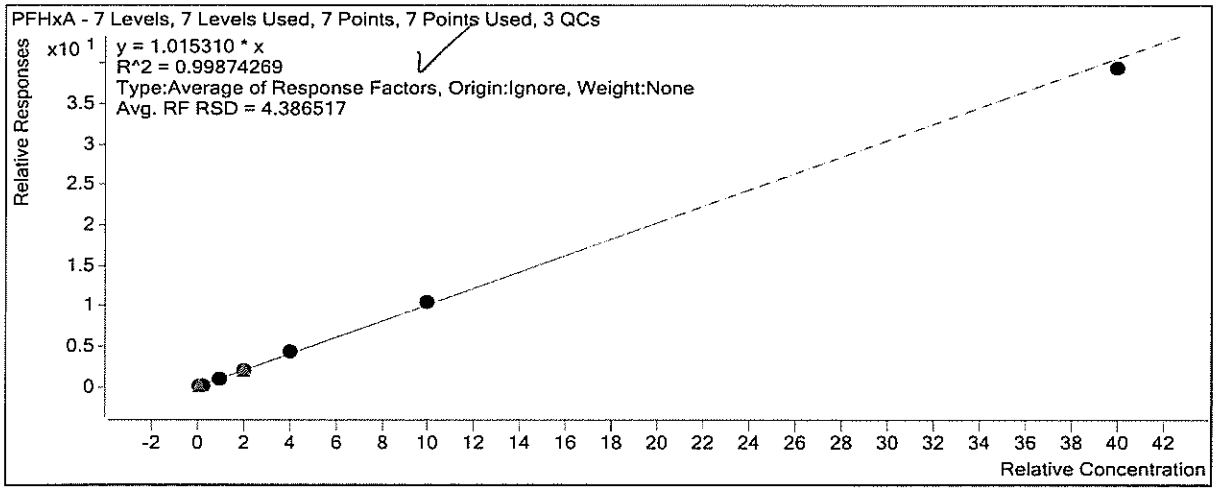
Quantitative Analysis Calibration Report

K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	528651	20.0000	26432.5356
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	497571	20.0000	24878.5482



Target Compound *PFHxA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	13846	0.5000	0.9852
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	36822	1.2500	1.0194
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	146480	5.0000	0.9725
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	324678	10.0000	0.9919
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	622872	20.0000	1.0926
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	1517263	50.0000	1.0583
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	5383863	200.0000	0.9874



Target Compound *PFPeS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	3810	0.4705	1.2519
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	9712	1.1763	1.2510
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	40717	4.7050	1.2468

Quantitative Analysis Calibration Report

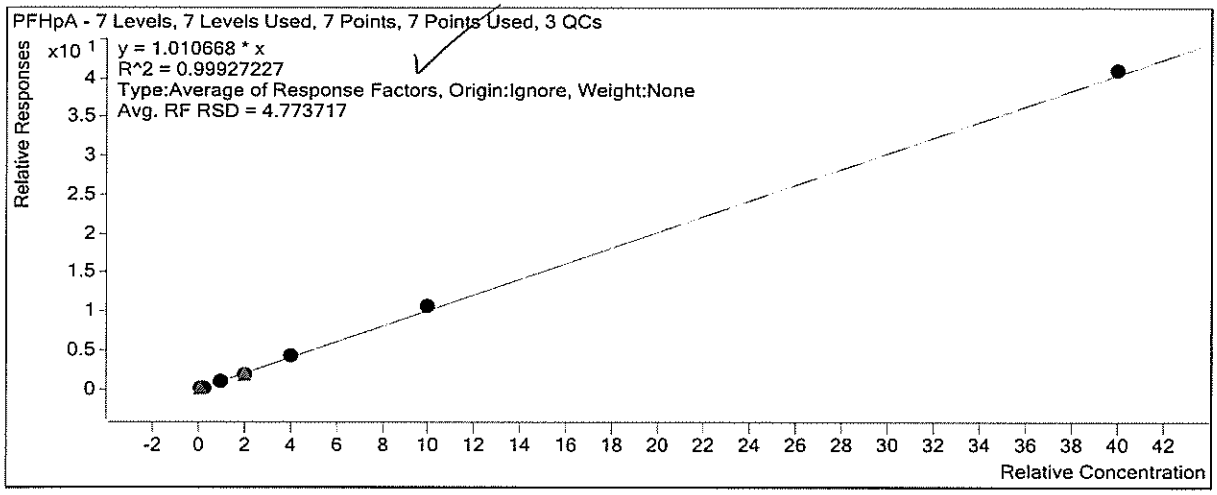
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	35114	10.0000	3511.3984
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	37705	10.0000	3770.5368
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	42286	10.0000	4228.5928
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	36730	10.0000	3673.0065
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	37389	10.0000	3738.8716
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	34782	10.0000	3478.1874

Extracted ISTD *M4PFHpA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	169854	5.0000	33970.8794
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	178712	5.0000	35742.3189
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	184961	5.0000	36992.2700
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	201216	5.0000	40243.2203
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	177801	5.0000	35560.2627
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	174932	5.0000	34986.4445
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	163672	5.0000	32734.3752

Target Compound *PFHpA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	16332	0.5000	0.9615
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	43794	1.2500	0.9802
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	178521	5.0000	0.9652
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	399571	10.0000	0.9929
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	760914	20.0000	1.0699
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	1884617	50.0000	1.0773
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	6727661	200.0000	1.0276



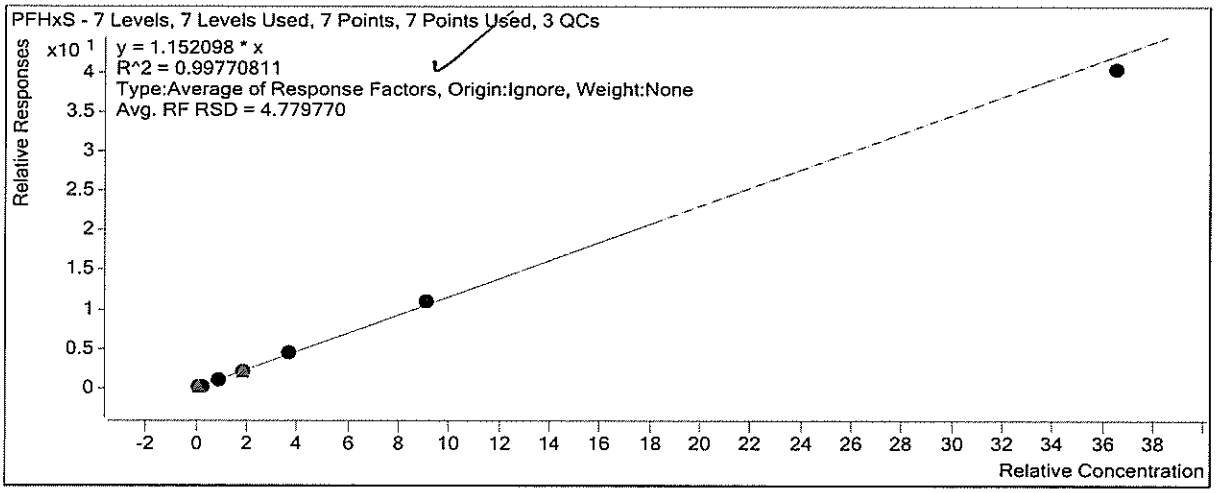
Extracted ISTD *M3PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
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K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	29755	5.0000	5951.0961
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	30924	5.0000	6184.7135

K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	33297	5.0000	6659.4906
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	29605	5.0000	5920.9379
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	28812	5.0000	5762.3964
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	27756	5.0000	5551.2780

Target Compound *PFHxS*

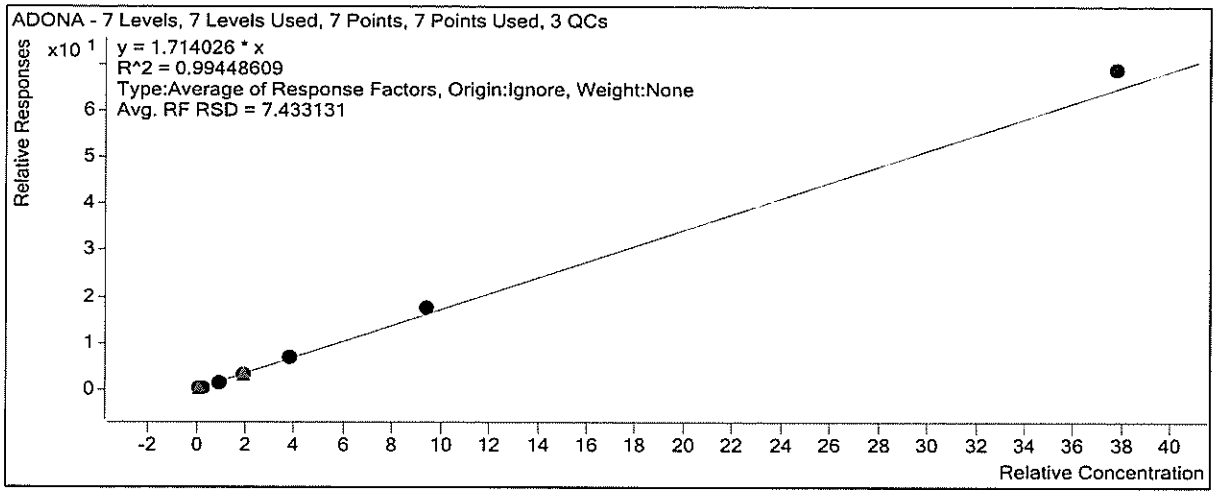
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	3177	0.4570	1.2198
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	7806	1.1425	1.1481
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	30423	4.5700	1.0764
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	67932	9.1400	1.1161
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	130608	18.2800	1.2067
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	313637	45.7000	1.1910
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	1123016	182.8000	1.1067



Target Compound *ADONA*

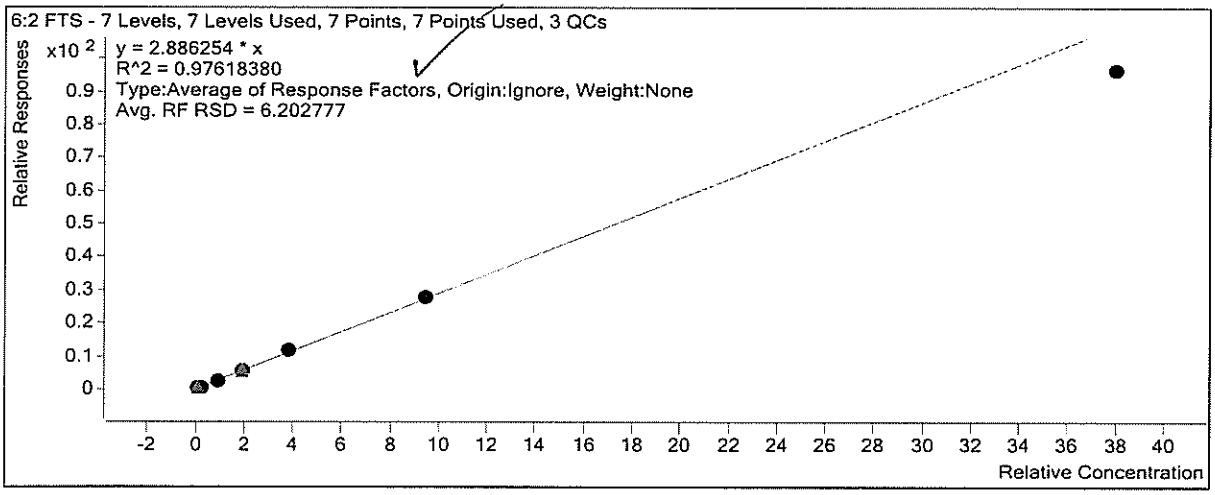
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	25061	0.4725	1.5293
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	67388	1.1813	1.6676
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	268952	4.7250	1.6187
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	611589	9.4500	1.6623
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	1173996	18.9000	1.8202
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	2887671	47.2500	1.8732
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	10721376	189.0000	1.8269

Quantitative Analysis Calibration Report



Target Compound *6:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	3453	0.4755	2.9499
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	8948	1.1888	2.8883
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	31126	4.7550	2.7953
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	80780	9.5100	2.9770
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	145318	19.0200	3.1088
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	317751	47.5500	2.9432
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	991534	190.2000	2.5413



Extracted ISTD *M2 6:2 FTS*

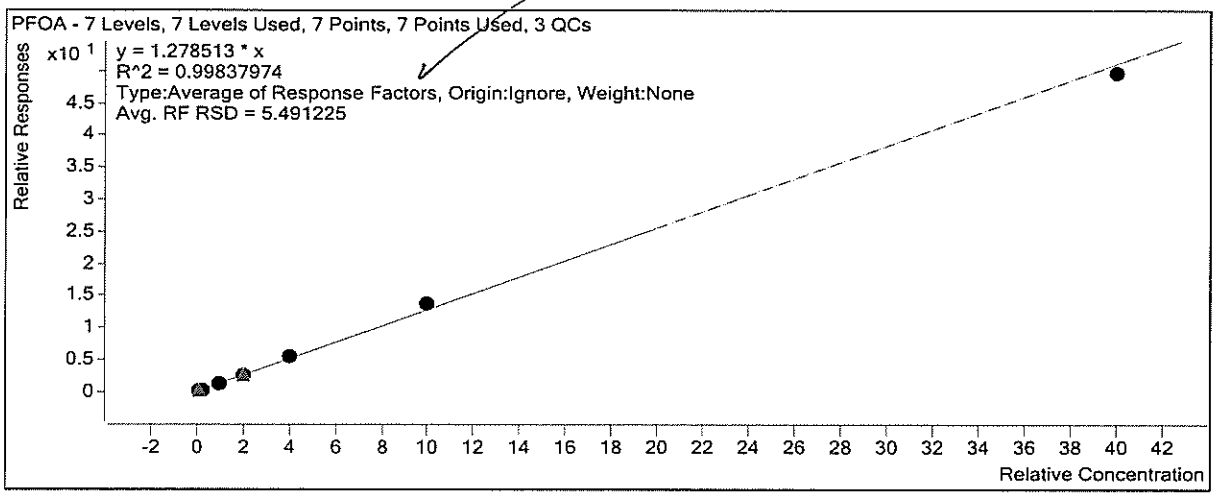
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	12310	5.0000	2461.9157
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	13030	5.0000	2605.9497
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	11709	5.0000	2341.8200
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	14266	5.0000	2853.2607
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	12288	5.0000	2457.6323

Quantitative Analysis Calibration Report

K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	11352	5.0000	2270.4706
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	10257	5.0000	2051.3328

Target Compound *PFOA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	20562	0.5000	1.1857
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	54927	1.2500	1.2845
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	218216	5.0000	1.2411
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	487634	10.0000	1.2525
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	921223	20.0000	1.3497
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	2269173	50.0000	1.3910
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	7731539	200.0000	1.2450



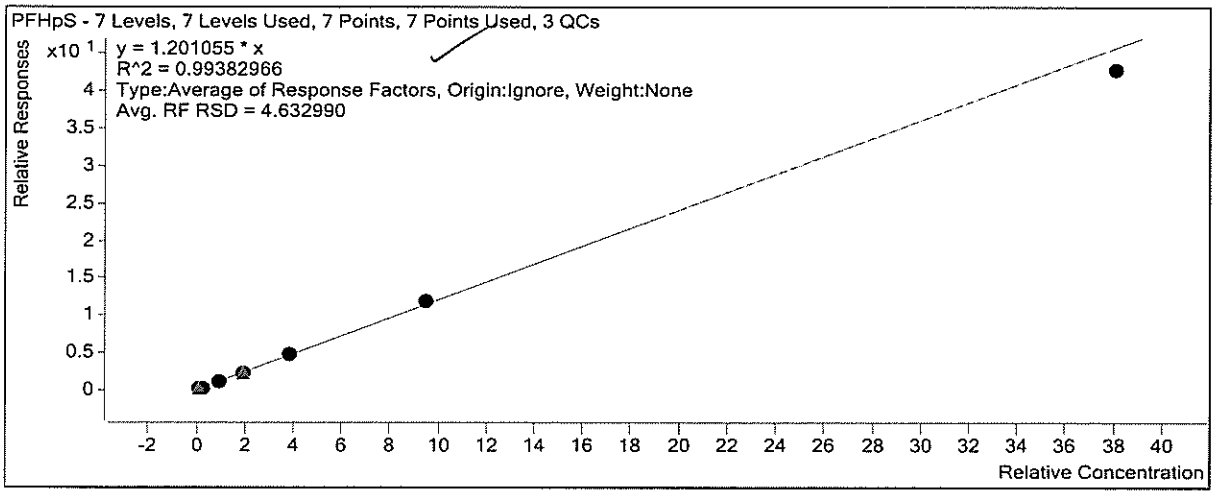
Extracted ISTD *M8PFOA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	173409	5.0000	34681.8990
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	171045	5.0000	34208.9936
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	175826	5.0000	35165.1734
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	194661	5.0000	38932.2239
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	170634	5.0000	34126.8526
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	163128	5.0000	32625.6313
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	155252	5.0000	31050.3485

Instrument ISTD *MPFOA*

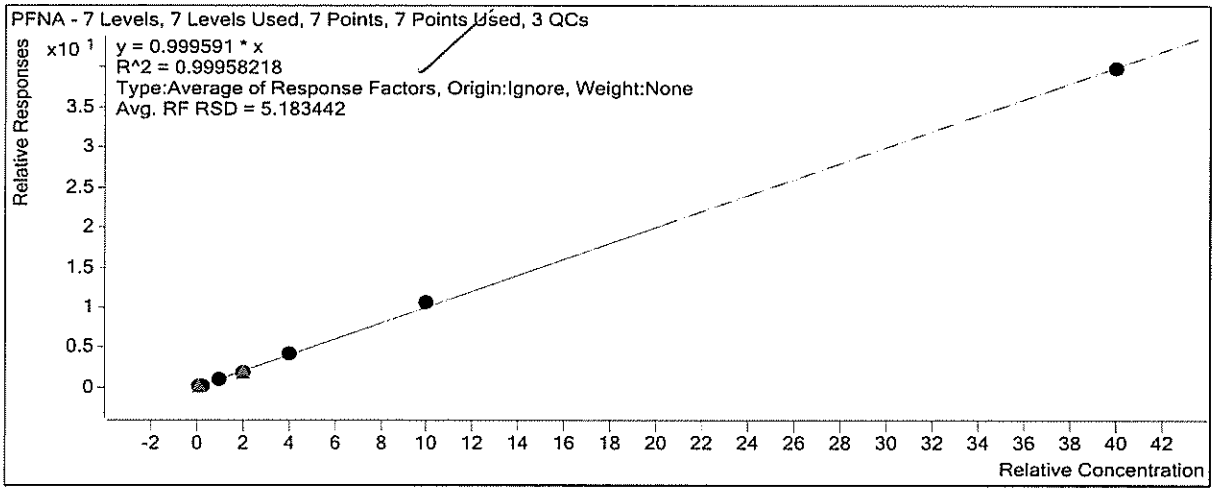
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	1134556	25.0000	45382.2308
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	1135204	25.0000	45408.1435
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	1134060	25.0000	45362.3836
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	1100308	25.0000	44012.3362
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	1106186	25.0000	44247.4597
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	1052172	25.0000	42086.8847
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	965936	25.0000	38637.4464

K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	345105	47.6500	1.2569
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	1189961	190.6000	1.1246



Target Compound *PFNA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	18060	0.5000	0.9323
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	48482	1.2500	0.9845
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	196457	5.0000	0.9638
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	426269	10.0000	0.9798
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	828544	20.0000	1.0729
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	1998798	50.0000	1.0653
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	6705622	200.0000	0.9985

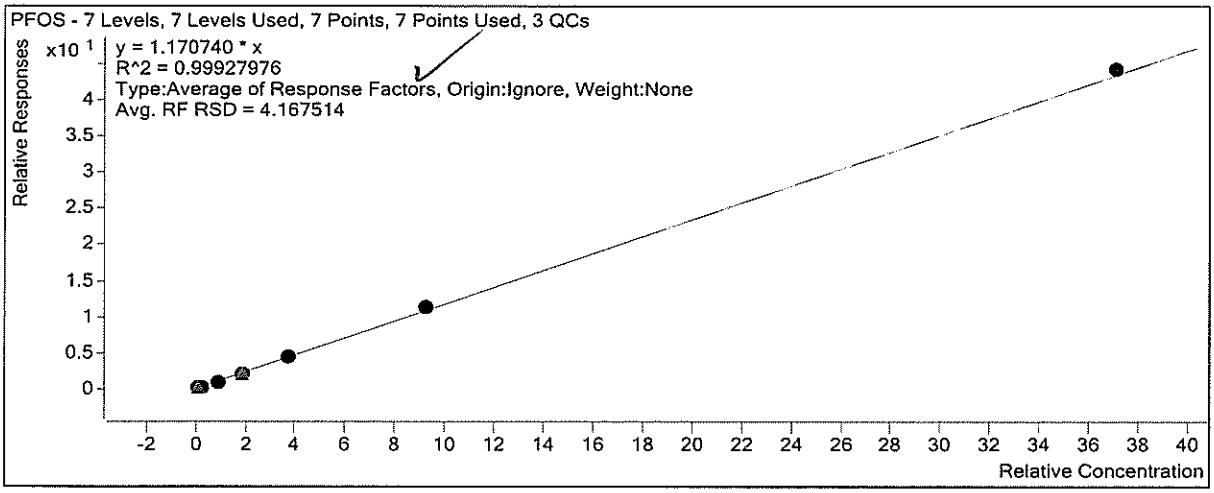


Extracted ISTD *M9PFNA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	193716	5.0000	38743.1476
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	196972	5.0000	39394.3088
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	203830	5.0000	40765.9803

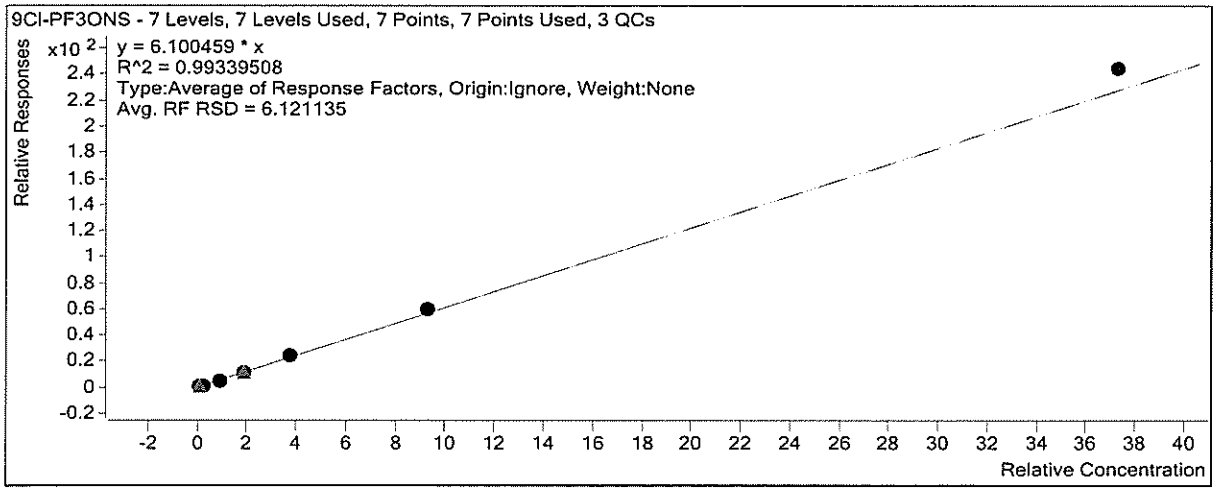
Quantitative Analysis Calibration Report

K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	310911	46.4000	1.2163
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	1091081	185.6000	1.1960



Target Compound *9Cl-PF3ONS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	14826	0.4665	5.6965
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	39487	1.1663	5.9318
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	161476	4.6650	5.7809
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	348708	9.3300	5.8240
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	683981	18.6600	6.4121
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	1666053	46.5500	6.4967
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	6017786	186.6000	6.5613



Extracted ISTD *M2 8:2 FTS*

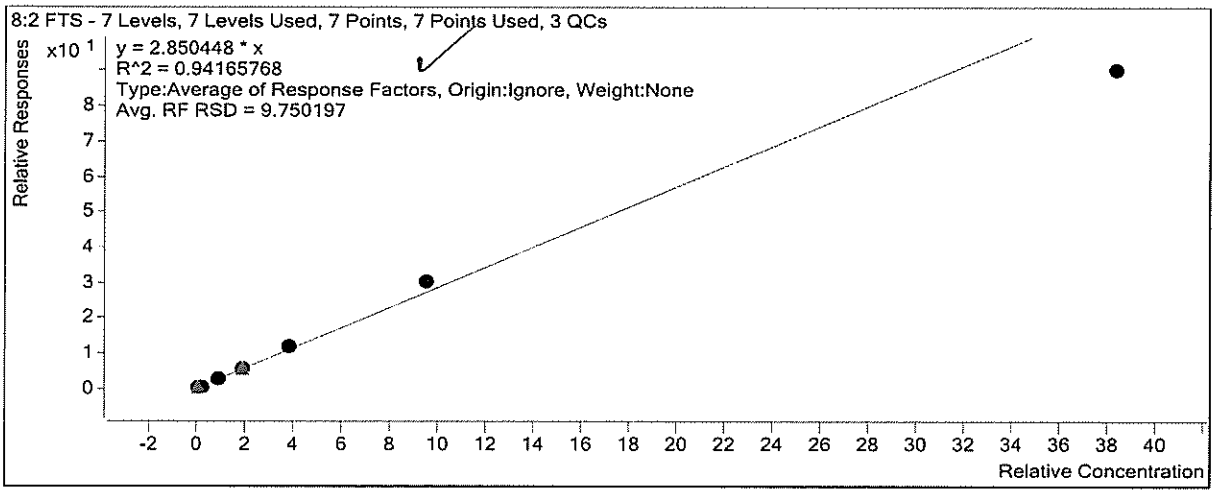
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	7997	5.0000	1599.3872
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	8016	5.0000	1603.1101
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	7941	5.0000	1588.2444

Quantitative Analysis Calibration Report

K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	9005	5.0000	1801.0753
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	7295	5.0000	1459.0474
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	6710	5.0000	1342.0777
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	6513	5.0000	1302.6813

Target Compound *8:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	2219	0.4800	2.8900
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	5162	1.2000	2.6832
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	21531	4.8000	2.8243
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	50005	9.6000	2.8921
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	88418	19.2000	3.1563
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	203127	48.0000	3.1532
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	588804	192.0000	2.3541



Extracted ISTD *M6PFDA*

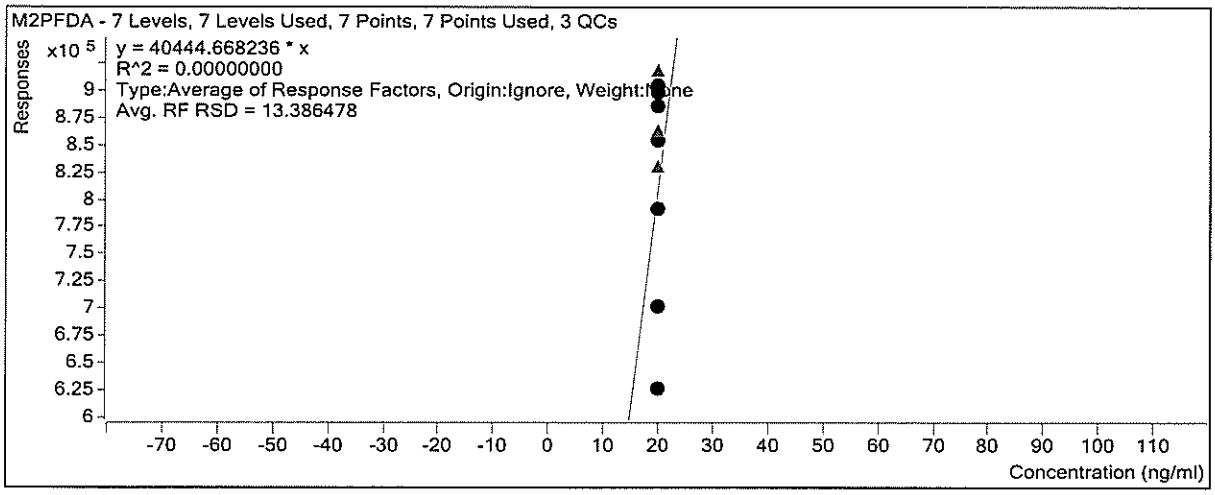
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	194843	5.0000	38968.6328
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	195020	5.0000	39004.0788
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	199691	5.0000	39938.1428
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	212829	5.0000	42565.8711
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	188651	5.0000	37730.1294
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	180583	5.0000	36116.6757
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	157009	5.0000	31401.8716

Instrument ISTD *M2PFDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	898737	20.0000	44936.8325
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	885940	20.0000	44297.0030
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	903949	20.0000	45197.4694
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	854532	20.0000	42726.5989
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	791172	20.0000	39558.5799

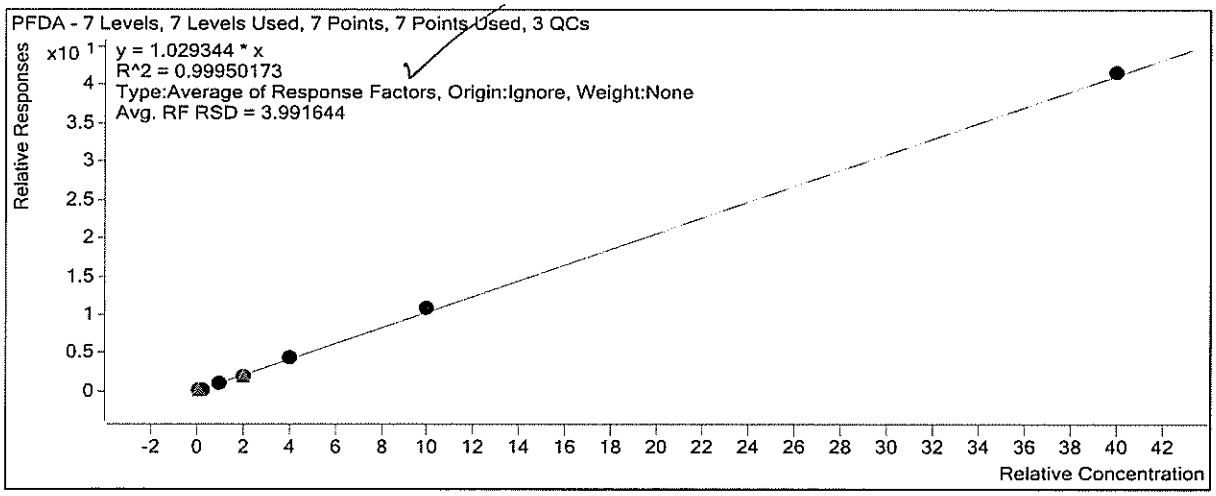
Quantitative Analysis Calibration Report

K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	702038	20.0000	35101.8909
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	625886	20.0000	31294.3031



Target Compound *PFDA*

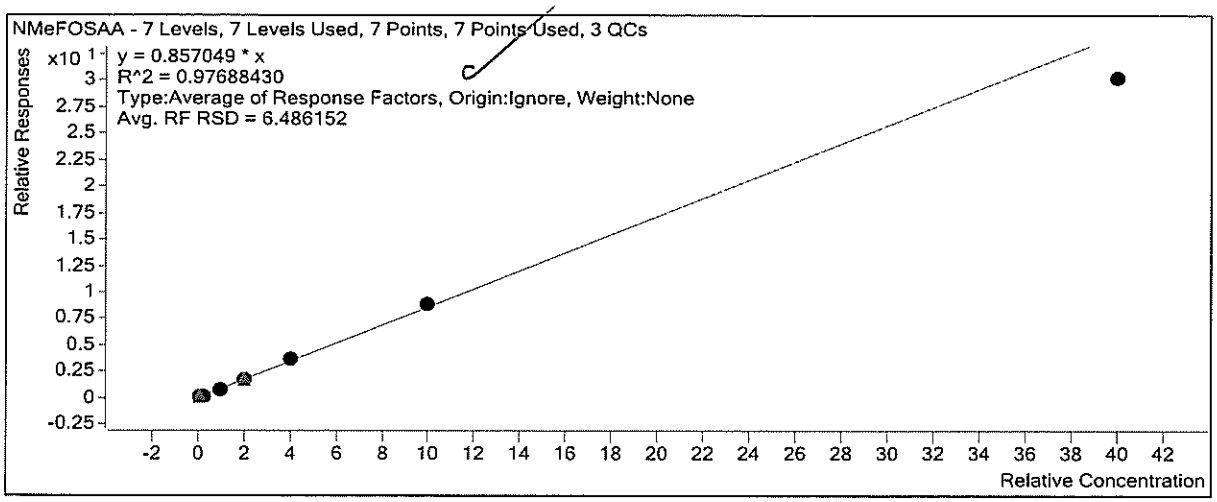
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	19577	0.5000	1.0048
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	48978	1.2500	1.0046
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	196056	5.0000	0.9818
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	427537	10.0000	1.0044
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	815350	20.0000	1.0805
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	1961253	50.0000	1.0861
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	6552303	200.0000	1.0433



Target Compound *PFNS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	2753	0.4810	1.0260
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	6911	1.2025	1.0069
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	27130	4.8100	0.9420

Quantitative Analysis Calibration Report



Extracted ISTD *M8FOSA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	63992	5.0000	12798.3573
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	64974	5.0000	12994.8963
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	66207	5.0000	13241.3749
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	69724	5.0000	13944.8130
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	64189	5.0000	12837.8039
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	63153	5.0000	12630.6453
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	62373	5.0000	12474.6447

Target Compound *FOSA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	6142	0.5000	0.9598
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	16723	1.2500	1.0295
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	66997	5.0000	1.0119
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	146091	10.0000	1.0476
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	274531	20.0000	1.0692
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	680383	50.0000	1.0774
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	2504758	200.0000	1.0039

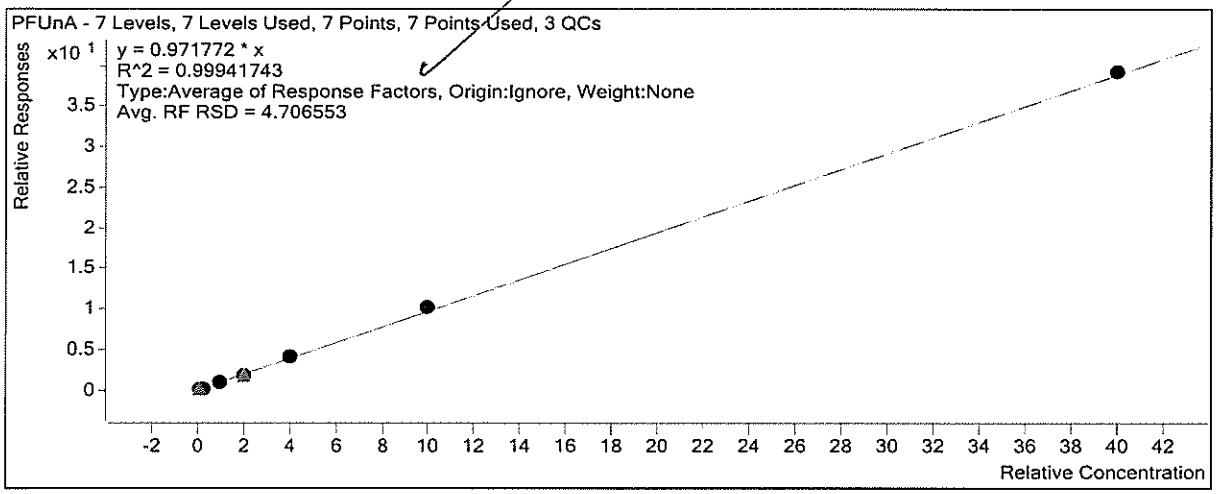
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	33535	5.0000	6707.0907
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	27994	5.0000	5598.7819

Extracted ISTD *M7PFUnA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	192289	5.0000	38457.8796
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	193666	5.0000	38733.2215
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	201164	5.0000	40232.7725
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	217688	5.0000	43537.5447
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	193109	5.0000	38621.8277
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	184461	5.0000	36892.1765
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	161029	5.0000	32205.7817

Target Compound *PFUnA*

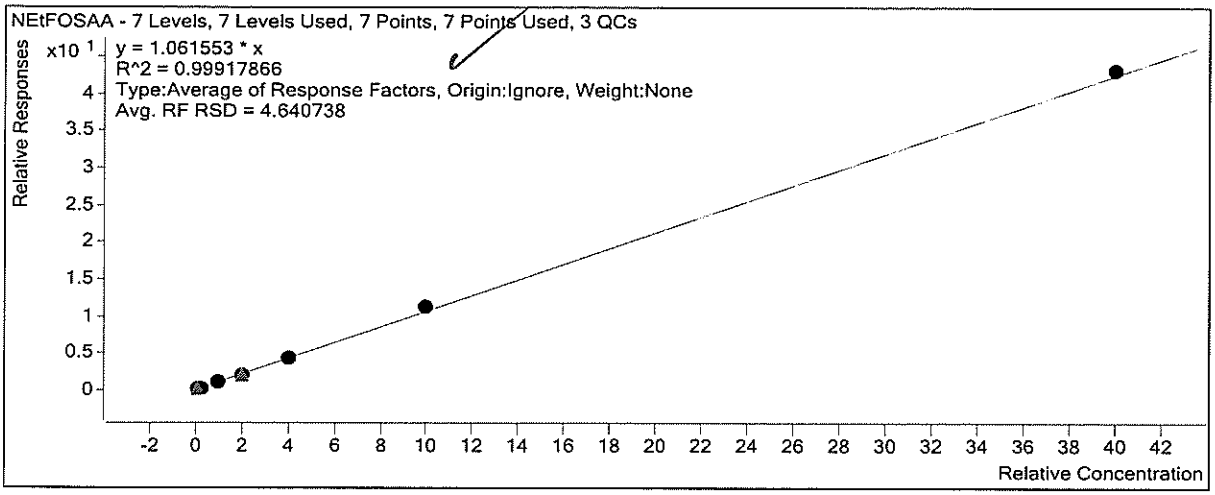
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	17938	0.5000	0.9329
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	45799	1.2500	0.9459
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	186228	5.0000	0.9258
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	412673	10.0000	0.9479
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	795643	20.0000	1.0300
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	1911178	50.0000	1.0361
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	6337339	200.0000	0.9839



Target Compound *NEtFOSAA*

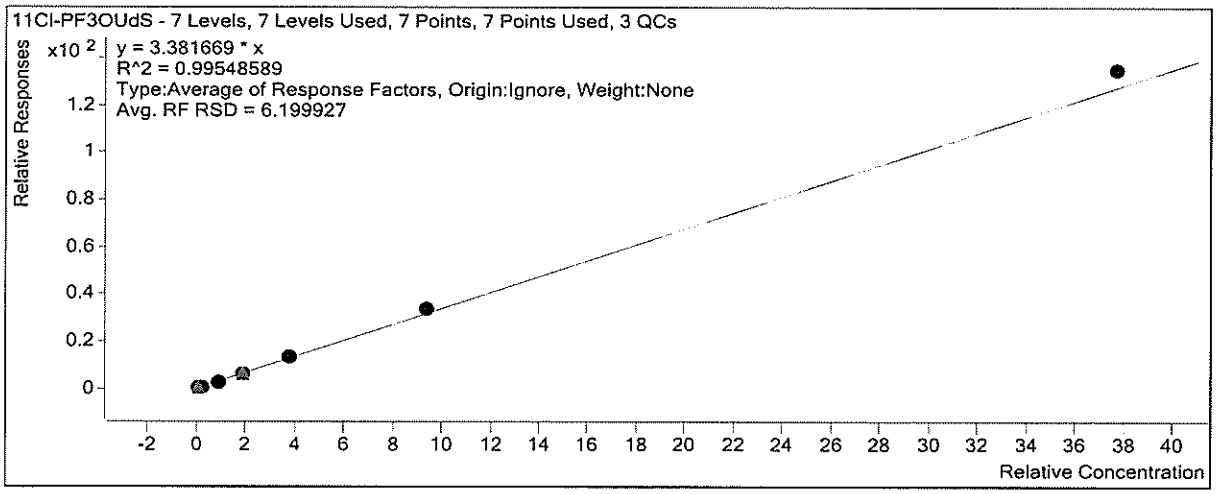
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	3826	0.5000	1.0133
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	9465	1.2500	1.0442
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	38650	5.0000	1.0105
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	86033	10.0000	1.0332
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	160551	20.0000	1.1129
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	380868	50.0000	1.1357
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	1210472	200.0000	1.0810

Quantitative Analysis Calibration Report



Target Compound *11Cl-PF3OUdS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	8297	0.4715	3.1539
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	21976	1.1788	3.2662
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	89348	4.7150	3.1648
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	198981	9.4300	3.2881
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	389077	18.8600	3.6088
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	936025	47.1500	3.6035
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	3324600	188.6000	3.5864



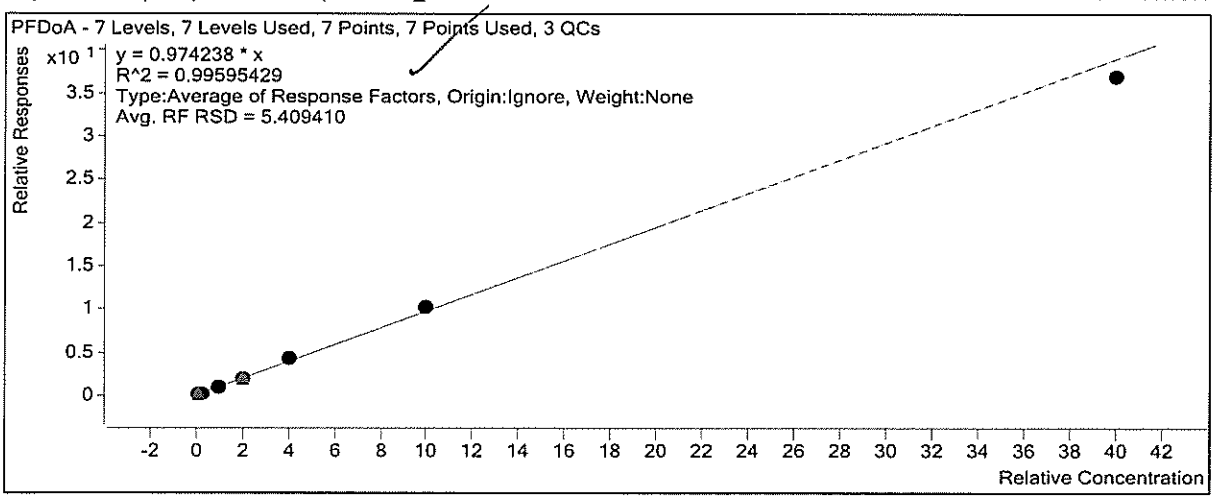
Extracted ISTD *MPFDoA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	217724	5.0000	43544.7152
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	220310	5.0000	44061.9769
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	232015	5.0000	46403.0777
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	245609	5.0000	49121.7472
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	218899	5.0000	43779.8610

K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	215831	5.0000	43166.2876
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	208439	5.0000	41687.8413

Target Compound *PFDoA*

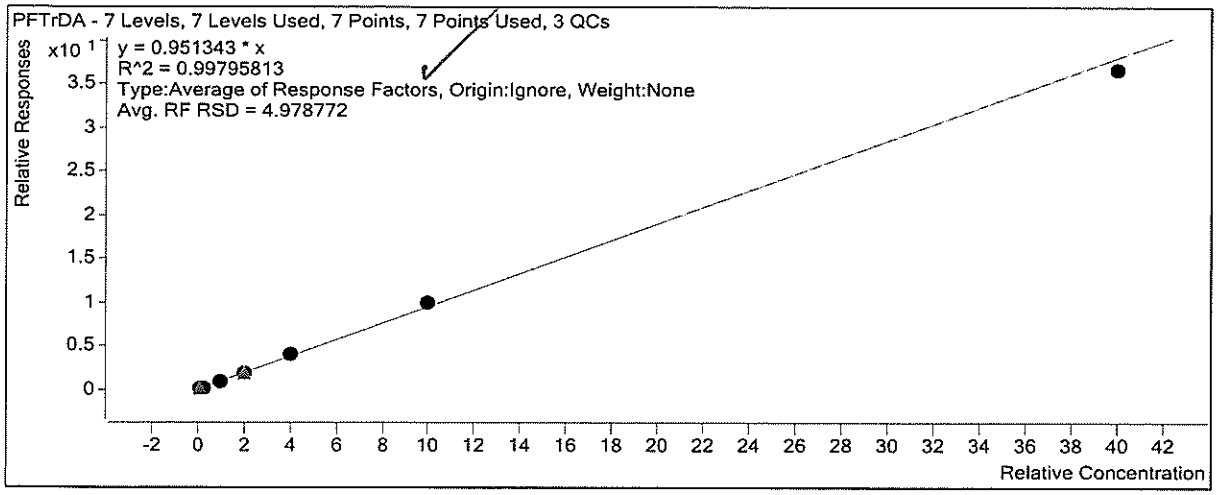
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	20367	0.5000	0.9355
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	54008	1.2500	0.9806
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	213968	5.0000	0.9222
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	477101	10.0000	0.9713
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	927660	20.0000	1.0595
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	2214519	50.0000	1.0260
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	7709249	200.0000	0.9246



Target Compound *10:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	2350	0.4820	3.0487
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	5839	1.2050	3.0229
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	23997	4.8200	3.1347
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	53501	9.6400	3.0815
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	101565	19.2800	3.6105
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	240181	48.2000	3.7129
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☐	1000272	192.8000	3.9827

Quantitative Analysis Calibration Report



Extracted ISTD *d9-NEtFOSE*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	12063	5.0000	2412.6725
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	12294	5.0000	2458.7413
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	12902	5.0000	2580.3920
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	13369	5.0000	2673.7948
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	12329	5.0000	2465.7587
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	11793	5.0000	2358.5704
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	12451	5.0000	2490.1944

Extracted ISTD *d-NEtFOSA*

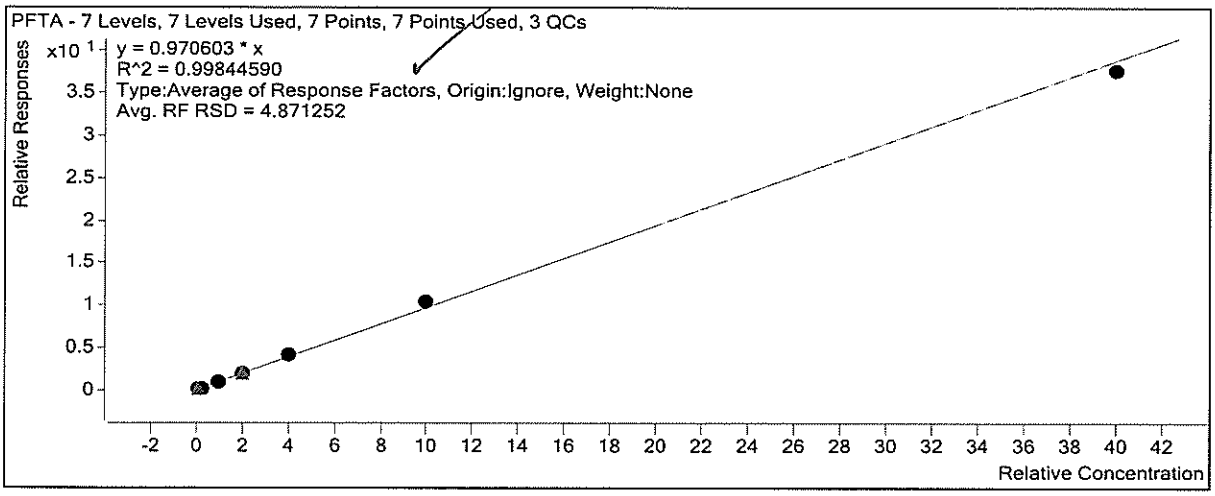
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	13673	5.0000	2734.6127
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	14149	5.0000	2829.7687
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	14545	5.0000	2908.9751
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	15794	5.0000	3158.7675
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	14091	5.0000	2818.2568
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	13999	5.0000	2799.7208
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	13794	5.0000	2758.7556

Target Compound *NEtFOSE*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	1119	0.5000	0.9277
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	2816	1.2500	0.9162
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	10795	5.0000	0.8367
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	22870	10.0000	0.8553
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	45722	20.0000	0.9271
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	110630	50.0000	0.9381
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	539221	200.0000	1.0827

Quantitative Analysis Calibration Report

K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	2270381	50.0000	1.0355
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	8246673	200.0000	0.9429



Extracted ISTD *M2PFTA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	216514	5.0000	43302.8697
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	222255	5.0000	44451.0438
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	231625	5.0000	46324.9238
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	258473	5.0000	51694.5841
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	221711	5.0000	44342.2090
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	219253	5.0000	43850.6822
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	218653	5.0000	43730.6661

Extracted ISTD *M2PFHxDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	13735	5.0000	2746.9906
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	13522	5.0000	2704.3651
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	14277	5.0000	2855.4165
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	16119	5.0000	3223.8693
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	14167	5.0000	2833.4406
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	13835	5.0000	2766.9151
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	14076	5.0000	2815.2345

Target Compound *PFHxDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
K:\MassHunter\Data\2210809ACAL\2210809A_2.d	Calibration	1	☑	17456	0.5000	12.7091
K:\MassHunter\Data\2210809ACAL\2210809A_3.d	Calibration	2	☑	41566	1.2500	12.2960
K:\MassHunter\Data\2210809ACAL\2210809A_4.d	Calibration	3	☑	159636	5.0000	11.1813
K:\MassHunter\Data\2210809ACAL\2210809A_9.d	Calibration	4	☑	372035	10.0000	11.5400
K:\MassHunter\Data\2210809ACAL\2210809A_6.d	Calibration	5	☑	704175	20.0000	12.4261
K:\MassHunter\Data\2210809ACAL\2210809A_7.d	Calibration	6	☑	1744120	50.0000	12.6070
K:\MassHunter\Data\2210809ACAL\2210809A_8.d	Calibration	7	☑	8490799	200.0000	15.0801

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ3
Analysis Date:	08/11/2021 04:38	Lab File ID:	2210810B_13.d
Analytical Method:		Analytical Batch:	718449

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	9510	9540	✓ 100	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9680	101	70	130	
NEtFOSAA	ng/L	10000	9470	95	70	130	
NMeFOSAA	ng/L	10000	9850	99	70	130	
Perfluorobutanoic acid	ng/L	10000	9850	99	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8520	96	70	130	
Perfluorodecanoic acid	ng/L	10000	9640	96	70	130	
Perfluorododecanoic acid	ng/L	10000	9810	98	70	130	
Perfluoroheptanoic acid	ng/L	10000	9610	96	70	130	
Perfluorohexanoic acid	ng/L	10000	9560	96	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8820	96	70	130	
Perfluorononanoic acid	ng/L	10000	9630	96	70	130	
Perfluorooctanoic acid	ng/L	10000	9570	96	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8970	97	70	130	
Perfluoropentanoic acid	ng/L	10000	9840	98	70	130	
Perfluorotetradecanoic acid	ng/L	10000	10000	100	70	130	
Perfluorotridecanoic acid	ng/L	10000	10100	101	70	130	
Perfluoroundecanoic acid	ng/L	10000	9580	96	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ3
Analysis Date:	08/11/2021 08:33	Lab File ID:	2210810B_29.d
Analytical Method:		Analytical Batch:	718449

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	9510	9540	100	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	10200	106	70	130	
NEtFOSAA	ng/L	10000	9450	95	70	130	
NMeFOSAA	ng/L	10000	10200	102	70	130	
Perfluorobutanoic acid	ng/L	10000	9870	99	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8460	95	70	130	
Perfluorodecanoic acid	ng/L	10000	9690	97	70	130	
Perfluorododecanoic acid	ng/L	10000	9980	100	70	130	
Perfluoroheptanoic acid	ng/L	10000	9690	97	70	130	
Perfluorohexanoic acid	ng/L	10000	9600	96	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8800	96	70	130	
Perfluorononanoic acid	ng/L	10000	9670	97	70	130	
Perfluorooctanoic acid	ng/L	10000	9840	98	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	8910	96	70	130	
Perfluoropentanoic acid	ng/L	10000	9890	99	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9800	98	70	130	
Perfluorotridecanoic acid	ng/L	10000	10400	104	70	130	
Perfluoroundecanoic acid	ng/L	10000	9680	97	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ3
Analysis Date:	08/11/2021 10:59	Lab File ID:	2210810B_39.d
Analytical Method:		Analytical Batch:	718449

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	9510	9290	98	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9580	100	70	130	
NEtFOSAA	ng/L	10000	9670	97	70	130	
NMeFOSAA	ng/L	10000	9810	98	70	130	
Perfluorobutanoic acid	ng/L	10000	9970	100	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8710	98	70	130	
Perfluorodecanoic acid	ng/L	10000	9410	94	70	130	
Perfluorododecanoic acid	ng/L	10000	9800	98	70	130	
Perfluoroheptanoic acid	ng/L	10000	9560	96	70	130	
Perfluorohexanoic acid	ng/L	10000	9670	97	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8800	96	70	130	
Perfluorononanoic acid	ng/L	10000	9770	98	70	130	
Perfluorooctanoic acid	ng/L	10000	9760	98	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	9010	97	70	130	
Perfluoropentanoic acid	ng/L	10000	9840	98	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9860	99	70	130	
Perfluorotridecanoic acid	ng/L	10000	10100	101	70	130	
Perfluoroundecanoic acid	ng/L	10000	9940	99	70	130	

FORM 7E - ORG

8I

INTERNAL STANDARD AREA SUMMARY

Report No:	221072807	Standard ID:	1450 (ISC)
Analyst:	ADA	Instrument ID:	QQQ3
Analysis Date:	08/11/21 01:57	Lab File ID:	2210810B_2.d
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	718449

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		781293		594597		714131		130438	
CLIENT SAMPLE ID	*LAB SAMP ID*		*#*		*#*		*#*		*#*
MB2223697	2223697	809787		612389		734618		134527	
LCS2223698	2223698	785266		601795		712008		130950	
LCSD2223699	2223699	775326		600378		721005		130525	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

LC-QQQ Instrument Run Log

Agilent

Instrument:	QQQ 4	**LIMS Batch (HBN):**	718586
Instrument Batch:	2210811B.batch.bin	**20mM NH4OAc (ID/Exp):**	019-12-4 8/13/21
Current ICAL Batch:	2210811BCAL	**Methanol (ID/Exp):**	2130577 5/31/26
ICAL Std (ID/Exp):	019-12-3 1/19/22	**EIS Mix (ID/Exp):**	019-11-1 1/19/22
ICV Std (ID/Exp):	019-9-2 2/2/22	**IIS Mix (ID/Exp):**	019-11-5 2/9/22

Acquisition time	Data File	Name	Type	Dilution	Comment
08/11/21 17:41:51	2210811B_01.d	1204 RT TEST	QC	1	RXJ,QQQ4;TEST
08/11/21 18:09:47	2210811B_02.d	1201	Sample	1	RXJ,QQQ4;ICAL S/N low NMeFOSA and NEtFOSE
08/11/21 18:24:35	2210811B_03.d	1202	Cal	1	RXJ,QQQ4;ICAL
08/11/21 18:39:11	2210811B_04.d	1203	Cal	1	RXJ,QQQ4;ICAL
08/11/21 18:53:46	2210811B_05.d	1204	Cal	1	RXJ,QQQ4;ICAL
08/11/21 19:08:22	2210811B_06.d	1205	Cal	1	RXJ,QQQ4;ICAL
08/11/21 19:22:58	2210811B_07.d	1206	Cal	1	RXJ,QQQ4;ICAL
08/11/21 19:38:06	2210811B_08.d	1201	Cal	1	RXJ,QQQ4;ICAL
08/11/21 19:52:42	2210811B_09.d	1207	Cal	1	RXJ,QQQ4;ICAL
08/11/21 20:13:19	2210811B_10.d	1500	Blank	1	RXJ,QQQ4;BLANK
08/11/21 20:28:04	2210811B_11.d	1600	Sample	1	RXJ,QQQ4;ICV
08/11/21 20:42:40	2210811B_12.d	1450	QC	1	RXJ,QQQ4;CCV
08/11/21 21:09:05	2210811B_13.d	2225095	Sample	1	RXJ,QQQ4;718318
08/11/21 21:23:49	2210811B_14.d	2225096	QC	1	RXJ,QQQ4;718318
08/11/21 21:38:26	2210811B_15.d	2225097	QC	1	RXJ,QQQ4;718318
08/11/21 21:53:03	2210811B_16.d	22107280721	Sample	1	RXJ,QQQ4;718318
08/11/21 22:07:40	2210811B_17.d	22107297901	Sample	1	RXJ,QQQ4;718318
08/11/21 22:22:16	2210811B_18.d	22107297902	Sample	1	RXJ,QQQ4;718318
08/11/21 22:36:52	2210811B_19.d	22108052826	Sample	1	RXJ,QQQ4;718318
08/11/21 22:51:28	2210811B_20.d	22108052827	Sample	1	RXJ,QQQ4;718318
08/11/21 23:06:05	2210811B_21.d	22108052828	Sample	1	RXJ,QQQ4;718318
08/11/21 23:20:42	2210811B_22.d	22108052829	Sample	1	RXJ,QQQ4;718318
08/11/21 23:35:21	2210811B_23.d	22108052830	Sample	1	RXJ,QQQ4;718318
08/11/21 23:49:57	2210811B_24.d	22108052831	Sample	1	RXJ,QQQ4;718318
08/12/21 00:04:33	2210811B_25.d	22108052832	Sample	1	RXJ,QQQ4;718318
08/12/21 00:19:09	2210811B_26.d	1400	QC	1	RXJ,QQQ4;CCV
08/12/21 00:33:45	2210811B_27.d	22108052833	Sample	1	RXJ,QQQ4;718318
08/12/21 00:48:23	2210811B_28.d	22108052834	Sample	1	RXJ,QQQ4;718318
08/12/21 01:03:00	2210811B_29.d	22108065705	Sample	1	RXJ,QQQ4;718318
08/12/21 01:17:36	2210811B_30.d	22108065734	Sample	1	RXJ,QQQ4;718318
08/12/21 01:32:13	2210811B_31.d	22108065735	Sample	1	RXJ,QQQ4;718318
08/12/21 01:46:50	2210811B_32.d	22108091921	Sample	1	RXJ,QQQ4;718318
08/12/21 02:01:29	2210811B_33.d	22108091922	Sample	1	RXJ,QQQ4;718318
08/12/21 02:16:05	2210811B_34.d	22108090902	Sample	1	RXJ,QQQ4;718318
08/12/21 02:30:41	2210811B_35.d	22108090906	Sample	1	RXJ,QQQ4;718318
08/12/21 02:45:17	2210811B_36.d	22108090907	Sample	1	RXJ,QQQ4;718318
08/12/21 02:59:54	2210811B_37.d	1400	QC	1	RXJ,QQQ4;CCV

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/11/2021 20:42	Lab File ID:	2210811B_12.d
Analytical Method:		Analytical Batch:	718586

ANALYTE	UNITS	TRUE	FOUND	%REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	3.81	3.70	97	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	3.84	3.63	95	70	130	
NEtFOSAA	ng/L	4.00	3.98	100	70	130	
NMeFOSAA	ng/L	4.00	4.42	110	70	130	
Perfluorobutanoic acid	ng/L	4.00	3.74	94	70	130	
Perfluorobutanesulfonic acid	ng/L	3.55	3.26	92	70	130	
Perfluorodecanoic acid	ng/L	4.00	3.67	92	70	130	
Perfluorododecanoic acid	ng/L	4.00	3.62	91	70	130	
Perfluoroheptanoic acid	ng/L	4.00	3.61	90	70	130	
Perfluorohexanoic acid	ng/L	4.00	3.70	93	70	130	
Perfluorohexanesulfonic acid	ng/L	3.66	3.62	99	70	130	
Perfluorononanoic acid	ng/L	4.00	3.65	91	70	130	
Perfluorooctanoic acid	ng/L	4.00	3.70	92	70	130	
Perfluorooctanesulfonic acid	ng/L	3.71	3.44	93	70	130	
Perfluoropentanoic acid	ng/L	4.00	3.68	92	70	130	
Perfluorotetradecanoic acid	ng/L	4.00	3.71	93	70	130	
Perfluorotridecanoic acid	ng/L	4.00	3.84	96	70	130	
Perfluoroundecanoic acid	ng/L	4.00	3.51	88	70	130	

FORM 7S - ORG

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/11/2021 20:28	Lab File ID:	2210811B_11.d
Analytical Method:		Analytical Batch:	718586

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	10000	10500	105	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	10100	10300	102	70	130	
NEtFOSAA	ng/L	10000	9570	96	70	130	
NMeFOSAA	ng/L	10000	10300	103	70	130	
Perfluorobutanoic acid	ng/L	10000	10100	101	70	130	
Perfluorobutanesulfonic acid	ng/L	10000	10200	102	70	130	
Perfluorodecanoic acid	ng/L	10000	10300	103	70	130	
Perfluorododecanoic acid	ng/L	10000	9860	99	70	130	
Perfluoroheptanoic acid	ng/L	10000	10100	101	70	130	
Perfluorohexanoic acid	ng/L	10100	10000	99	70	130	
Perfluorohexanesulfonic acid	ng/L	10000	10000	100	70	130	
Perfluorononanoic acid	ng/L	10000	10600	106	70	130	
Perfluorooctanoic acid	ng/L	10100	9720	96	70	130	
Perfluorooctanesulfonic acid	ng/L	10000	9130	91	70	130	
Perfluoropentanoic acid	ng/L	10100	10400	103	70	130	
Perfluorotetradecanoic acid	ng/L	10000	10300	103	70	130	
Perfluorotridecanoic acid	ng/L	10000	9370	94	70	130	
Perfluoroundecanoic acid	ng/L	10000	10000	100	70	130	

FORM 6I - ORG

4I

ORGANICS INSTRUMENT BLANK

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/11/2021 20:13	Lab File ID:	2210811B_10.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	718586

ANALYTE	*UNITS*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*	*#*
6:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.50	3.00	4.00	
8:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.06	3.00	4.00	
NEtFOSAA	ng/L	3.16	J	1.58	4.00	8.00	
NMeFOSAA	ng/L	3.07	J	0.90	4.00	8.00	
Perfluorobutanesulfonic acid	ng/L	2.00	U	0.62	2.00	4.00	
Perfluorobutanoic acid	ng/L	3.50	U	1.52	3.50	4.00	
Perfluorodecanoic acid	ng/L	3.00	U	1.44	3.00	4.00	
Perfluorododecanoic acid	ng/L	3.00	U	1.30	3.00	4.00	
Perfluoroheptanoic acid	ng/L	3.00	U	1.16	3.00	4.00	
Perfluorohexanesulfonic acid	ng/L	3.00	U	1.24	3.00	4.00	
Perfluorohexanoic acid	ng/L	2.00	U	0.94	2.00	4.00	
Perfluorononanoic acid	ng/L	2.00	U	0.98	2.00	4.00	
Perfluorooctanesulfonic acid	ng/L	2.00	U	0.76	2.00	4.00	
Perfluorooctanoic acid	ng/L	2.00	U	0.84	2.00	4.00	
Perfluoropentanoic acid	ng/L	2.00	U	0.88	2.00	4.00	
Perfluorotetradecanoic acid	ng/L	3.00	U	1.14	3.00	4.00	
Perfluorotridecanoic acid	ng/L	3.00	U	1.23	3.00	4.00	
Perfluoroundecanoic acid	ng/L	3.00	U	1.24	3.00	4.00	

* - Result greater than 1/2 LOQ

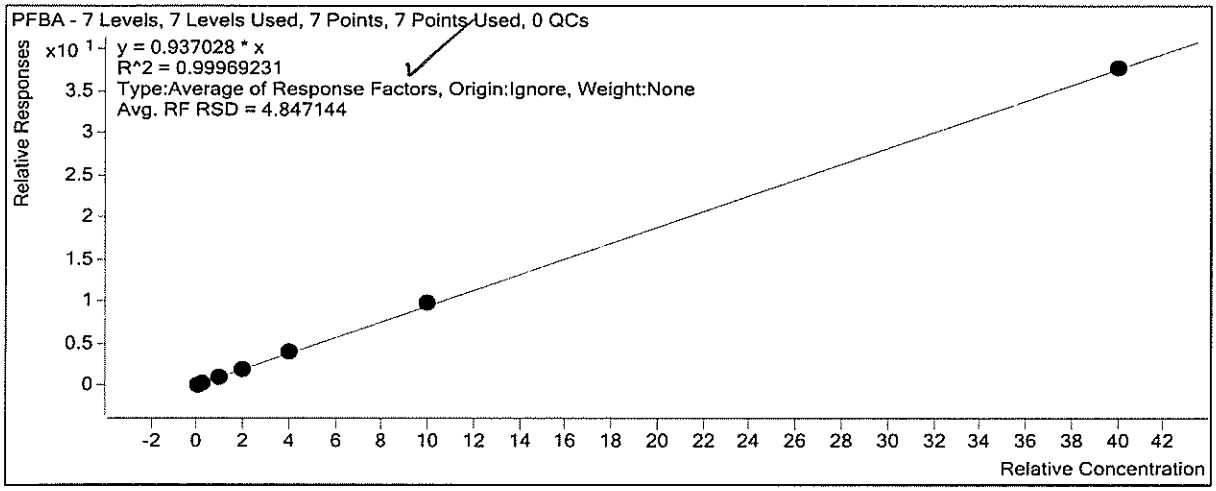
Quantitative Analysis Calibration Report

Batch Data Path	D:\MassHunter\Data\QQQ4\2210811BCAL\QuantResults\2210811B.batch.bin		
Analysis Time	8/12/2021 4:03 PM	**Analyst Name**	GCAL\lcms
Report Time	8/12/2021 4:07 PM	**Reporter Name**	GCAL\lcms
Last Calib Update	8/11/2021 8:10 PM	**Batch State**	Processed

Calibration Info

Target Compound *PFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	10997	0.5000	0.8588
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	27317	1.2500	0.9277
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	110050	5.0000	0.9122
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	243531	10.0000	0.9399
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	478346	20.0000	0.9910
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	1173646	50.0000	0.9881
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	4582770	200.0000	0.9416

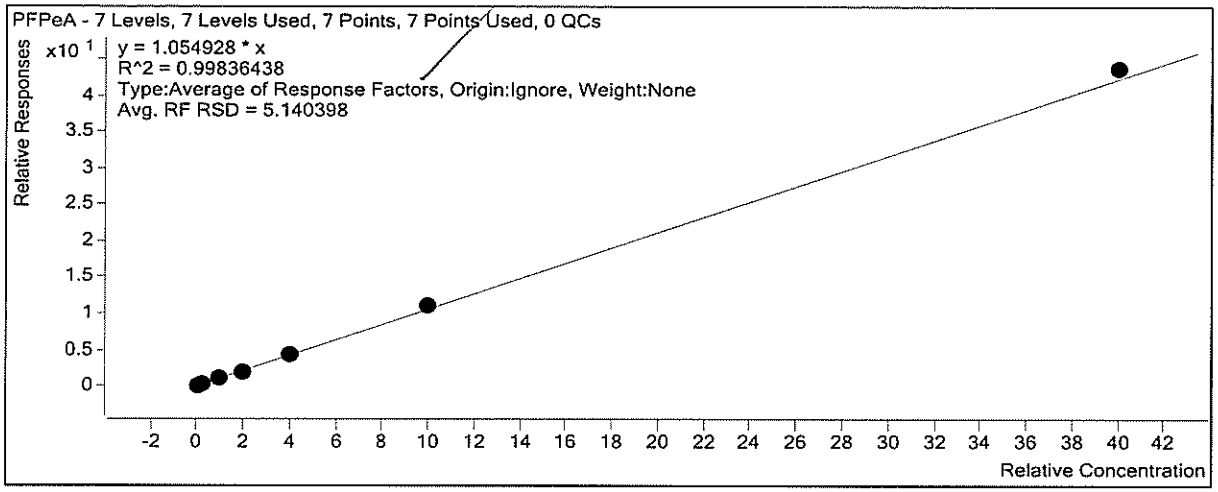


Extracted ISTD *MPFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	128051	5.0000	25610.1061
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	117789	5.0000	23557.7782
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	120644	5.0000	24128.8988
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	129557	5.0000	25911.3525
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	120675	5.0000	24135.0225
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	118775	5.0000	23754.9416
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	121678	5.0000	24335.5002

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	15709	0.5000	0.9714
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	39023	1.2500	1.0366
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	159972	5.0000	1.0207
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	347346	10.0000	1.0336
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	685107	20.0000	1.1202
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	1657003	50.0000	1.1112
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	6422737	200.0000	1.0907



Extracted ISTD *M3PFBS*

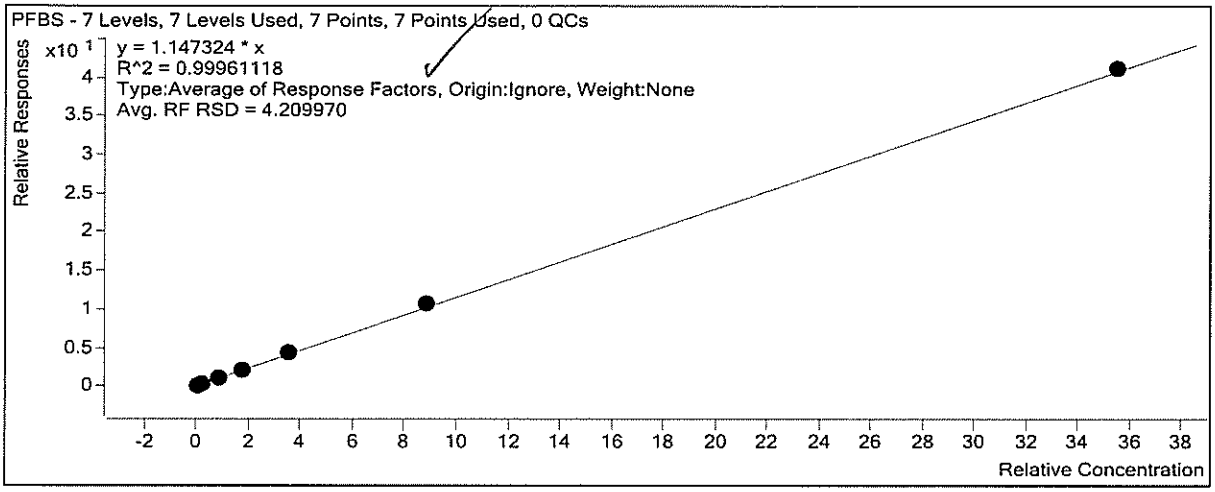
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	55779	5.0000	11155.7052
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	52209	5.0000	10441.8650
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	53280	5.0000	10656.0374
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	57673	5.0000	11534.6103
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	52291	5.0000	10458.2558
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	50567	5.0000	10113.3339
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	49043	5.0000	9808.5687

Target Compound *PFBS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	5405	0.4435	1.0925

Quantitative Analysis Calibration Report

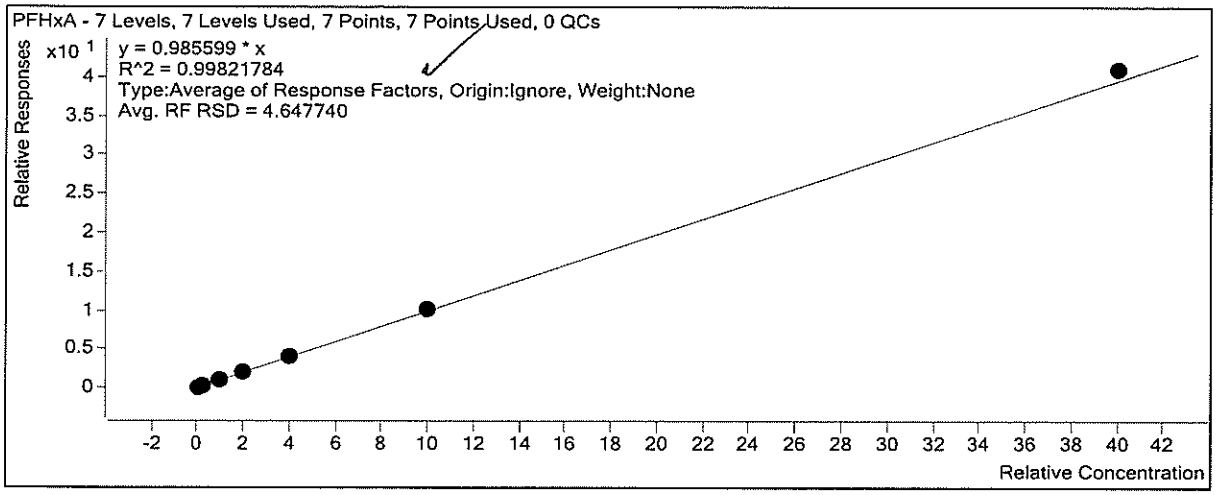
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	12832	1.1088	1.1083
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	52683	4.4350	1.1148
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	116088	8.8700	1.1346
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	225896	17.7400	1.2176
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	539778	44.3500	1.2034
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	2018552	177.4000	1.1601



Target Compound *PFMBA*

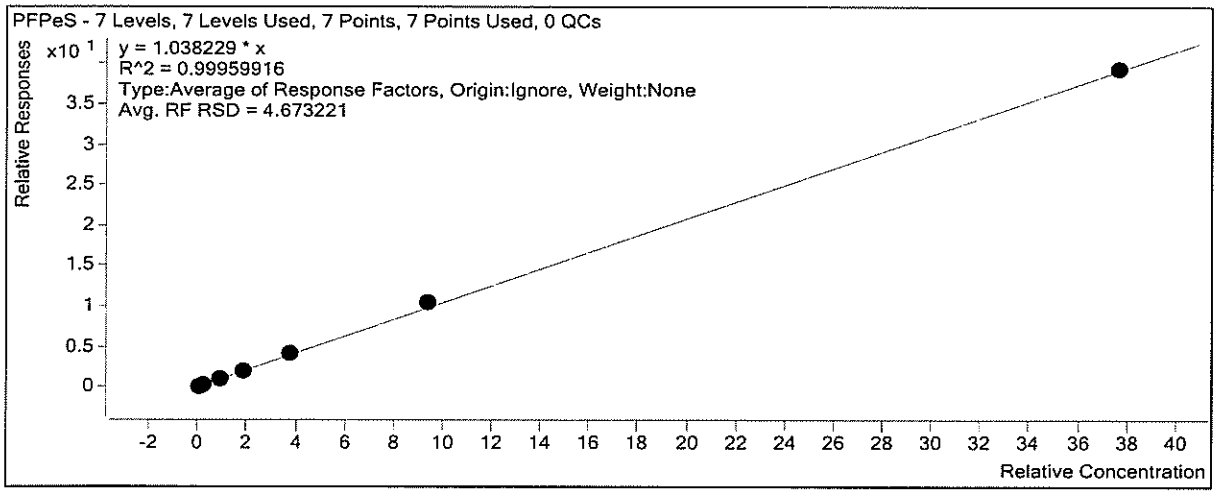
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	7227	0.5000	0.3792
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	18011	1.2500	0.4194
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	74369	5.0000	0.4163
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	164420	10.0000	0.4236
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	322788	20.0000	0.4565
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	783340	50.0000	0.4491
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☐	4039722	200.0000	0.5973

Quantitative Analysis Calibration Report



Target Compound *PFPeS*

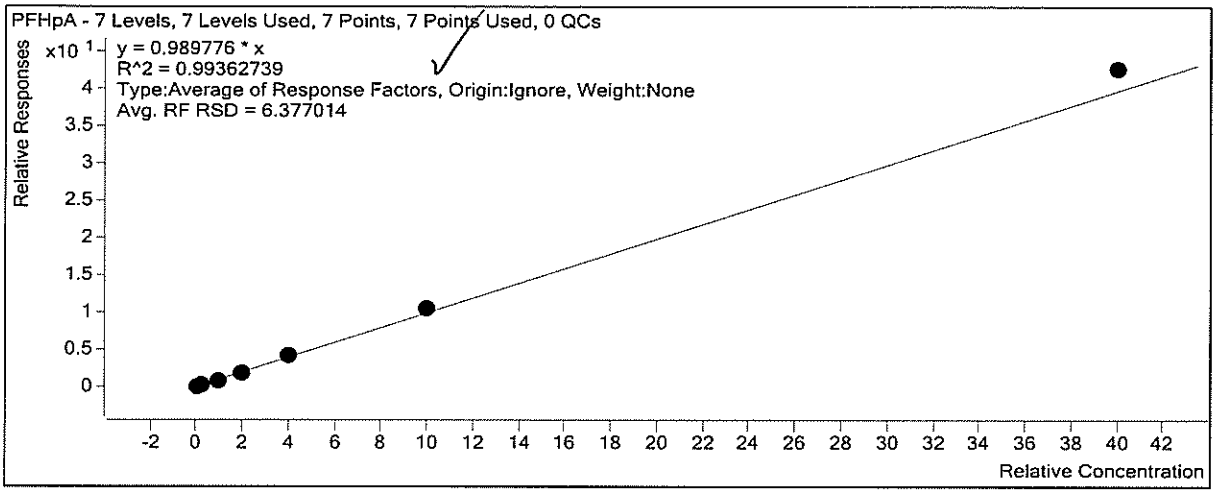
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	5190	0.4705	0.9887
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	12371	1.1763	1.0072
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	50331	4.7050	1.0039
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	110023	9.4100	1.0137
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	218063	18.8200	1.1079
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	524239	47.0500	1.1017
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	1928157	188.2000	1.0445



Target Compound *HFPO-DA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	650490	10.0000	0.9777
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	1282896	20.0000	1.0393
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	3140339	50.0000	1.0423
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	12666655	200.0000	1.0637



Extracted ISTD *M4PFHpA*

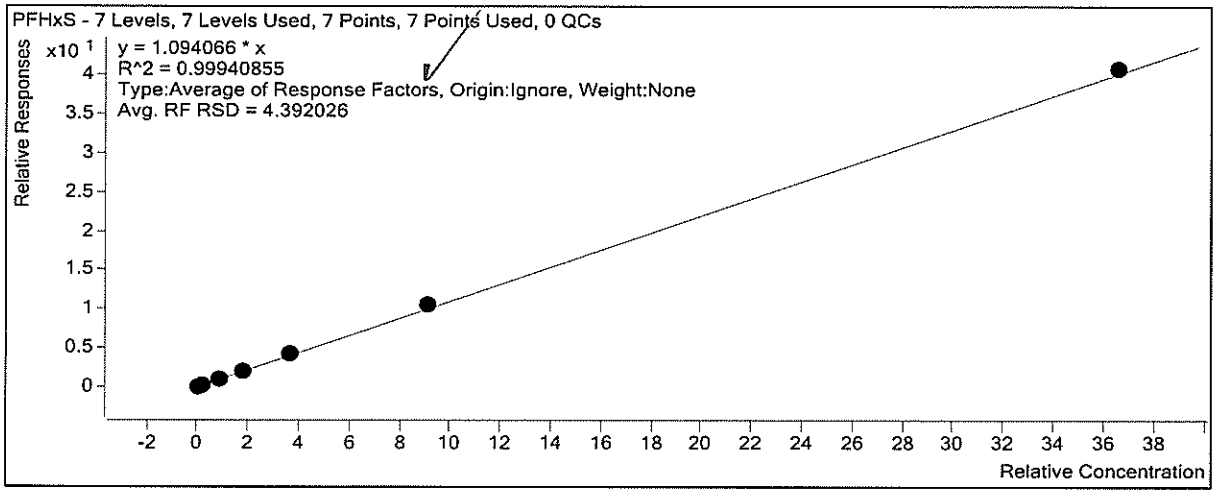
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	328568	5.0000	65713.6667
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	301855	5.0000	60371.0136
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	309921	5.0000	61984.2687
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	332677	5.0000	66535.3420
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	308592	5.0000	61718.4163
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	301277	5.0000	60255.4574
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	297715	5.0000	59542.9179

Target Compound *PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	4368	0.4570	1.0258
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	10530	1.1425	1.0880
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	41600	4.5700	1.0433
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	93293	9.1400	1.0895
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	182125	18.2800	1.1481
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	441942	45.7000	1.1515

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	1643175	182.8000	1.1124



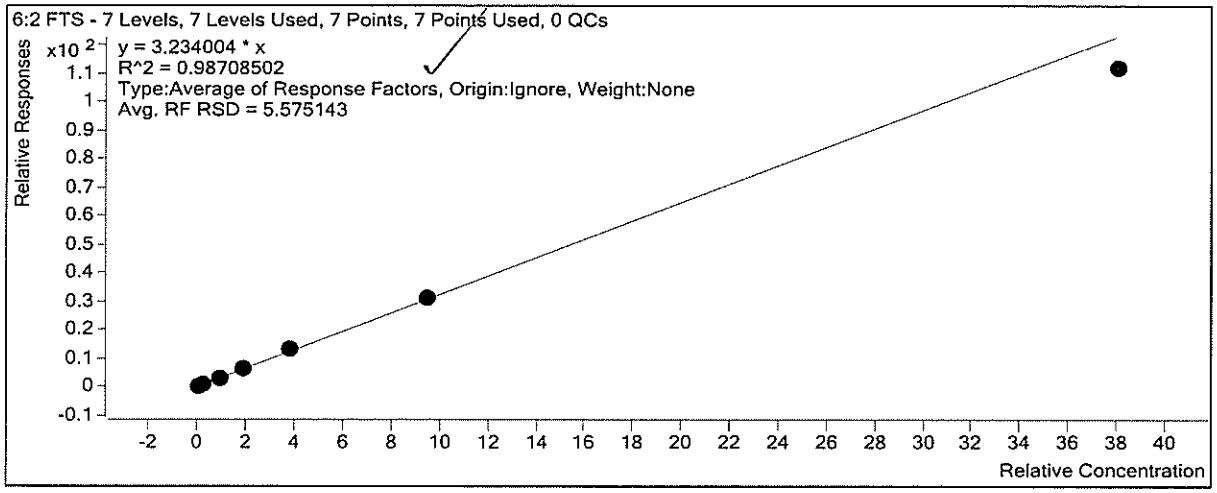
Extracted ISTD *M3PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	46590	5.0000	9318.0904
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	42358	5.0000	8471.6626
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	43627	5.0000	8725.4222
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	46844	5.0000	9368.8745
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	43390	5.0000	8678.0165
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	41991	5.0000	8398.2488
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	40403	5.0000	8080.6355

Target Compound *ADONA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	34767	0.4725	1.4789
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	86029	1.1813	1.6241
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	352187	4.7250	1.5980
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	766408	9.4500	1.6158
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	1517544	18.9000	1.7183
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	3738331	47.2500	1.7702
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	15443079	189.0000	1.8575

Quantitative Analysis Calibration Report



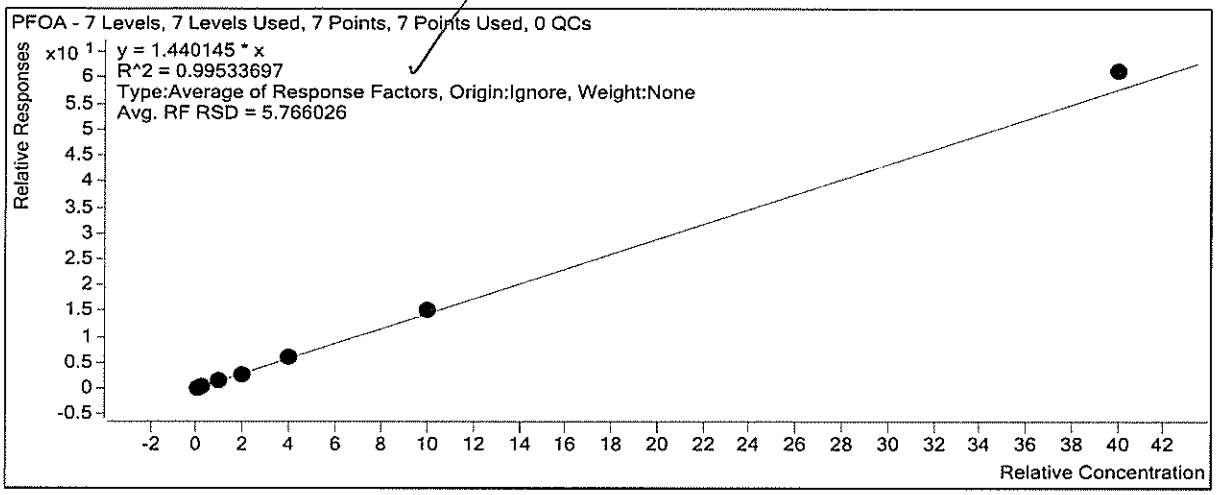
Extracted ISTD *M8PFOA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	248780	5.0000	49755.9398
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	224200	5.0000	44840.0439
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	233224	5.0000	46644.8183
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	250957	5.0000	50191.4641
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	233645	5.0000	46729.0629
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	223477	5.0000	44695.4723
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	219942	5.0000	43988.4169

Instrument ISTD *MPFOA*

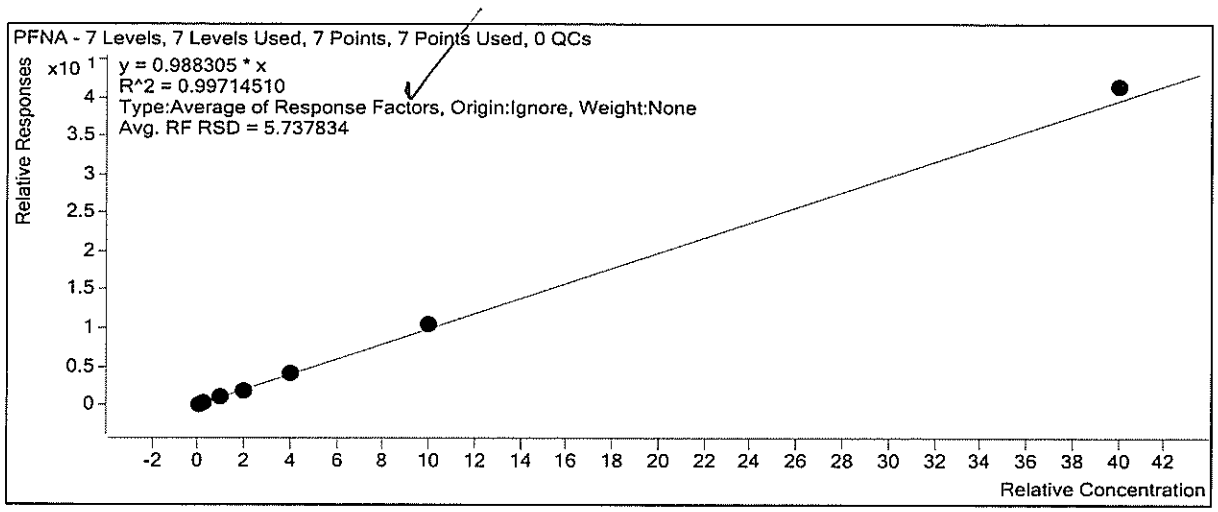
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	1798379	25.0000	71935.1453
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	1703757	25.0000	68150.2988
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	1729801	25.0000	69192.0250
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	1657579	25.0000	66303.1497
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	1688488	25.0000	67539.5081
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	1610809	25.0000	64432.3489
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	1568434	25.0000	62737.3588

D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	32190	0.5000	1.2939
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	79526	1.2500	1.4188
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	327155	5.0000	1.4027
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	713382	10.0000	1.4213
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	1390398	20.0000	1.4877
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	3411266	50.0000	1.5264
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	13460554	200.0000	1.5300



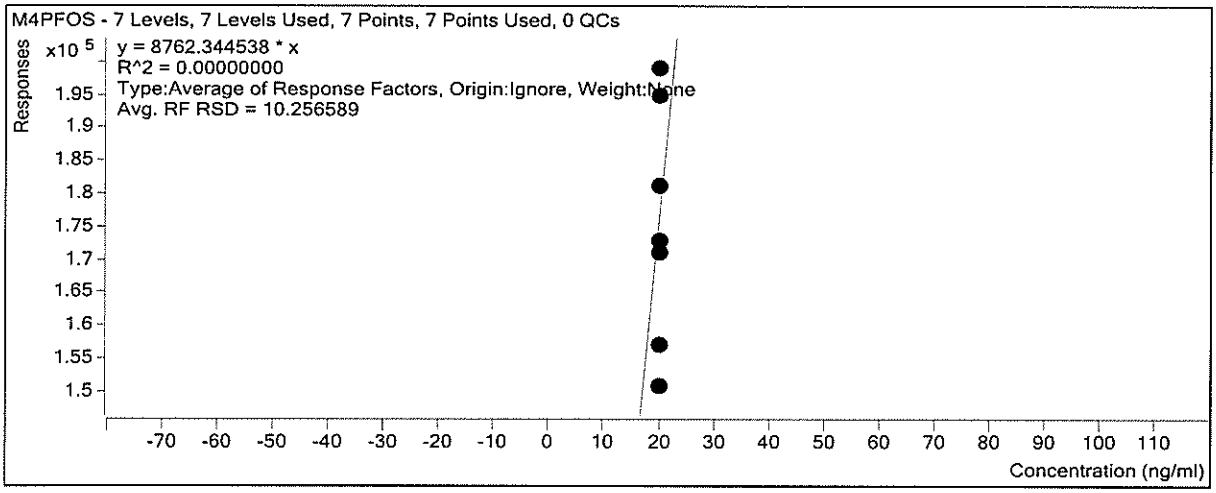
Target Compound *PFHpS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	4401	0.4765	0.9912
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	10435	1.1913	1.0340
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	44094	4.7650	1.0606
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	96244	9.5300	1.0779
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	190400	19.0600	1.1511
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	451793	47.6500	1.1290
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	1631524	190.6000	1.0593



Instrument ISTD *M4PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	172830	20.0000	8641.5127
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	194792	20.0000	9739.6248
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	199024	20.0000	9951.2107
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	181268	20.0000	9063.4179
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	171049	20.0000	8552.4510
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	156918	20.0000	7845.8800
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	150846	20.0000	7542.3147



Extracted ISTD *M8PFOS*

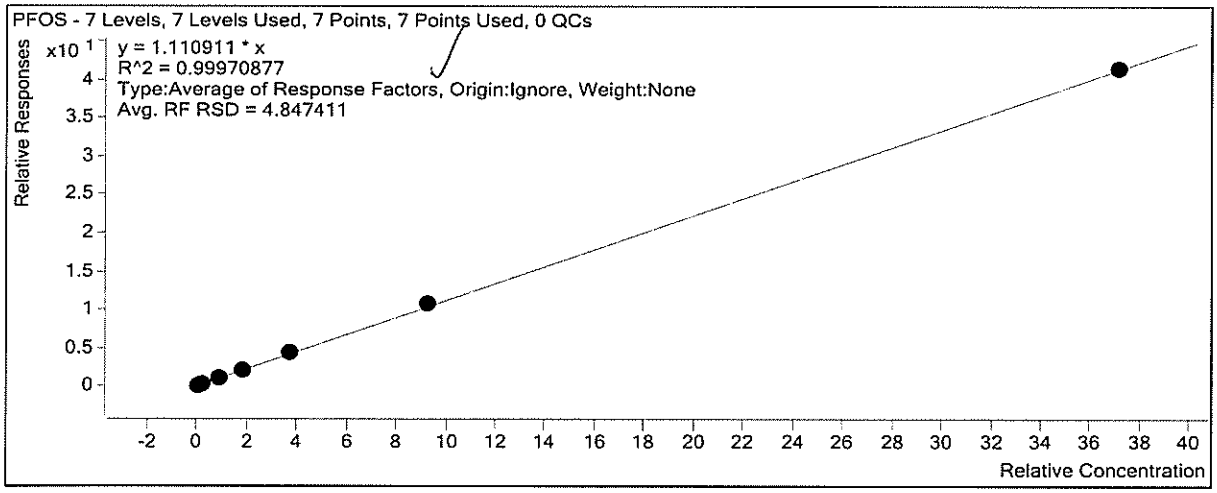
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	42707	5.0000	8541.3642
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	39501	5.0000	7900.2818
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	41005	5.0000	8201.0229
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	43699	5.0000	8739.7459
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	39625	5.0000	7924.9652
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	39068	5.0000	7813.5029
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	37418	5.0000	7483.6142

Target Compound *PFOS*

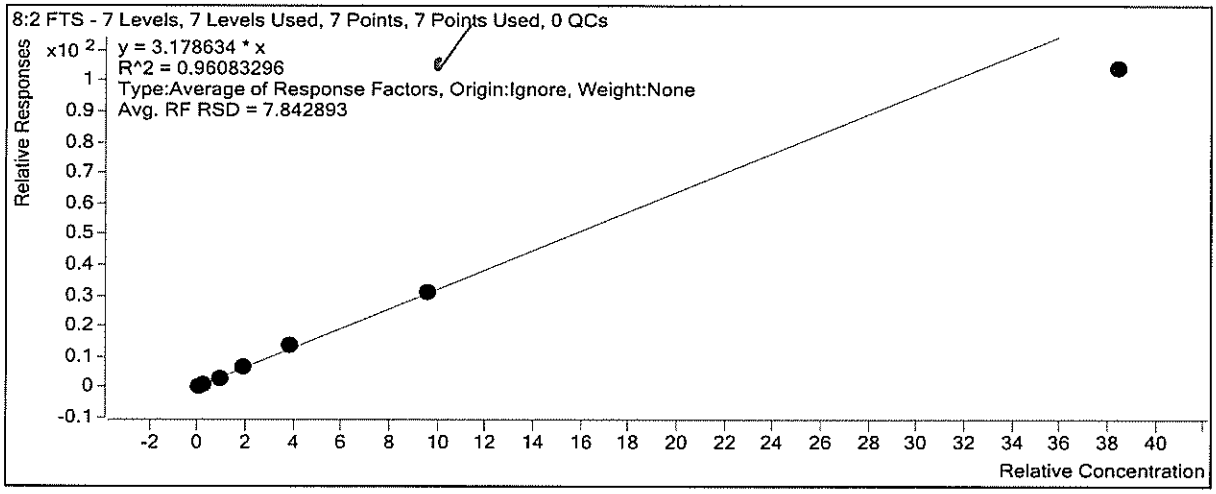
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	4198	0.4640	1.0592
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	10076	1.1600	1.0995
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	39662	4.6400	1.0423
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	89271	9.2800	1.1007
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	175473	18.5600	1.1930
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	422690	46.4000	1.1659
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	1549851	185.6000	1.1158



Target Compound *9Cl-PF3ONS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	27328	0.4665	6.8586
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	68611	1.1663	7.4463
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	275817	4.6650	7.2094

D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	976897	192.0000	2.7075



Extracted ISTD *M6PFDA*

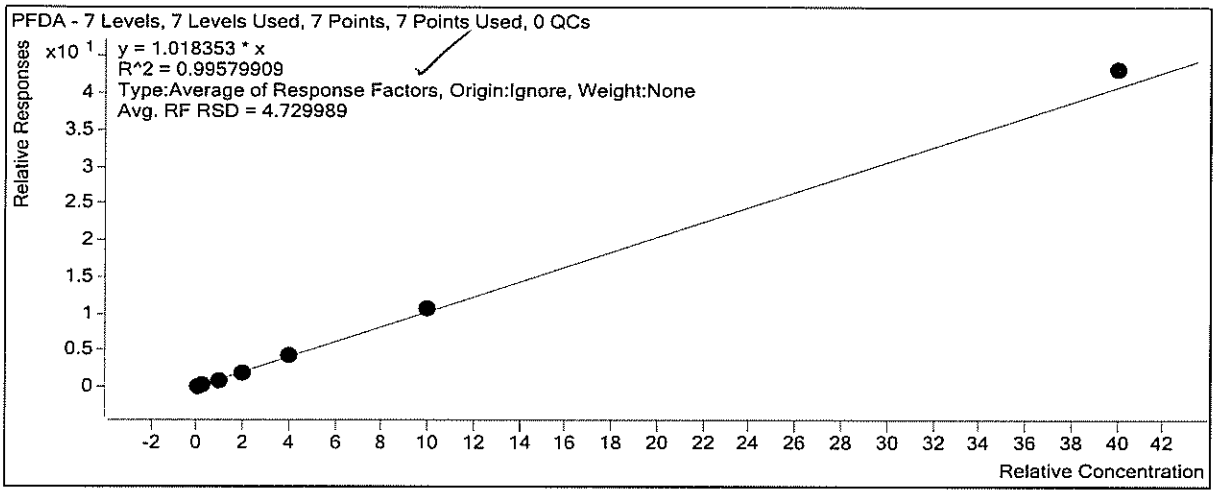
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	289494	5.0000	57898.7474
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	265339	5.0000	53067.7863
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	275377	5.0000	55075.4330
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	290727	5.0000	58145.4968
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	269458	5.0000	53891.5510
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	255343	5.0000	51068.6705
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	240856	5.0000	48171.2339

Target Compound *PFNS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	3837	0.4810	0.9339
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	9740	1.2025	1.0253
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	38098	4.8100	0.9658
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	85915	9.6200	1.0219
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	160896	19.2400	1.0552
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	389591	48.1000	1.0366
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	1358452	192.4000	0.9435

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	27808	0.5000	0.9606
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	65887	1.2500	0.9932
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	267435	5.0000	0.9712
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	582871	10.0000	1.0024
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	1134163	20.0000	1.0523
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	2732114	50.0000	1.0700
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	10393615	200.0000	1.0788



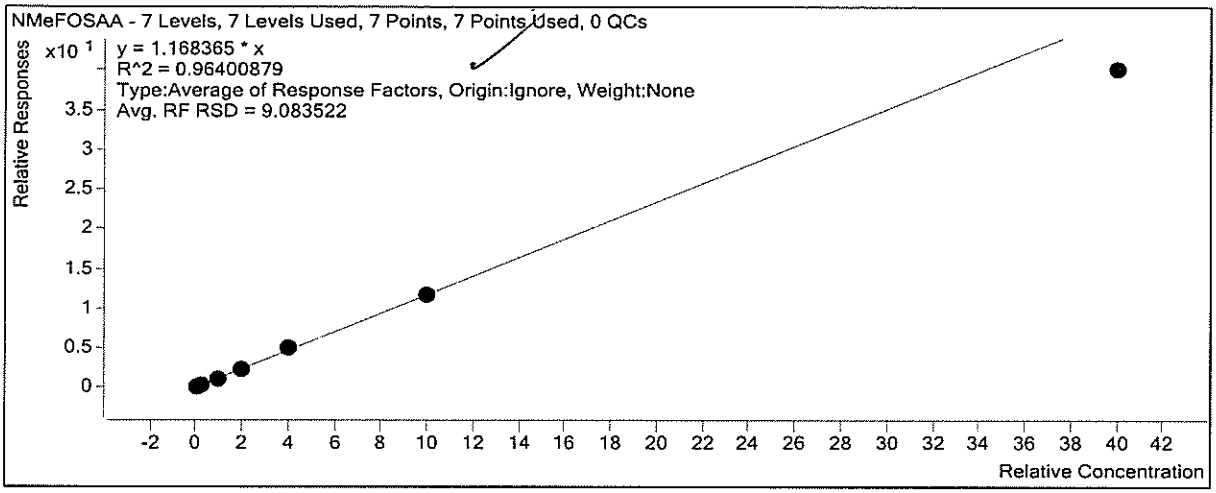
Extracted ISTD *d3-NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	33264	5.0000	6652.8320
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	31379	5.0000	6275.7703
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	32379	5.0000	6475.8709
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	34374	5.0000	6874.7675
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	30318	5.0000	6063.5824
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	31854	5.0000	6370.7724
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	35299	5.0000	7059.7940

Target Compound *NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	4380	0.5000	1.3168
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	9090	1.2500	1.1588
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	35567	5.0000	1.0984

D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	78935	10.0000	1.1482
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	155063	20.0000	1.2786
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	374775	50.0000	1.1765
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	1413666	200.0000	1.0012



Extracted ISTD *M8FOSA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	99116	5.0000	19823.1490
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	95615	5.0000	19122.9382
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	97837	5.0000	19567.3520
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	103056	5.0000	20611.1816
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	95831	5.0000	19166.2985
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	95188	5.0000	19037.5849
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	96878	5.0000	19375.5962

Target Compound *FOSA*

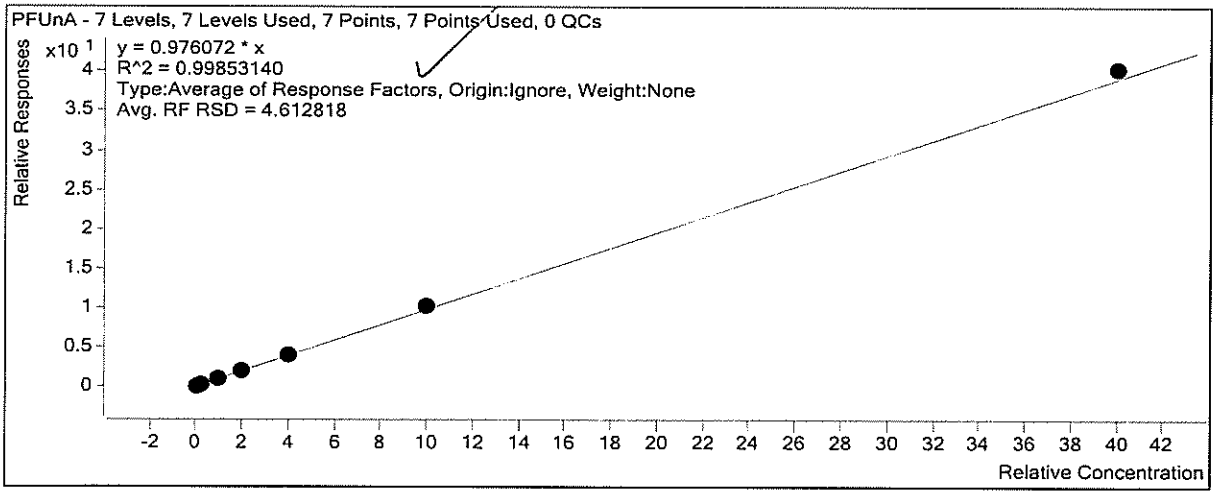
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	9606	0.5000	0.9692
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	24147	1.2500	1.0102
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	97402	5.0000	0.9956
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	211303	10.0000	1.0252
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	411938	20.0000	1.0746
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	1005895	50.0000	1.0567

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	276273	5.0000	55254.5261
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	262130	5.0000	52425.9845
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	267231	5.0000	53446.2996
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	285826	5.0000	57165.1861
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	257274	5.0000	51454.8664
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	247539	5.0000	49507.7842
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	229686	5.0000	45937.2754

Target Compound *PFUnA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	25038	0.5000	0.9063
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	61827	1.2500	0.9435
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	256887	5.0000	0.9613
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	550617	10.0000	0.9632
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	1056181	20.0000	1.0263
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	2535519	50.0000	1.0243
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	9257708	200.0000	1.0076



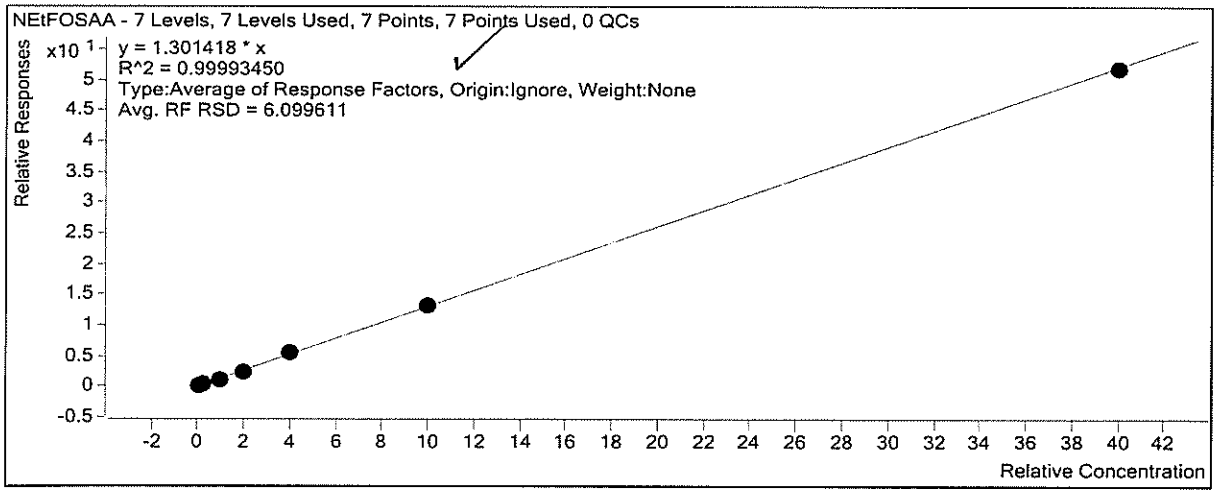
Extracted ISTD *d5-NEtFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	60358	5.0000	12071.5905

D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	54581	5.0000	10916.1737
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	57930	5.0000	11586.0138
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	60904	5.0000	12180.8804
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	54654	5.0000	10930.7945
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	52749	5.0000	10549.8822
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	44774	5.0000	8954.7311

Target Compound *NEtFOSAA*

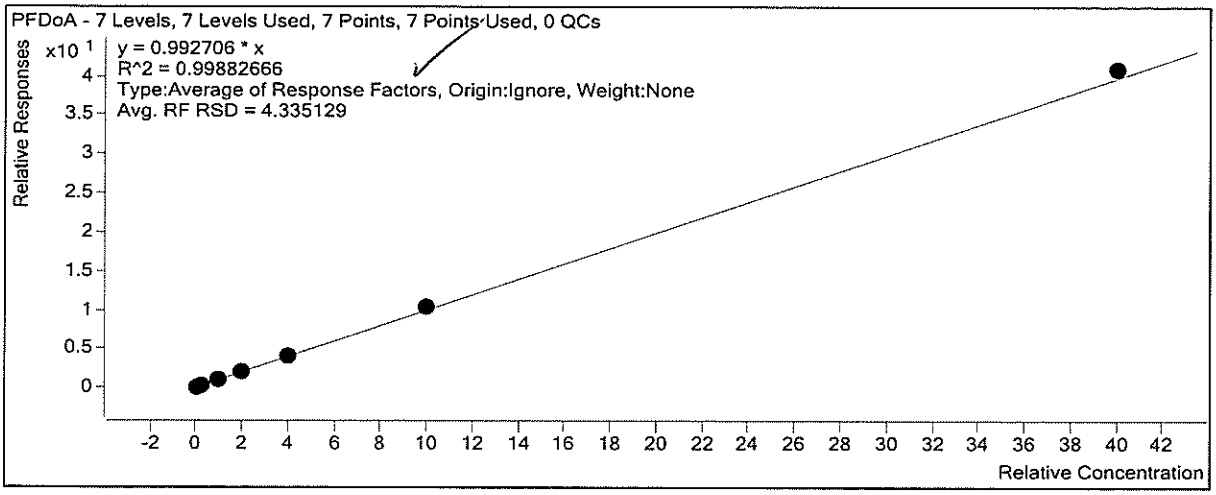
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	8714	0.5000	1.4438
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	17599	1.2500	1.2898
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	69154	5.0000	1.1937
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	150870	10.0000	1.2386
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	293766	20.0000	1.3438
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	688852	50.0000	1.3059
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	2318172	200.0000	1.2944



Target Compound *11Cl-PF3OUdS*

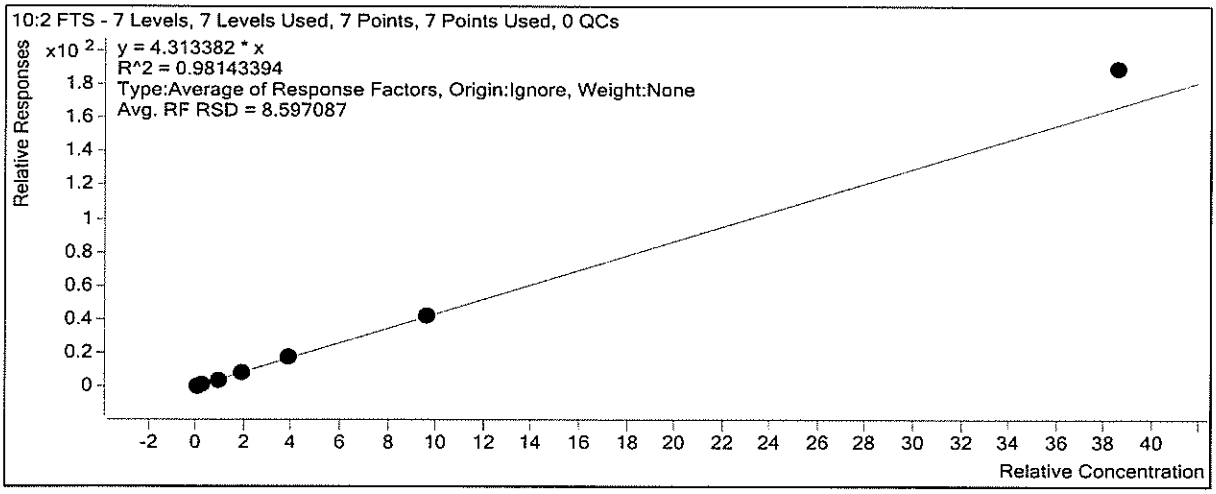
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	17850	0.4715	4.4323
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	44110	1.1788	4.7364
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	179462	4.7150	4.6411
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	397943	9.4300	4.8285

Quantitative Analysis Calibration Report



Target Compound *10:2 FTS*

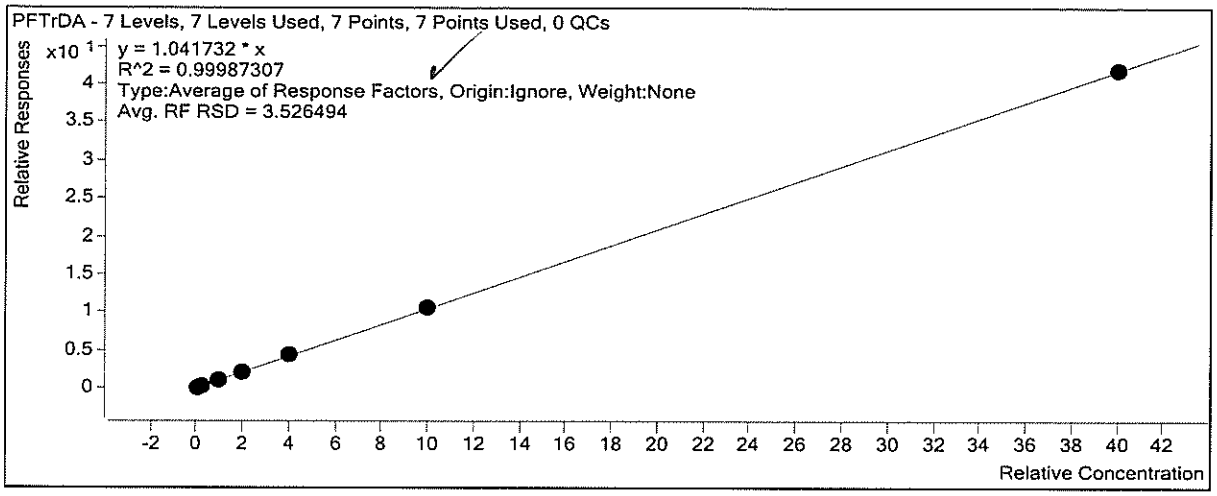
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	4607	0.4820	4.0538
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	10526	1.2050	3.8363
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	43249	4.8200	4.0223
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	99140	9.6400	4.4324
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	190213	19.2800	4.5966
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	435636	48.2000	4.3476
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	1777040	192.8000	4.9047



Target Compound *PFDoS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

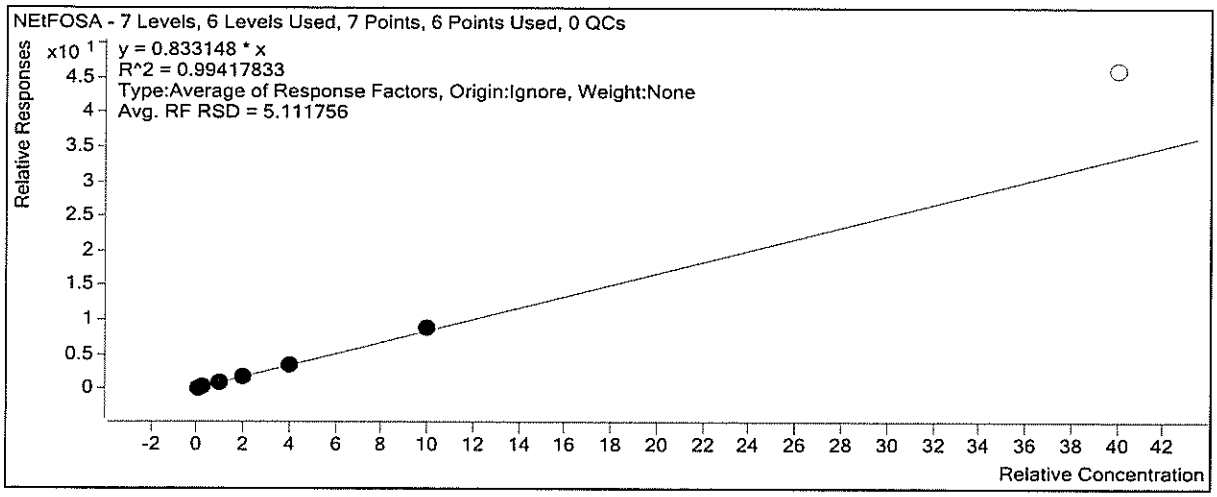
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	707484	10.0000	1.0386
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	1386654	20.0000	1.1002
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	3342372	50.0000	1.0746
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	12763836	200.0000	1.0441



Target Compound *NMeFOSA*

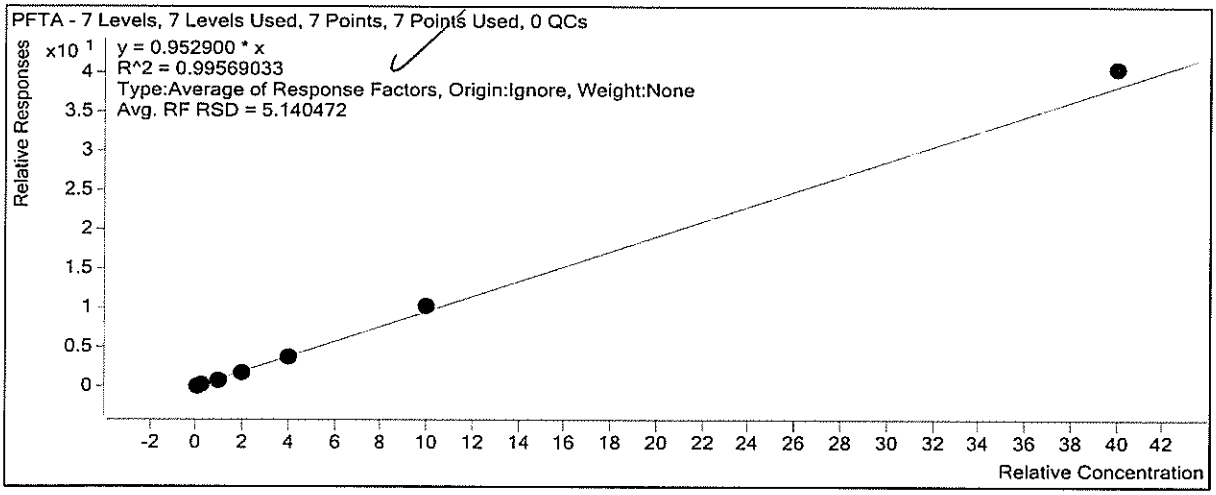
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	1852	0.5000	0.8148
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	4486	1.2500	0.8207
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	17415	5.0000	0.7664
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	36108	10.0000	0.7588
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	73574	20.0000	0.8633
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	181414	50.0000	0.8294
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	889451	200.0000	0.9558

Quantitative Analysis Calibration Report



Target Compound *PFTA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	38430	0.5000	0.8939
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	92678	1.2500	0.9506
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	364660	5.0000	0.9146
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	797839	10.0000	0.9142
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	1575279	20.0000	0.9672
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	3876923	50.0000	1.0206
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	16205236	200.0000	1.0091



Extracted ISTD *M2PFTA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/12/2021 00:19	Lab File ID:	2210811B_26.d
Analytical Method:		Analytical Batch:	718586

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	9510	10200	107	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	10000	104	70	130	
NEtFOSAA	ng/L	10000	9410	94	70	130	
NMeFOSAA	ng/L	10000	9460	95	70	130	
Perfluorobutanoic acid	ng/L	10000	9940	99	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8840	100	70	130	
Perfluorodecanoic acid	ng/L	10000	9640	96	70	130	
Perfluorododecanoic acid	ng/L	10000	9870	99	70	130	
Perfluoroheptanoic acid	ng/L	10000	9820	98	70	130	
Perfluorohexanoic acid	ng/L	10000	9760	98	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8990	98	70	130	
Perfluorononanoic acid	ng/L	10000	9870	99	70	130	
Perfluorooctanoic acid	ng/L	10000	9870	99	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	9210	99	70	130	
Perfluoropentanoic acid	ng/L	10000	9960	100	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9890	99	70	130	
Perfluorotridecanoic acid	ng/L	10000	9870	99	70	130	
Perfluoroundecanoic acid	ng/L	10000	9870	99	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/12/2021 02:59	Lab File ID:	2210811B_37.d
Analytical Method:		Analytical Batch:	718586

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	9430	99	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9390	98	70	130	
NEtFOSAA	ng/L	10000	9430	94	70	130	
NMeFOSAA	ng/L	10000	9800	98	70	130	
Perfluorobutanoic acid	ng/L	10000	9970	100	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8890	100	70	130	
Perfluorodecanoic acid	ng/L	10000	9780	98	70	130	
Perfluorododecanoic acid	ng/L	10000	9920	99	70	130	
Perfluoroheptanoic acid	ng/L	10000	9890	99	70	130	
Perfluorohexanoic acid	ng/L	10000	9900	99	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	9010	99	70	130	
Perfluorononanoic acid	ng/L	10000	9940	99	70	130	
Perfluorooctanoic acid	ng/L	10000	9830	98	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	9310	100	70	130	
Perfluoropentanoic acid	ng/L	10000	9890	99	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9880	99	70	130	
Perfluorotridecanoic acid	ng/L	10000	10000	100	70	130	
Perfluoroundecanoic acid	ng/L	10000	9750	97	70	130	

8I

INTERNAL STANDARD AREA SUMMARY

Report No:	221072807	Standard ID:	1205 (ICAL Midpoint)
Analyst:	RXJ	Instrument ID:	QQQ4
Analysis Date:	08/11/21 19:08	Lab File ID:	2210811B_06.d
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	718586

	M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
	Area		*Area*		*Area*		*Area*	
STANDARD	1106511		753279		925134		171049	
CLIENT SAMPLE ID	*LAB SAMP ID*	#		#		#		#
CS-DECON-072521	22107280721	1170099		792608		984729		180245	
MB2225095	2225095	1248175		831165		1016034		189148	
LCS2225096	2225096	1251838		835049		1035275		191035	
LCSD2225097	2225097	1186940		798063		984446		180915	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

LC-QQQ Instrument Run Log

Agilent | Invent Answers

Instrument: QQQ 4
Instrument Batch: 2210818B.batch.bin
Current ICAL Batch: 2210818ACAL
ICAL Std (ID/Exp): 019-13-5 2/13/22
ICV Std (ID/Exp): 019-9-2 2/2/22

LIMS Batch (HBN): 719175
20mM NH4OAc (ID/Exp): 019-15-3 8/20/21 13:15
Methanol (ID/Exp): 2130577 5/31/26
EIS Mix (ID/Exp): 019-12-5 1/19/22
IIS Mix (ID/Exp): 019-2-6 2/9/22

Acquisition time	Data File	Name	Type	Dilution	Comment
08/18/21 15:39:25	2210818A_01.d	1400 RT TEST	QC	1	RXJ,QQQ4;RT TEST
08/18/21 16:52:26	2210818A_02.d	1500	Blank	1	RXJ,QQQ4;instrument Blank
08/18/21 17:07:25	2210818A_03.d	1201	Cal	1	RXJ,QQQ4;ICAL
08/18/21 17:22:11	2210818A_04.d	1202	Cal	1	RXJ,QQQ4;ICAL
08/18/21 17:36:58	2210818A_05.d	1203	Cal	1	RXJ,QQQ4;ICAL
08/18/21 17:51:44	2210818A_06.d	1204	Cal	1	RXJ,QQQ4;ICAL
08/18/21 18:06:31	2210818A_07.d	1205	Cal	1	RXJ,QQQ4;ICAL
08/18/21 18:22:06	2210818A_08.d	1206	Cal	1	RXJ,QQQ4;ICAL
08/18/21 18:36:53	2210818A_09.d	1207	Cal	1	RXJ,QQQ4;ICAL
08/18/21 18:57:24	2210818A_10.d	1500	Blank	1	RXJ,QQQ4;Instrument Blank
08/18/21 19:12:19	2210818A_11.d	1600	Sample	1	RXJ,QQQ4;ICV
08/18/21 19:27:06	2210818A_12.d	1450	QC	1	RXJ,QQQ4;CCV
08/19/21 06:15:12	2210818B_1.d	1500	Blank	1	RXJ,QQQ4;Instrument Blank
08/19/21 06:29:59	2210818B_2.d	1450	QC	1	RXJ,QQQ4;CCV
08/19/21 06:44:46	2210818B_3.d	2228755	Sample	1	RXJ,QQQ4;719038
08/19/21 06:59:33	2210818B_4.d	2228756	Sample	1	RXJ,QQQ4;719038
08/19/21 07:14:20	2210818B_5.d	2228757	Sample	1	RXJ,QQQ4;719038
08/19/21 07:29:07	2210818B_6.d	22108176701	Sample	1	RXJ,QQQ4;719038
08/19/21 07:43:54	2210818B_7.d	22108176702	Sample	1	RXJ,QQQ4;719038
08/19/21 07:58:41	2210818B_8.d	22108176703	Sample	1	RXJ,QQQ4;719038
08/19/21 08:13:29	2210818B_9.d	22108176704	Sample	1	RXJ,QQQ4;719038
08/19/21 08:28:19	2210818B_10.d	22108176705	Sample	1	RXJ,QQQ4;719038
08/19/21 08:43:07	2210818B_11.d	22108176706	Sample	1	RXJ,QQQ4;719038
08/19/21 08:57:54	2210818B_12.d	22108176707	Sample	1	RXJ,QQQ4;719038
08/19/21 09:12:40	2210818B_13.d	22108176708	Sample	1	RXJ,QQQ4;719038
08/19/21 09:27:27	2210818B_14.d	22108176709	Sample	1	RXJ,QQQ4;719038
08/19/21 09:42:15	2210818B_15.d	22108176710	Sample	1	RXJ,QQQ4;719038
08/19/21 09:57:02	2210818B_16.d	1400	QC	1	RXJ,QQQ4;CCV
08/19/21 10:11:49	2210818B_17.d	22108176711	Sample	1	RXJ,QQQ4;719038
08/19/21 10:26:36	2210818B_18.d	22108176712	Sample	1	RXJ,QQQ4;719038
08/19/21 10:41:23	2210818B_19.d	22108176713	Sample	1	RXJ,QQQ4;719038
08/19/21 10:56:12	2210818B_20.d	22108176714	Sample	1	RXJ,QQQ4;719038
08/19/21 11:11:15	2210818B_21.d	22108176715	Sample	1	RXJ,QQQ4;719038
08/19/21 11:26:02	2210818B_22.d	22108176716	Sample	1	RXJ,QQQ4;719038
08/19/21 11:40:48	2210818B_23.d	22108176717	Sample	1	RXJ,QQQ4;719038
08/19/21 11:57:54	2210818B_24.d	22108090711*10	Sample	1	RXJ,QQQ4;719120
08/19/21 12:12:49	2210818B_25.d	22108090712*10	Sample	1	RXJ,QQQ4;719120
08/19/21 12:27:37	2210818B_26.d	22108090713*10	Sample	1	RXJ,QQQ4;719120
08/19/21 12:42:24	2210818B_27.d	1400	QC	1	RXJ,QQQ4;CCV
08/19/21 13:04:56	2210818B_28.d	2228831	Sample	1	RXJ,QQQ4;719070
08/19/21 13:19:53	2210818B_29.d	2228832	Sample	1	RXJ,QQQ4;719070
08/19/21 13:34:42	2210818B_30.d	2228833	Sample	1	RXJ,QQQ4;719070
08/19/21 13:49:29	2210818B_31.d	22107280715	Sample	1	RXJ,QQQ4;719070
08/19/21 14:04:16	2210818B_32.d	2228528	Sample	1	RXJ,QQQ4;719006
08/19/21 14:19:03	2210818B_33.d	2228529	Sample	1	RXJ,QQQ4;719006
08/19/21 14:33:50	2210818B_34.d	2228530	Sample	1	RXJ,QQQ4;719006
08/19/21 14:48:37	2210818B_35.d	22108171301	Sample	1	RXJ,QQQ4;719006
08/19/21 15:03:24	2210818B_36.d	22108171302	Sample	1	RXJ,QQQ4;719006
08/19/21 15:18:12	2210818B_37.d	1400	QC	1	RXJ,QQQ4;CCV
08/19/21 15:33:17	2210818B_38.d	22108176718	Sample	1	RXJ,QQQ4;719038
08/19/21 15:48:21	2210818B_39.d	22108176719	Sample	1	RXJ,QQQ4;719038
08/19/21 16:03:11	2210818B_40.d	22108176720	Sample	1	RXJ,QQQ4;719038
08/19/21 16:17:58	2210818B_41.d	22108171301*10	Sample	10	RXJ,QQQ4;719070
08/19/21 16:32:45	2210818B_42.d	22108171302*10	Sample	10	RXJ,QQQ4;719070
08/19/21 16:47:32	2210818B_43.d	22108176704	Sample	1	RXJ,QQQ4;719038
08/19/21 17:02:36	2210818B_44.d	22108176714	Sample	1	RXJ,QQQ4;719038
08/19/21 17:19:25	2210818B_45.d	2228756	Sample	1	RXJ,QQQ4;719038
08/19/21 17:34:20	2210818B_46.d	1400	QC	1	RXJ,QQQ4;CCV

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/19/2021 06:29	Lab File ID:	2210818B_2.d
Analytical Method:		Analytical Batch:	719175

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	3.81	3.71	98	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	3.84	3.33	87	70	130	
NEtFOSAA	ng/L	4.00	3.65	91	70	130	
NMeFOSAA	ng/L	4.00	3.78	95	70	130	
Perfluorobutanoic acid	ng/L	4.00	3.82	95	70	130	
Perfluorobutanesulfonic acid	ng/L	3.55	3.34	94	70	130	
Perfluorodecanoic acid	ng/L	4.00	3.63	91	70	130	
Perfluorododecanoic acid	ng/L	4.00	3.65	91	70	130	
Perfluoroheptanoic acid	ng/L	4.00	3.74	93	70	130	
Perfluorohexanoic acid	ng/L	4.00	3.90	97	70	130	
Perfluorohexanesulfonic acid	ng/L	3.66	3.37	92	70	130	
Perfluorononanoic acid	ng/L	4.00	3.66	91	70	130	
Perfluorooctanoic acid	ng/L	4.00	3.74	94	70	130	
Perfluorooctanesulfonic acid	ng/L	3.71	3.66	99	70	130	
Perfluoropentanoic acid	ng/L	4.00	3.71	93	70	130	
Perfluorotetradecanoic acid	ng/L	4.00	3.79	95	70	130	
Perfluorotridecanoic acid	ng/L	4.00	3.80	95	70	130	
Perfluoroundecanoic acid	ng/L	4.00	3.89	97	70	130	

FORM 7S - ORG

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/18/2021 19:12	Lab File ID:	2210818A_11.d
Analytical Method:		Analytical Batch:	719168

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	10000	12400	124	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	10100	12100	120	70	130	
NEtFOSAA	ng/L	10000	11700	117	70	130	
NMeFOSAA	ng/L	10000	12400	124	70	130	
Perfluorobutanoic acid	ng/L	10000	11800	118	70	130	
Perfluorobutanesulfonic acid	ng/L	10000	11800	118	70	130	
Perfluorodecanoic acid	ng/L	10000	12200	122	70	130	
Perfluorododecanoic acid	ng/L	10000	11400	114	70	130	
Perfluoroheptanoic acid	ng/L	10000	11800	118	70	130	
Perfluorohexanoic acid	ng/L	10100	11800	117	70	130	
Perfluorohexanesulfonic acid	ng/L	10000	12000	120	70	130	
Perfluorononanoic acid	ng/L	10000	12500	125	70	130	
Perfluorooctanoic acid	ng/L	10100	11500	114	70	130	
Perfluorooctanesulfonic acid	ng/L	10000	10600	106	70	130	
Perfluoropentanoic acid	ng/L	10100	12000	118	70	130	
Perfluorotetradecanoic acid	ng/L	10000	13000	130	70	130	
Perfluorotridecanoic acid	ng/L	10000	11000	110	70	130	
Perfluoroundecanoic acid	ng/L	10000	11300	113	70	130	

4I

ORGANICS INSTRUMENT BLANK

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/19/2021 06:15	Lab File ID:	2210818B_1.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	719175

ANALYTE	UNITS	RESULT	Q	DL	LOD	LOQ	#
6:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.50	3.00	4.00	
8:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.06	3.00	4.00	
NEtFOSAA	ng/L	4.00	U	1.58	4.00	8.00	
NMeFOSAA	ng/L	4.00	U	0.90	4.00	8.00	
Perfluorobutanesulfonic acid	ng/L	2.00	U	0.62	2.00	4.00	
Perfluorobutanoic acid	ng/L	3.50	U	1.52	3.50	4.00	
Perfluorodecanoic acid	ng/L	3.00	U	1.44	3.00	4.00	
Perfluorododecanoic acid	ng/L	3.00	U	1.30	3.00	4.00	
Perfluoroheptanoic acid	ng/L	3.00	U	1.16	3.00	4.00	
Perfluorohexanesulfonic acid	ng/L	3.00	U	1.24	3.00	4.00	
Perfluorohexanoic acid	ng/L	2.00	U	0.94	2.00	4.00	
Perfluorononanoic acid	ng/L	2.00	U	0.98	2.00	4.00	
Perfluorooctanesulfonic acid	ng/L	2.00	U	0.76	2.00	4.00	
Perfluorooctanoic acid	ng/L	2.00	U	0.84	2.00	4.00	
Perfluoropentanoic acid	ng/L	2.00	U	0.88	2.00	4.00	
Perfluorotetradecanoic acid	ng/L	3.00	U	1.14	3.00	4.00	
Perfluorotridecanoic acid	ng/L	3.00	U	1.23	3.00	4.00	
Perfluoroundecanoic acid	ng/L	3.00	U	1.24	3.00	4.00	

* - Result greater than 1/2 LOQ

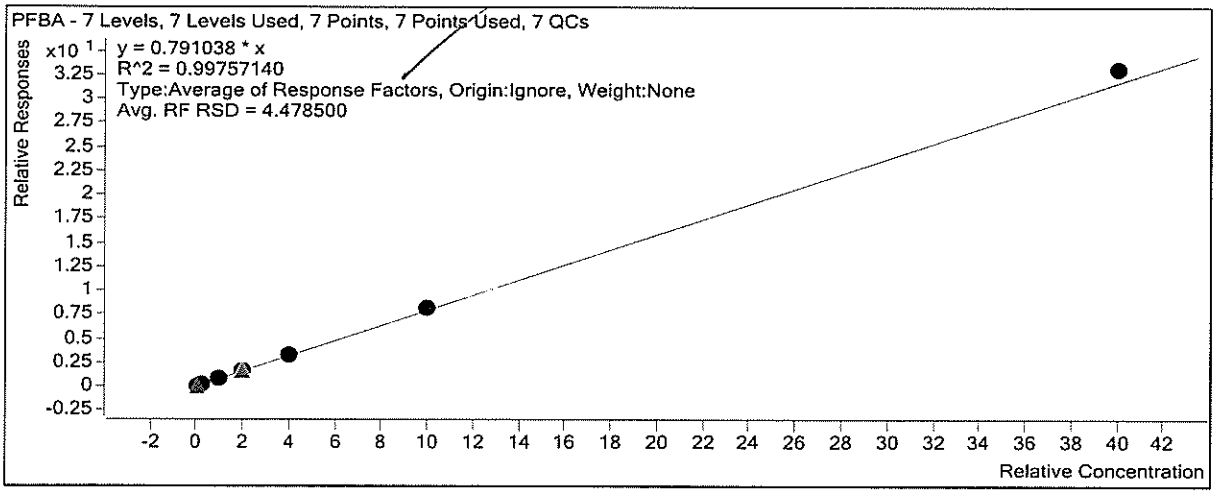
Quantitative Analysis Calibration Report

Batch Data Path	D:\MassHunter\Data\QQQ4\2210818ACAL\QuantResults\2210818B.batch.bin		
Analysis Time	8/20/2021 12:11 PM	**Analyst Name**	GCAL\lcms
Report Time	8/20/2021 12:16 PM	**Reporter Name**	GCAL\lcms
Last Calib Update	8/19/2021 3:02 PM	**Batch State**	Processed

Calibration Info

Target Compound *PFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	10598	0.5000	0.7360
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	27178	1.2500	0.7727
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	108969	5.0000	0.7578
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	234389	10.0000	0.8231
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	471104	20.0000	0.8097
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	1166504	50.0000	0.8113
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	4387519	200.0000	0.8266

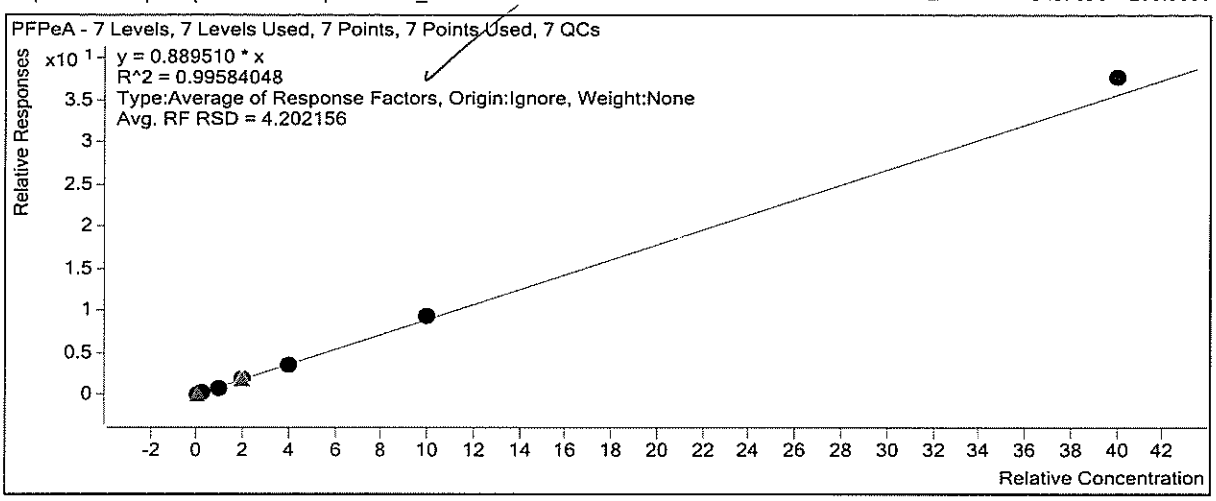


Extracted ISTD *MPFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	143987	5.0000	28797.4353
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	140693	5.0000	28138.5269
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	143804	5.0000	28760.7325
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	142378	5.0000	28475.5485
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	145454	5.0000	29090.8821
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	143774	5.0000	28754.8245
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	132692	5.0000	26538.4845

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	13714	0.5000	0.8435
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	34282	1.2500	0.8667
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	137735	5.0000	0.8503
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	293191	10.0000	0.8990
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	593249	20.0000	0.9005
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	1478833	50.0000	0.9238
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	5437690	200.0000	0.9426



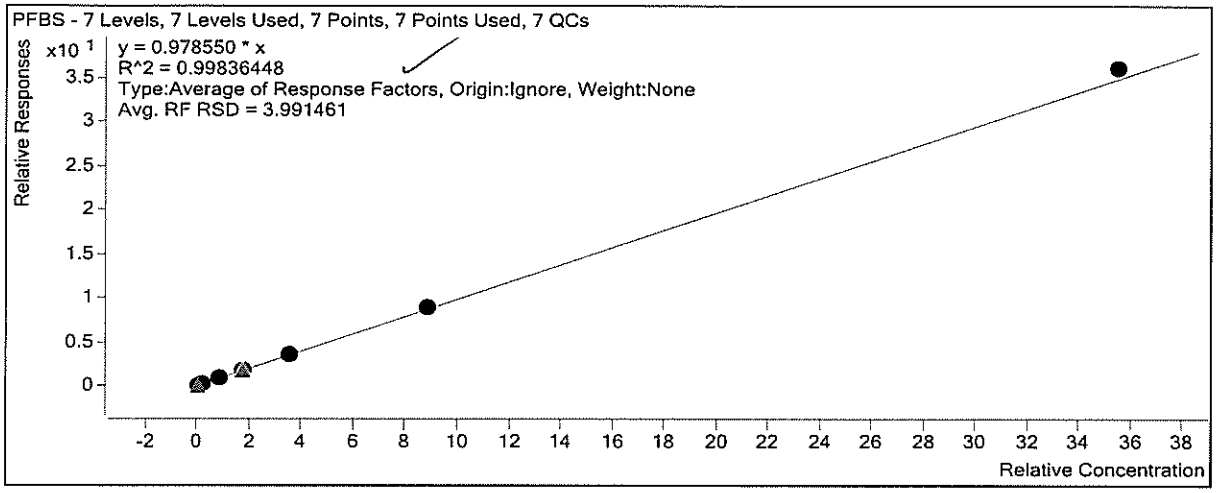
Extracted ISTD *M3PFBS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	63160	5.0000	12632.0058
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	62597	5.0000	12519.3892
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	63589	5.0000	12717.7244
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	62695	5.0000	12538.9389
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	63110	5.0000	12621.9851
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	61242	5.0000	12248.3582
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	54763	5.0000	10952.5006

Target Compound *PFBS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	5330	0.4435	0.9515

D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	12928	1.1088	0.9313
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	52452	4.4350	0.9299
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	111845	8.8700	1.0056
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	225280	17.7400	1.0061
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	549563	44.3500	1.0117
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	1969628	177.4000	1.0137

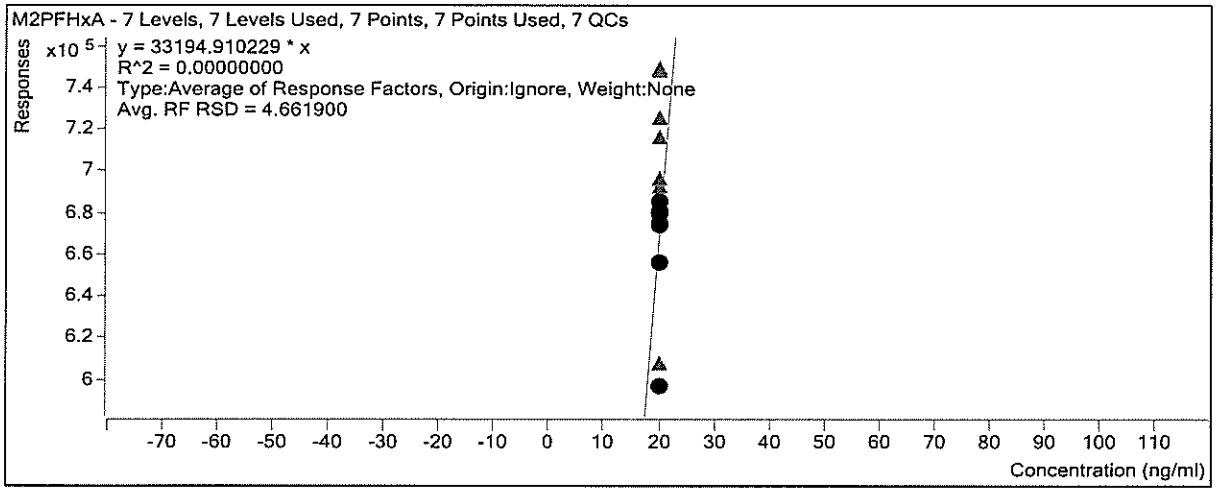


Target Compound *PFMBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	9151	0.5000	0.4823
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	23209	1.2500	0.4964
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	91931	5.0000	0.4890
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	196268	10.0000	0.5219
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	397030	20.0000	0.5201
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	962086	50.0000	0.5192
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	4497426	200.0000	0.6798

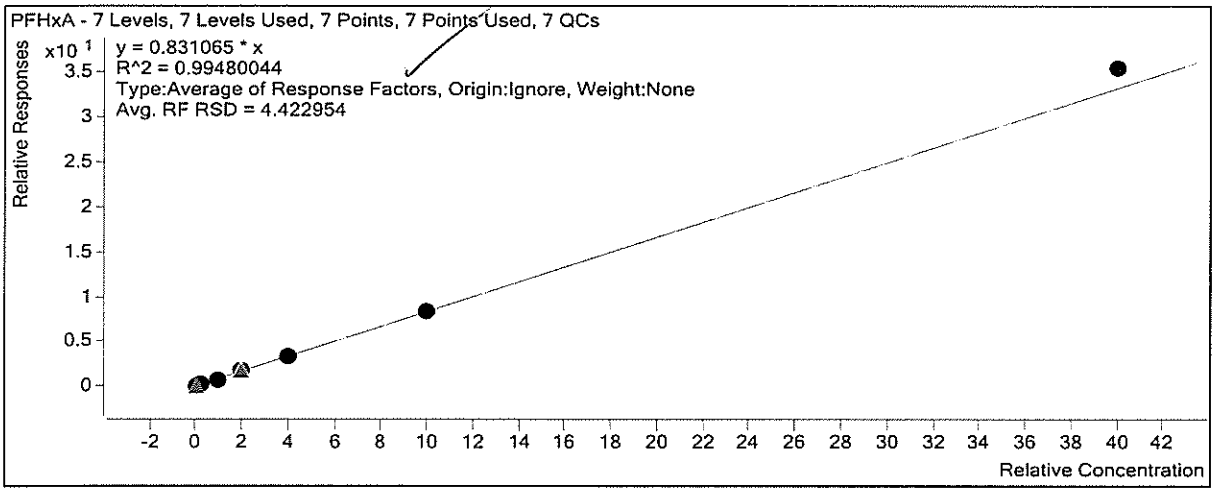
Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	597046	20.0000	29852.3130



Target Compound *PFHxA*

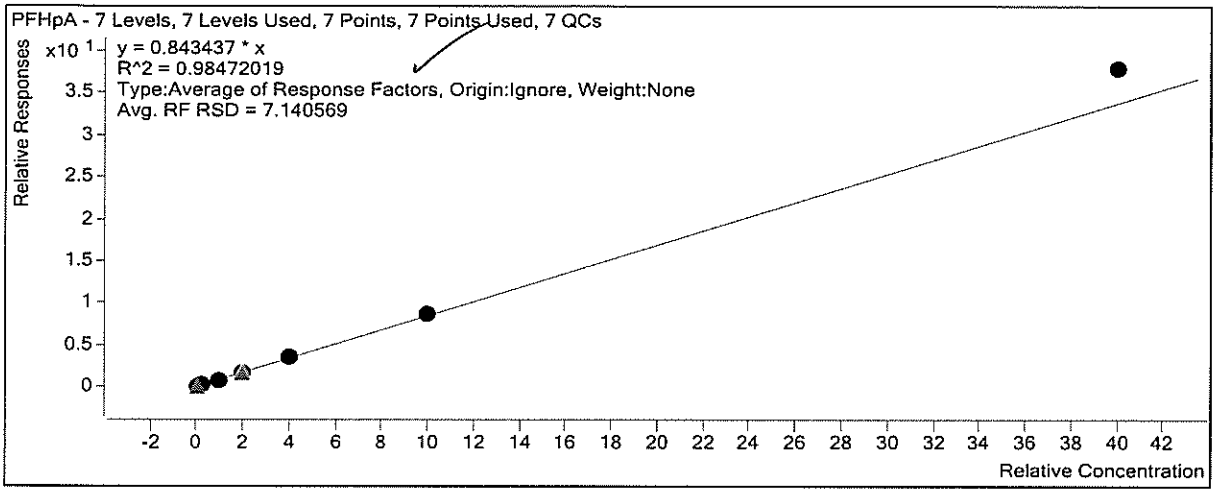
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	14715	0.5000	0.7756
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	38169	1.2500	0.8163
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	150745	5.0000	0.8018
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	321553	10.0000	0.8550
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	641161	20.0000	0.8400
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	1558562	50.0000	0.8411
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	5872764	200.0000	0.8877



Target Compound *PFPeS*

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	1116185	20.0000	0.8603
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	2765571	50.0000	0.8744
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	10723390	200.0000	0.9469



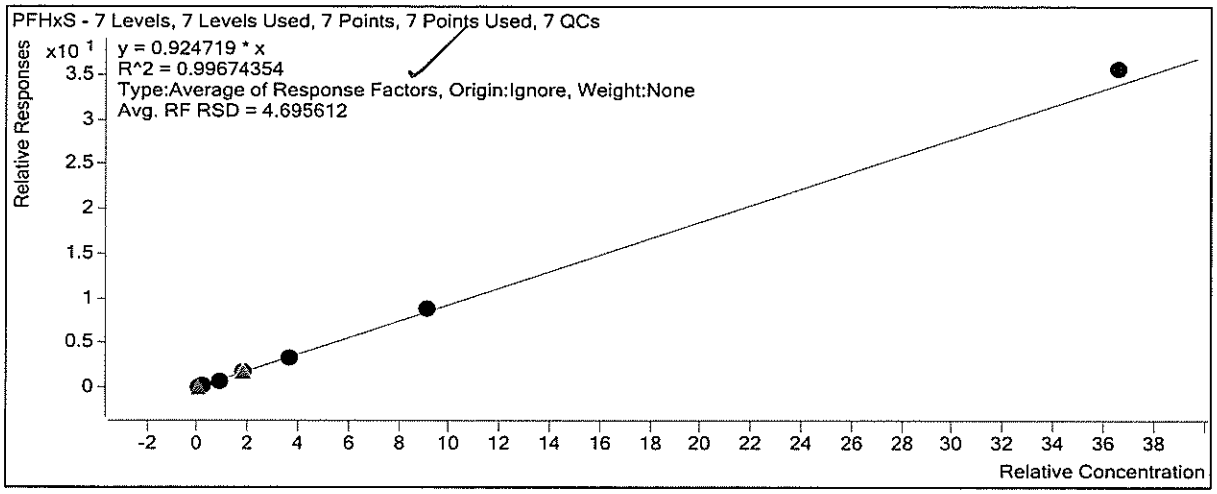
Extracted ISTD *M3PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	51060	5.0000	10211.9807
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	51193	5.0000	10238.6191
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	52710	5.0000	10542.0561
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	51681	5.0000	10336.1233
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	52205	5.0000	10441.0902
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	49903	5.0000	9980.5108
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	44436	5.0000	8887.1325

Target Compound *PFHxS*

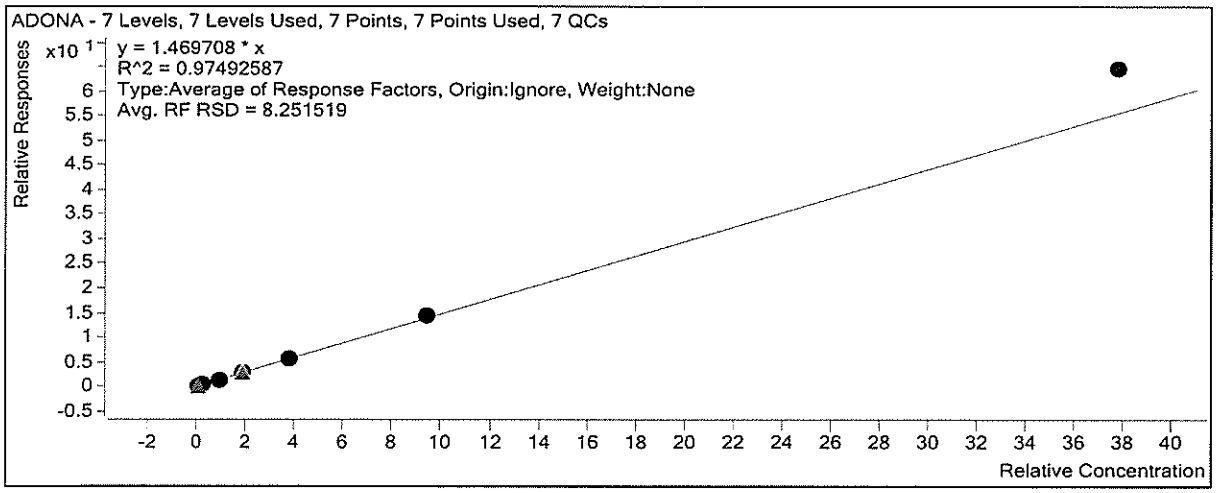
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	4061	0.4570	0.8701
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	10771	1.1425	0.9208
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	41497	4.5700	0.8613
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	89710	9.1400	0.9496
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	179452	18.2800	0.9402
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	436885	45.7000	0.9579
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	1580899	182.8000	0.9731

Quantitative Analysis Calibration Report



Target Compound *ADONA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	30812	0.4725	1.3605
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	80276	1.1813	1.4143
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	317145	4.7250	1.3536
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	680222	9.4500	1.4631
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	1370666	18.9000	1.4710
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	3441484	47.2500	1.5157
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	13819413	189.0000	1.7097



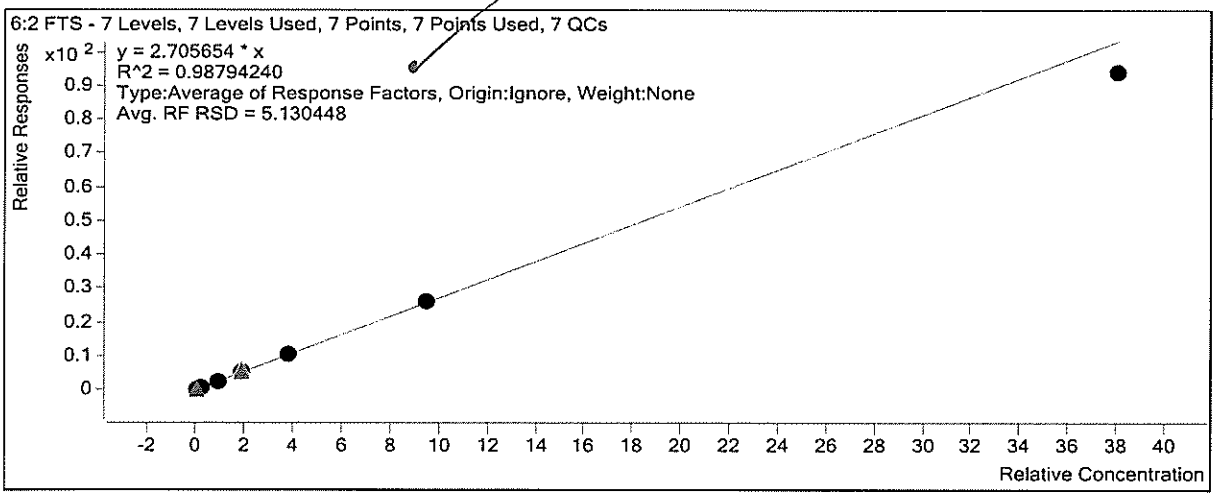
Extracted ISTD *M2 6:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	17096	5.0000	3419.1976
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	16396	5.0000	3279.2589
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	16916	5.0000	3383.1562
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	16805	5.0000	3360.9382
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	17301	5.0000	3460.1739
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	16272	5.0000	3254.3874
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	14556	5.0000	2911.2314

Target Compound *6:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	4173	0.4755	2.5667
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	10816	1.1888	2.7744
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	44033	4.7550	2.7372
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	91751	9.5100	2.8706
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	182353	19.0200	2.7708
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	425989	47.5500	2.7528
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	1366073	190.2000	2.4671

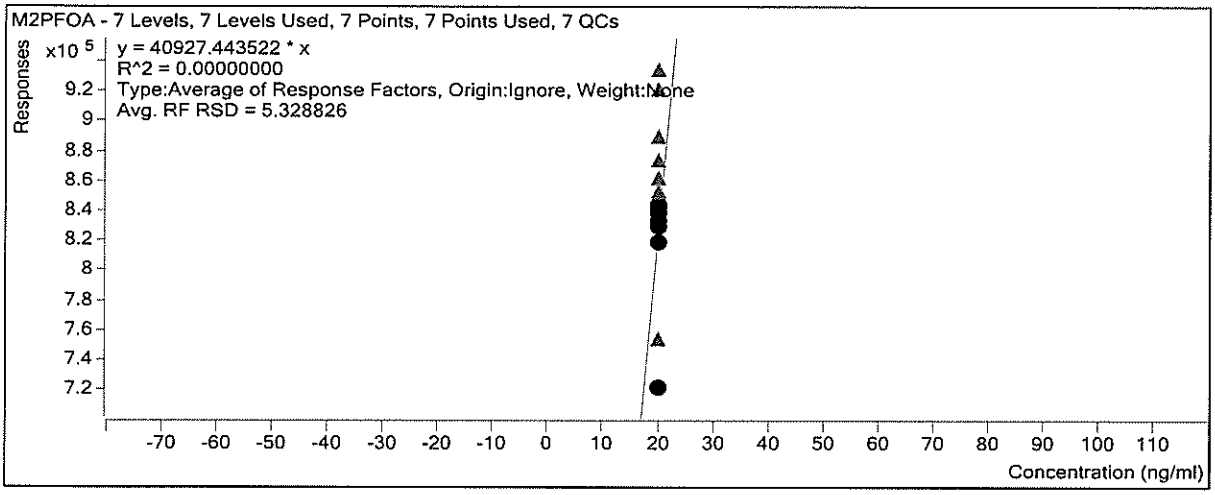


Extracted ISTD *M8PFOA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	239659	5.0000	47931.8740
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	240241	5.0000	48048.2488
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	247939	5.0000	49587.7245

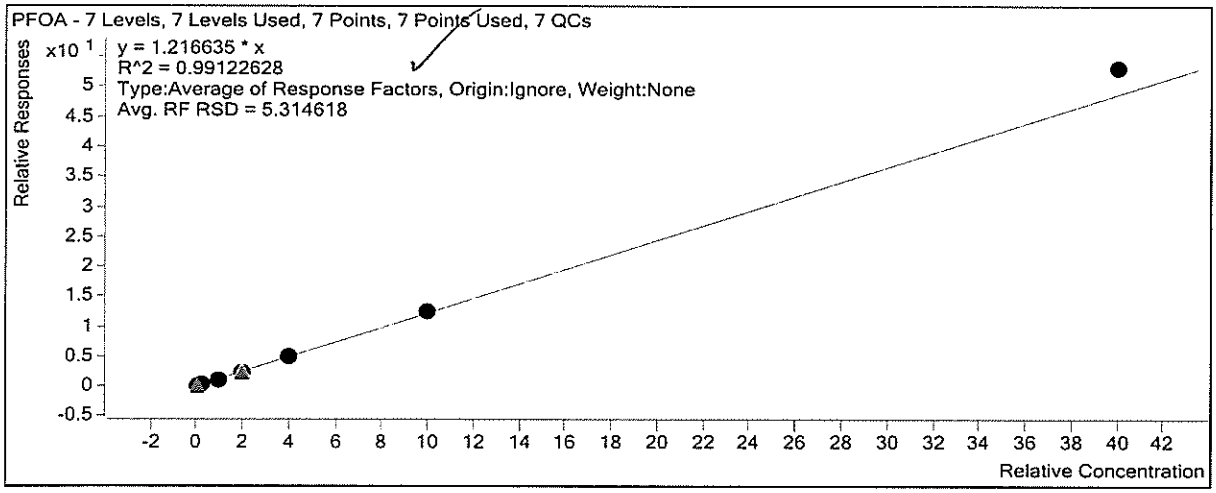
Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	721612	20.0000	36080.5987



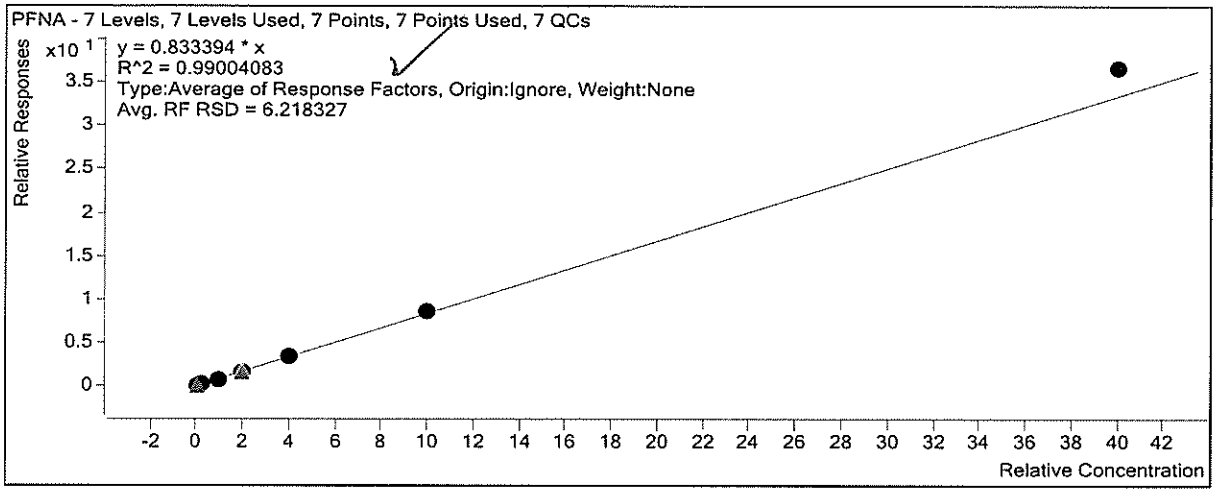
Target Compound *PFOA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	27536	0.5000	1.1490
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	71099	1.2500	1.1838
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	283741	5.0000	1.1444
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	606036	10.0000	1.2319
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	1203109	20.0000	1.2202
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	3029958	50.0000	1.2611
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	11343018	200.0000	1.3261



Target Compound *PFHpS*

D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	63445	1.2500	0.8080
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	250332	5.0000	0.7837
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	531575	10.0000	0.8455
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	1089209	20.0000	0.8468
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	2659155	50.0000	0.8718
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	9644810	200.0000	0.9136



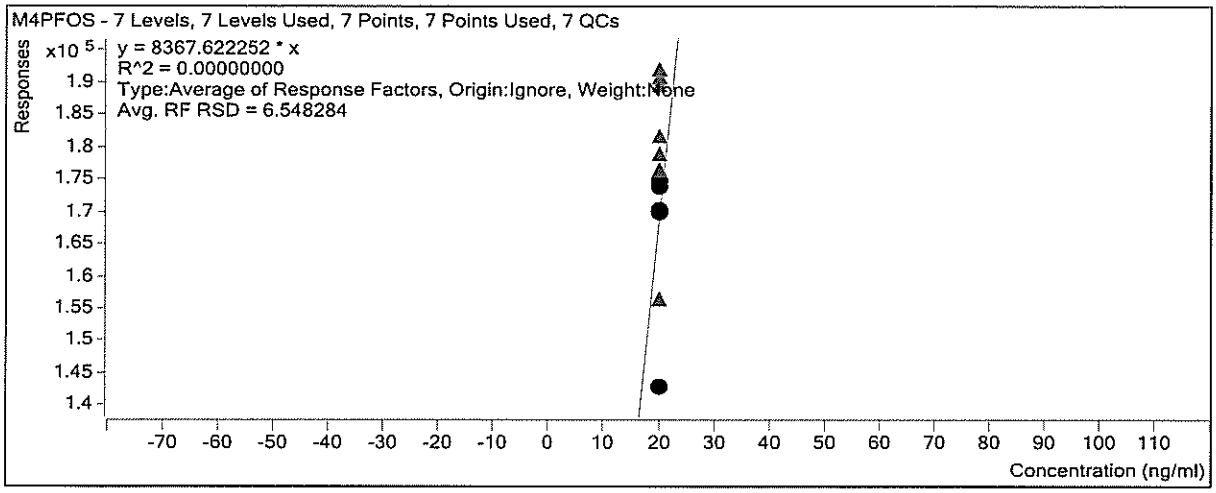
Extracted ISTD *M8PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	47272	5.0000	9454.3411
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	46846	5.0000	9369.1423
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	48607	5.0000	9721.3408
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	47755	5.0000	9550.9728
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	48550	5.0000	9710.0524
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	45320	5.0000	9064.0780
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	38598	5.0000	7719.5211

Instrument ISTD *M4PFOS*

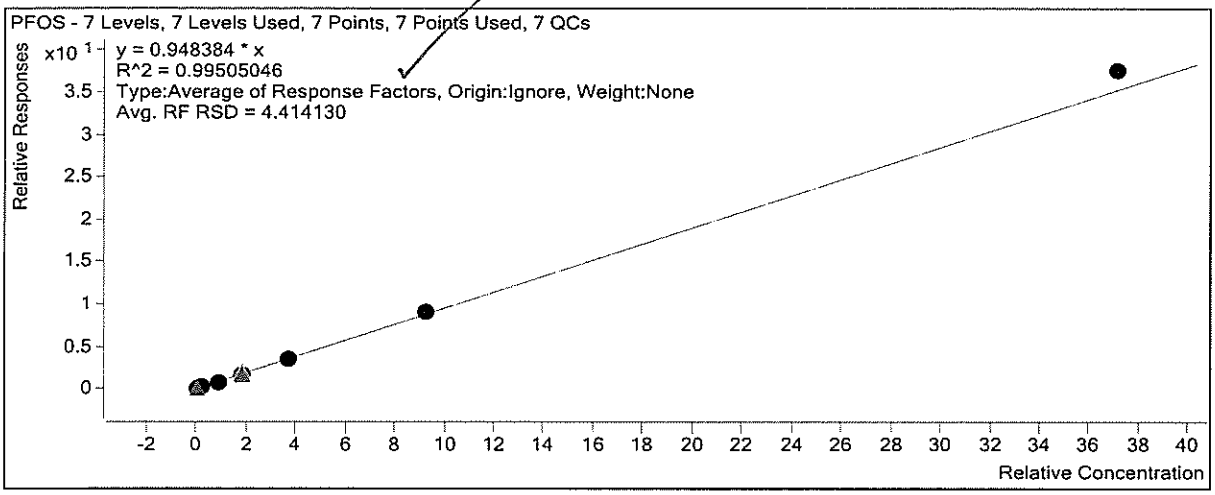
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	173766	20.0000	8688.2780
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	174660	20.0000	8733.0184
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	170122	20.0000	8506.0770
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	169943	20.0000	8497.1507

D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	169921	20.0000	8496.0386
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	170142	20.0000	8507.1232
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	142913	20.0000	7145.6698



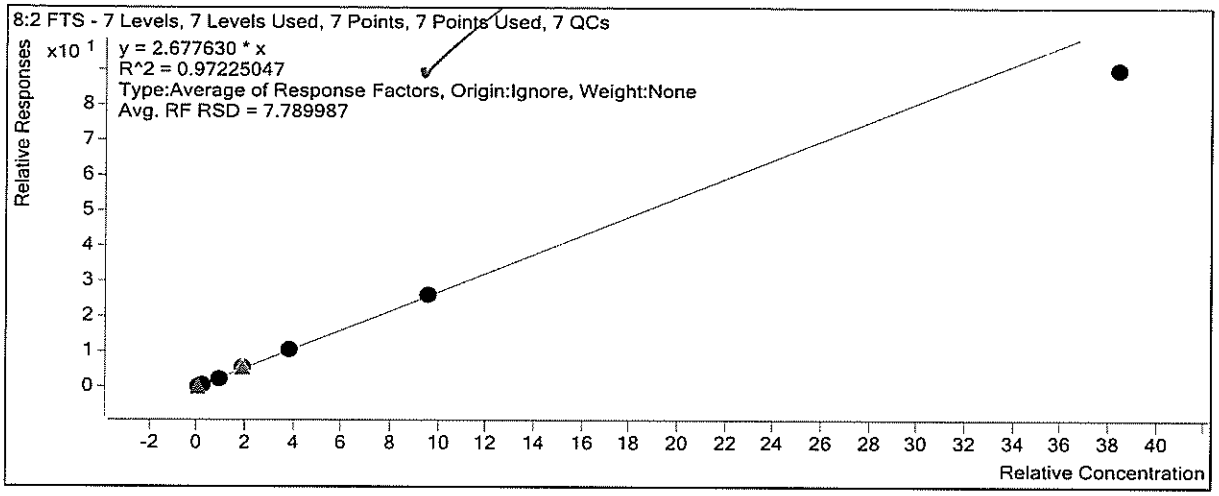
Target Compound *PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	4079	0.4640	0.9298
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	10033	1.1600	0.9232
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	39803	4.6400	0.8824
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	85160	9.2800	0.9608
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	171151	18.5600	0.9497
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	412999	46.4000	0.9820
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	1448213	185.6000	1.0108



Quantitative Analysis Calibration Report

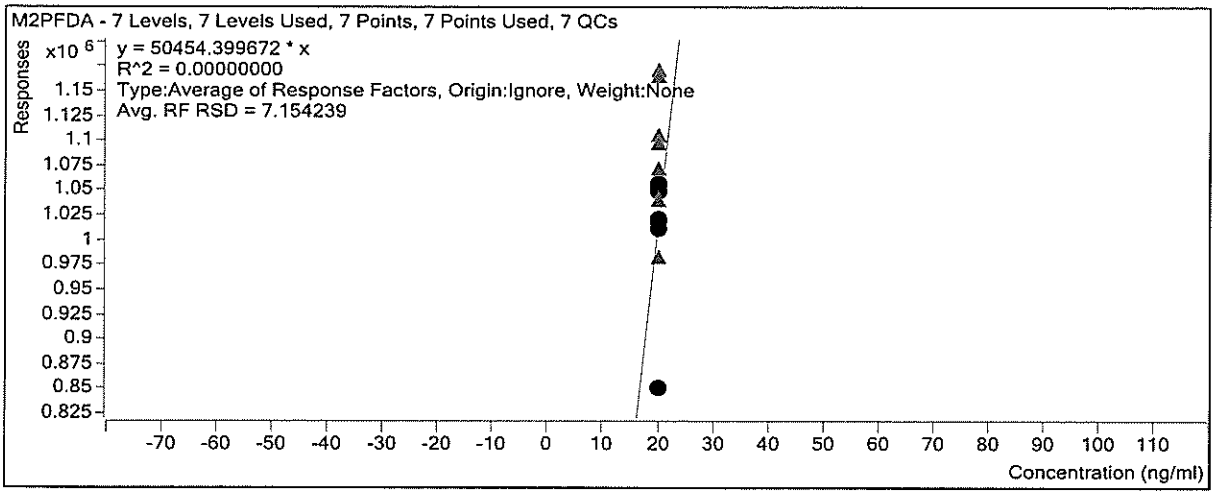
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	3680	0.4800	2.6339
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	9409	1.2000	2.7452
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	36481	4.8000	2.5773
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	80967	9.6000	3.0312
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	152707	19.2000	2.7171
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	343015	48.0000	2.7034
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	978864	192.0000	2.3352



Target Compound *PFNS*

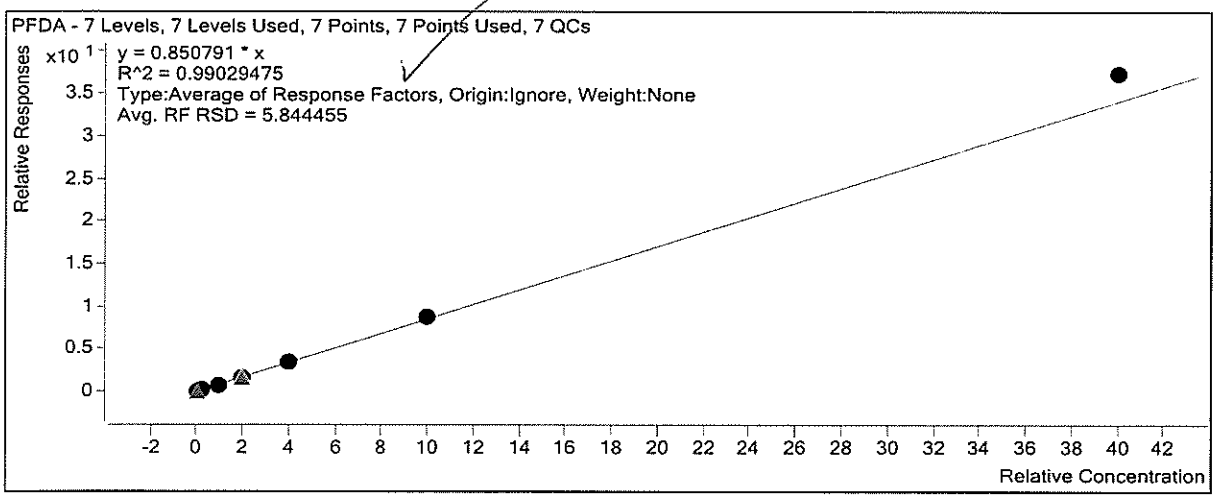
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	3894	0.4810	0.8562
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	9750	1.2025	0.8654
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	37277	4.8100	0.7972
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	82653	9.6200	0.8996
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	161094	19.2400	0.8623
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	380337	48.1000	0.8724
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	1290600	192.4000	0.8690

Quantitative Analysis Calibration Report



Target Compound *PFDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	23934	0.5000	0.8109
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	60518	1.2500	0.8085
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	237779	5.0000	0.7912
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	508712	10.0000	0.8626
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	1034123	20.0000	0.8761
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	2491179	50.0000	0.8743
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	9086190	200.0000	0.9319



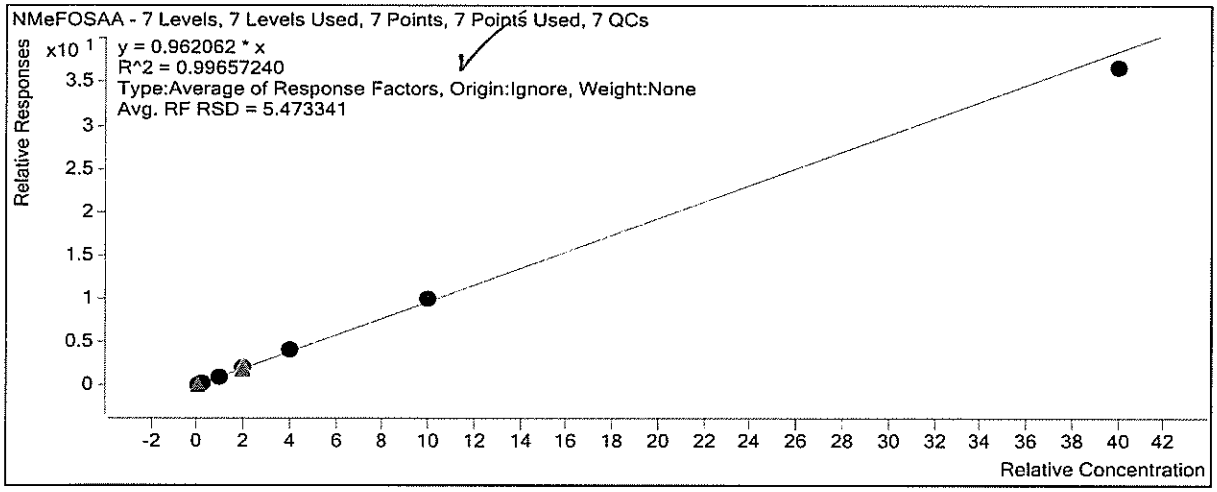
Extracted ISTD *d3-NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	36797	5.0000	7359.4921
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	36208	5.0000	7241.5826
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	37699	5.0000	7539.7470
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	36664	5.0000	7332.7281
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	36666	5.0000	7333.2488
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	37265	5.0000	7453.0530
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	35460	5.0000	7092.0587

Target Compound *NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	3390	0.5000	0.9214
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	8686	1.2500	0.9596
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	33851	5.0000	0.8979
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	74746	10.0000	1.0193
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	151118	20.0000	1.0304
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	368917	50.0000	0.9900
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	1299045	200.0000	0.9158

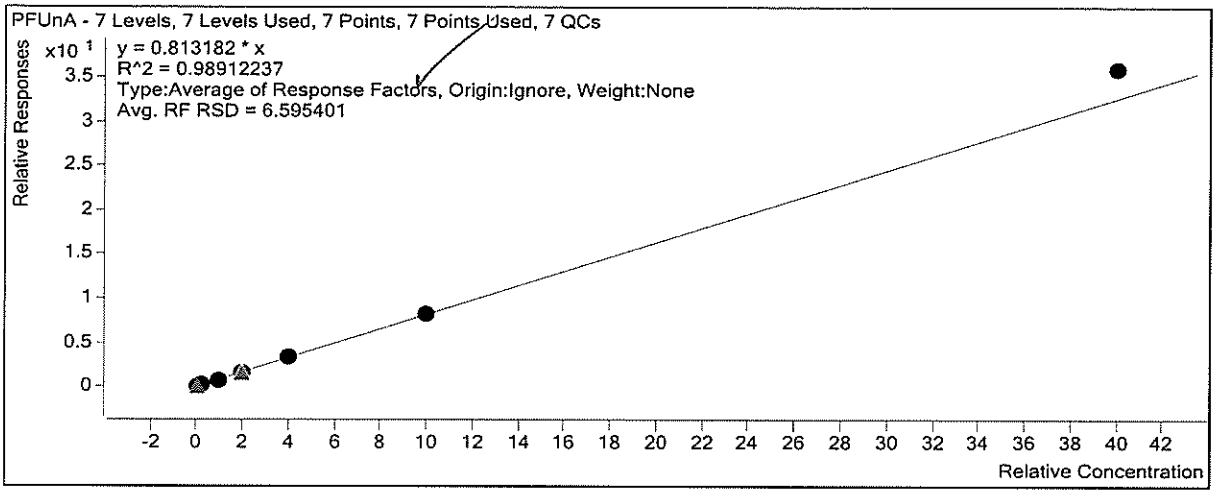


Target Compound *FOSA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	9288	0.5000	0.8453
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	23606	1.2500	0.8506
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	91677	5.0000	0.8305

Quantitative Analysis Calibration Report

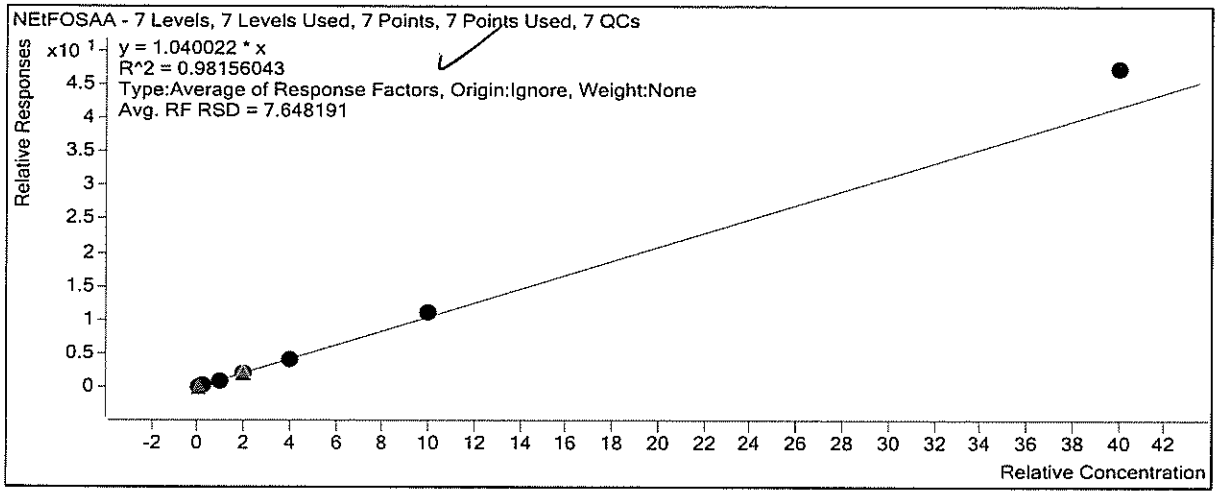
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	20663	0.5000	0.7377
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	54914	1.2500	0.7874
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	218893	5.0000	0.7652
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	468074	10.0000	0.8451
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	931887	20.0000	0.8391
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	2239707	50.0000	0.8219
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	8049232	200.0000	0.8958



Target Compound *NEtFOSAA*

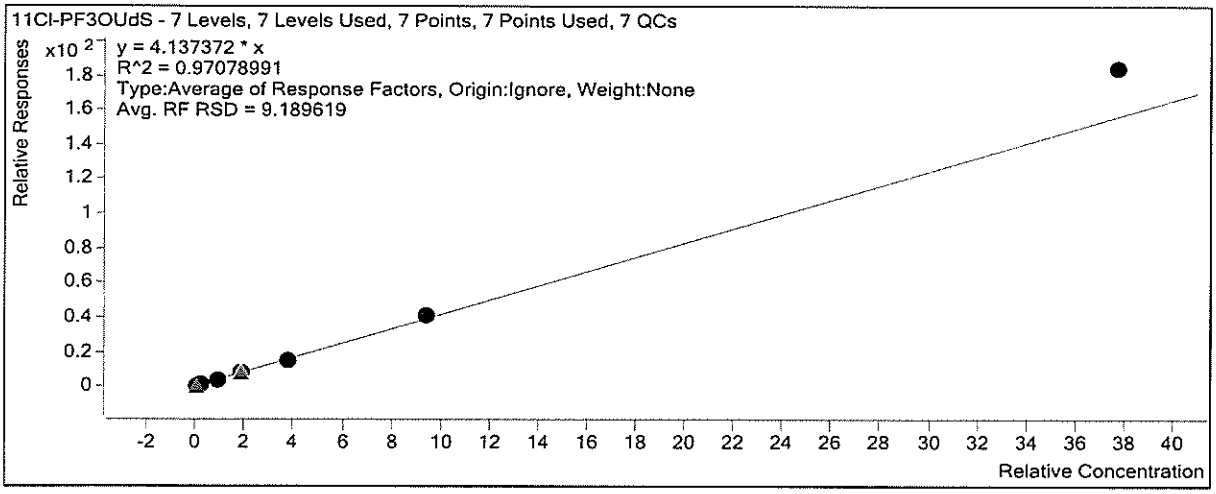
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	6396	0.5000	0.9667
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	15535	1.2500	0.9646
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	63870	5.0000	1.0014
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	133177	10.0000	1.0092
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	269171	20.0000	1.0509
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	649944	50.0000	1.1060
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	2141205	200.0000	1.1814

Quantitative Analysis Calibration Report



Target Compound *11Cl-PF3OUdS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	17284	0.4715	3.8773
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	42946	1.1788	3.8885
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	172538	4.7150	3.7642
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	370050	9.4300	4.1087
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	748123	18.8600	4.0852
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	1864422	47.1500	4.3625
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	7097748	188.6000	4.8752



Extracted ISTD *MPFDoA*

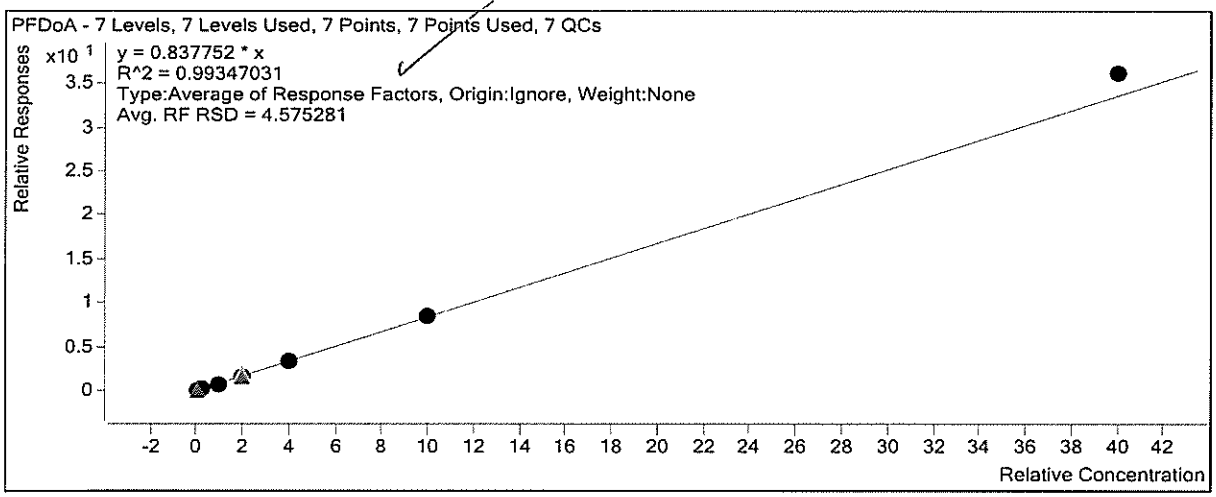
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	347123	5.0000	69424.6004
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	340030	5.0000	68005.9243
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	343909	5.0000	68781.7069
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	333336	5.0000	66667.1062
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	345147	5.0000	69029.3323
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	337553	5.0000	67510.6606
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	300598	5.0000	60119.6729

Target Compound *PFDoA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	27230	0.5000	0.7845
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	70195	1.2500	0.8257
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	276488	5.0000	0.8040
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	568506	10.0000	0.8528
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	1180288	20.0000	0.8549
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	2835995	50.0000	0.8402
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	10848846	200.0000	0.9023

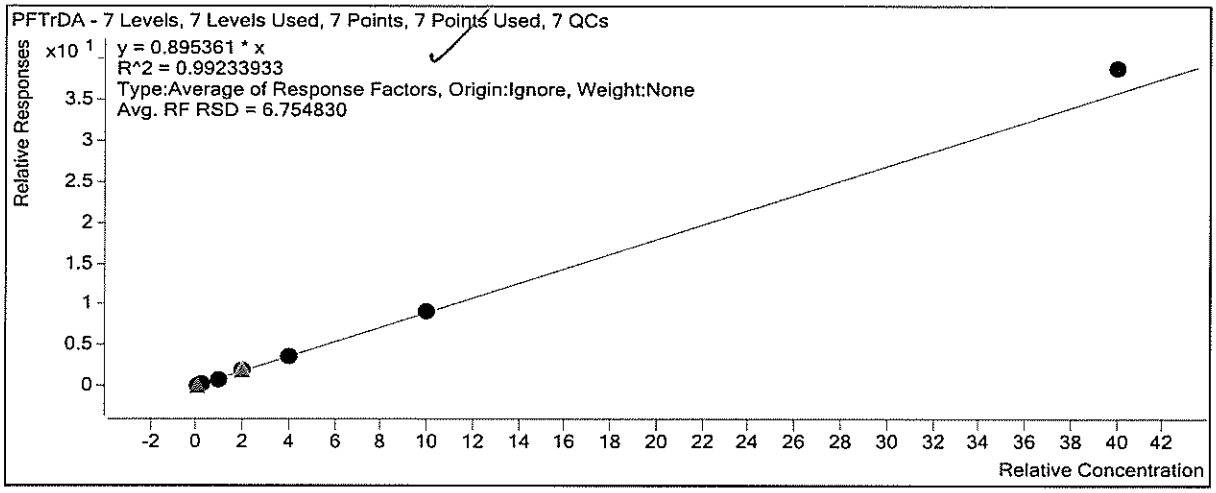


Target Compound *10:2 FTS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	3389	0.4820	2.4156
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	8600	1.2050	2.4988
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	32851	4.8200	2.3112

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	27909	0.5000	0.8040
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	73683	1.2500	0.8668
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	288447	5.0000	0.8387
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	630818	10.0000	0.9462
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	1280351	20.0000	0.9274
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	3085649	50.0000	0.9141
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	11666530	200.0000	0.9703



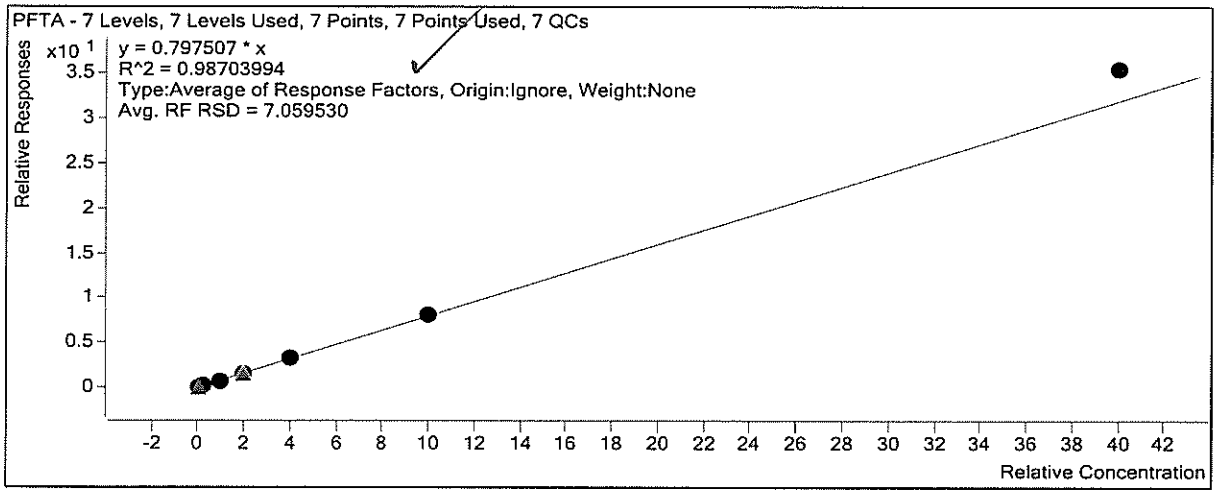
Extracted ISTD *d9-NEtFOSE*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	21691	5.0000	4338.2767
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	21476	5.0000	4295.1951
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	21389	5.0000	4277.8547
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	21496	5.0000	4299.1375
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	21262	5.0000	4252.4999
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	20653	5.0000	4130.6248
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	19560	5.0000	3911.9631

Extracted ISTD *d-NEtFOSA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	26014	5.0000	5202.8051
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	26271	5.0000	5254.1987
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	25967	5.0000	5193.4953

Quantitative Analysis Calibration Report



Extracted ISTD *M2PFHxDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	45256	5.0000	9051.2878
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	44469	5.0000	8893.8978
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	45876	5.0000	9175.1542
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	44021	5.0000	8804.1543
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	45312	5.0000	9062.4379
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	43628	5.0000	8725.5408
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☑	38996	5.0000	7799.1288

Target Compound *PFHxDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210818ACAL\2210818A_03.d	Calibration	1	☑	37735	0.5000	8.3381
D:\MassHunter\Data\2210818ACAL\2210818A_04.d	Calibration	2	☑	93058	1.2500	8.3705
D:\MassHunter\Data\2210818ACAL\2210818A_05.d	Calibration	3	☑	359939	5.0000	7.8459
D:\MassHunter\Data\2210818ACAL\2210818A_06.d	Calibration	4	☑	763328	10.0000	8.6701
D:\MassHunter\Data\2210818ACAL\2210818A_07.d	Calibration	5	☑	1574747	20.0000	8.6883
D:\MassHunter\Data\2210818ACAL\2210818A_08.d	Calibration	6	☑	3933629	50.0000	9.0164
D:\MassHunter\Data\2210818ACAL\2210818A_09.d	Calibration	7	☐	18882129	200.0000	12.1053

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/19/2021 09:57	Lab File ID:	2210818B_16.d
Analytical Method:		Analytical Batch:	719175

ANALYTE	UNITS	TRUE	FOUND	%REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	10200	107	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	10700	111	70	130	
NEtFOSAA	ng/L	10000	10400	104	70	130	
NMeFOSAA	ng/L	10000	10200	102	70	130	
Perfluorobutanoic acid	ng/L	10000	10400	104	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	9140	103	70	130	
Perfluorodecanoic acid	ng/L	10000	10300	103	70	130	
Perfluorododecanoic acid	ng/L	10000	10300	103	70	130	
Perfluoroheptanoic acid	ng/L	10000	10200	102	70	130	
Perfluorohexanoic acid	ng/L	10000	10200	102	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	9350	102	70	130	
Perfluorononanoic acid	ng/L	10000	10100	101	70	130	
Perfluorooctanoic acid	ng/L	10000	10100	101	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	9380	101	70	130	
Perfluoropentanoic acid	ng/L	10000	10400	104	70	130	
Perfluorotetradecanoic acid	ng/L	10000	10400	104	70	130	
Perfluorotridecanoic acid	ng/L	10000	10400	104	70	130	
Perfluoroundecanoic acid	ng/L	10000	10100	101	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/19/2021 12:42	Lab File ID:	2210818B_27.d
Analytical Method:		Analytical Batch:	719175

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	10300	108	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	10300	108	70	130	
NEtFOSAA	ng/L	10000	9990	100	70	130	
NMeFOSAA	ng/L	10000	10200	102	70	130	
Perfluorobutanoic acid	ng/L	10000	10400	104	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	9160	103	70	130	
Perfluorodecanoic acid	ng/L	10000	10400	104	70	130	
Perfluorododecanoic acid	ng/L	10000	10200	102	70	130	
Perfluoroheptanoic acid	ng/L	10000	10100	101	70	130	
Perfluorohexanoic acid	ng/L	10000	10400	104	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	9310	102	70	130	
Perfluorononanoic acid	ng/L	10000	10200	102	70	130	
Perfluorooctanoic acid	ng/L	10000	10000	100	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	9460	102	70	130	
Perfluoropentanoic acid	ng/L	10000	10300	103	70	130	
Perfluorotetradecanoic acid	ng/L	10000	10200	102	70	130	
Perfluorotridecanoic acid	ng/L	10000	10300	103	70	130	
Perfluoroundecanoic acid	ng/L	10000	10500	105	70	130	

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/19/2021 15:18	Lab File ID:	2210818B_37.d
Analytical Method:		Analytical Batch:	719175

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	9510	10200	108	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	10200	106	70	130	
NEtFOSAA	ng/L	10000	9880	99	70	130	
NMeFOSAA	ng/L	10000	10200	102	70	130	
Perfluorobutanoic acid	ng/L	10000	10400	104	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	9150	103	70	130	
Perfluorodecanoic acid	ng/L	10000	10200	102	70	130	
Perfluorododecanoic acid	ng/L	10000	10800	108	70	130	
Perfluoroheptanoic acid	ng/L	10000	10100	101	70	130	
Perfluorohexanoic acid	ng/L	10000	10100	101	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	9280	101	70	130	
Perfluorononanoic acid	ng/L	10000	10100	101	70	130	
Perfluorooctanoic acid	ng/L	10000	10000	100	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	9330	100	70	130	
Perfluoropentanoic acid	ng/L	10000	10300	103	70	130	
Perfluorotetradecanoic acid	ng/L	10000	10200	102	70	130	
Perfluorotridecanoic acid	ng/L	10000	10400	104	70	130	
Perfluoroundecanoic acid	ng/L	10000	10400	104	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	QQQ4
Analysis Date:	08/19/2021 17:34	Lab File ID:	2210818B_46.d
Analytical Method:		Analytical Batch:	719175

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	10300	108	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	10500	110	70	130	
NEtFOSAA	ng/L	10000	10400	104	70	130	
NMeFOSAA	ng/L	10000	10400	104	70	130	
Perfluorobutanoic acid	ng/L	10000	10400	104	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	9200	104	70	130	
Perfluorodecanoic acid	ng/L	10000	10400	104	70	130	
Perfluorododecanoic acid	ng/L	10000	10300	103	70	130	
Perfluoroheptanoic acid	ng/L	10000	10000	100	70	130	
Perfluorohexanoic acid	ng/L	10000	10100	101	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	9440	103	70	130	
Perfluorononanoic acid	ng/L	10000	10000	100	70	130	
Perfluorooctanoic acid	ng/L	10000	10100	101	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	9490	102	70	130	
Perfluoropentanoic acid	ng/L	10000	10300	103	70	130	
Perfluorotetradecanoic acid	ng/L	10000	10300	103	70	130	
Perfluorotridecanoic acid	ng/L	10000	10400	104	70	130	
Perfluoroundecanoic acid	ng/L	10000	10300	103	70	130	

FORM 7E - ORG

8I

INTERNAL STANDARD AREA SUMMARY

Report No:	221072807	Standard ID:	1450 (ISC)
Analyst:	ADA	Instrument ID:	QQQ4
Analysis Date:	08/19/21 06:29	Lab File ID:	2210818B_2.d
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	719175

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		1148682		739110		922114		187526	
CLIENT SAMPLE ID	*LAB SAMP ID*		*#*		*#*		*#*		*#*
CS-ERB-02	22107280715	1102741		704882		860127		182359	
MB2228831	2228831	1072957		710201		863060		183462	
LCS2228832	2228832	1109765		727136		901027		188585	
LCSD2228833	2228833	1083217		734156		876077		184145	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

LC-QQQ Instrument Run Log

Agilent

Instrument: QQQ 4
Instrument Batch: 2210811B.batch.bin
Current ICAL Batch: 2210811BCAL
ICAL Std (ID/Exp): 019-12-3 1/19/22
ICV Std (ID/Exp): 019-9-2 2/2/22

LIMS Batch (HBN): 718586
20mM NH4OAc (ID/Exp): 019-12-4 8/13/21
Methanol (ID/Exp): 2130577 5/31/26
EIS Mix (ID/Exp): 019-11-1 1/19/22
IIS Mix (ID/Exp): 019-11-5 2/9/22

Acquisition time	Data File	Name	Type	Dilution	Comment
08/11/21 17:41:51	2210811B_01.d	1204 RT TEST	QC	1	RXJ,QQQ4;TEST
08/11/21 18:09:47	2210811B_02.d	1201	Sample	1	RXJ,QQQ4;ICAL S/N low NMeFOSA and NEtFOSE
08/11/21 18:24:35	2210811B_03.d	1202	Cal	1	RXJ,QQQ4;ICAL
08/11/21 18:39:11	2210811B_04.d	1203	Cal	1	RXJ,QQQ4;ICAL
08/11/21 18:53:46	2210811B_05.d	1204	Cal	1	RXJ,QQQ4;ICAL
08/11/21 19:08:22	2210811B_06.d	1205	Cal	1	RXJ,QQQ4;ICAL
08/11/21 19:22:58	2210811B_07.d	1206	Cal	1	RXJ,QQQ4;ICAL
08/11/21 19:38:06	2210811B_08.d	1201	Cal	1	RXJ,QQQ4;ICAL
08/11/21 19:52:42	2210811B_09.d	1207	Cal	1	RXJ,QQQ4;ICAL
08/11/21 20:13:19	2210811B_10.d	1500	Blank	1	RXJ,QQQ4;BLANK
08/11/21 20:28:04	2210811B_11.d	1600	Sample	1	RXJ,QQQ4;ICV
08/11/21 20:42:40	2210811B_12.d	1450	QC	1	RXJ,QQQ4;CCV
08/11/21 21:09:05	2210811B_13.d	2225095	Sample	1	RXJ,QQQ4;718318
08/11/21 21:23:49	2210811B_14.d	2225096	QC	1	RXJ,QQQ4;718318
08/11/21 21:38:26	2210811B_15.d	2225097	QC	1	RXJ,QQQ4;718318
08/11/21 21:53:03	2210811B_16.d	22107280721	Sample	1	RXJ,QQQ4;718318
08/11/21 22:07:40	2210811B_17.d	22107297901	Sample	1	RXJ,QQQ4;718318
08/11/21 22:22:16	2210811B_18.d	22107297902	Sample	1	RXJ,QQQ4;718318
08/11/21 22:36:52	2210811B_19.d	22108052826	Sample	1	RXJ,QQQ4;718318
08/11/21 22:51:28	2210811B_20.d	22108052827	Sample	1	RXJ,QQQ4;718318
08/11/21 23:06:05	2210811B_21.d	22108052828	Sample	1	RXJ,QQQ4;718318
08/11/21 23:20:42	2210811B_22.d	22108052829	Sample	1	RXJ,QQQ4;718318
08/11/21 23:35:21	2210811B_23.d	22108052830	Sample	1	RXJ,QQQ4;718318
08/11/21 23:49:57	2210811B_24.d	22108052831	Sample	1	RXJ,QQQ4;718318
08/12/21 00:04:33	2210811B_25.d	22108052832	Sample	1	RXJ,QQQ4;718318
08/12/21 00:19:09	2210811B_26.d	1400	QC	1	RXJ,QQQ4;CCV
08/12/21 00:33:45	2210811B_27.d	22108052833	Sample	1	RXJ,QQQ4;718318
08/12/21 00:48:23	2210811B_28.d	22108052834	Sample	1	RXJ,QQQ4;718318
08/12/21 01:03:00	2210811B_29.d	22108065705	Sample	1	RXJ,QQQ4;718318
08/12/21 01:17:36	2210811B_30.d	22108065734	Sample	1	RXJ,QQQ4;718318
08/12/21 01:32:13	2210811B_31.d	22108065735	Sample	1	RXJ,QQQ4;718318
08/12/21 01:46:50	2210811B_32.d	22108091921	Sample	1	RXJ,QQQ4;718318
08/12/21 02:01:29	2210811B_33.d	22108091922	Sample	1	RXJ,QQQ4;718318
08/12/21 02:16:05	2210811B_34.d	22108090902	Sample	1	RXJ,QQQ4;718318
08/12/21 02:30:41	2210811B_35.d	22108090906	Sample	1	RXJ,QQQ4;718318
08/12/21 02:45:17	2210811B_36.d	22108090907	Sample	1	RXJ,QQQ4;718318
08/12/21 02:59:54	2210811B_37.d	1400	QC	1	RXJ,QQQ4;CCV

7S

ORGANICS INSTRUMENT SENSITIVITY CHECK

Report No:	221072979	Instrument ID:	QQQ4
Analysis Date:	08/11/2021 20:42	Lab File ID:	2210811B_12.d
Analytical Method:		Analytical Batch:	718586

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	3.81	3.70	97	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	3.84	3.63	95	70	130	
NEtFOSAA	ng/L	4.00	3.98	100	70	130	
NMeFOSAA	ng/L	4.00	4.42	110	70	130	
Perfluorobutanoic acid	ng/L	4.00	3.74	94	70	130	
Perfluorobutanesulfonic acid	ng/L	3.55	3.26	92	70	130	
Perfluorodecanoic acid	ng/L	4.00	3.67	92	70	130	
Perfluorododecanoic acid	ng/L	4.00	3.62	91	70	130	
Perfluoroheptanoic acid	ng/L	4.00	3.61	90	70	130	
Perfluorohexanoic acid	ng/L	4.00	3.70	93	70	130	
Perfluorohexanesulfonic acid	ng/L	3.66	3.62	99	70	130	
Perfluorononanoic acid	ng/L	4.00	3.65	91	70	130	
Perfluorooctanoic acid	ng/L	4.00	3.70	92	70	130	
Perfluorooctanesulfonic acid	ng/L	3.71	3.44	93	70	130	
Perfluoropentanoic acid	ng/L	4.00	3.68	92	70	130	
Perfluorotetradecanoic acid	ng/L	4.00	3.71	93	70	130	
Perfluorotridecanoic acid	ng/L	4.00	3.84	96	70	130	
Perfluoroundecanoic acid	ng/L	4.00	3.51	88	70	130	

FORM 7S - ORG

6I

ORGANICS INITIAL CALIBRATION VERIFICATION

Report No:	221072979	Instrument ID:	QQQ4
Analysis Date:	08/11/2021 20:28	Lab File ID:	2210811B_11.d
Analytical Method:		Analytical Batch:	718586

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
6:2 Fluorotelomersulfonic acid	ng/L	10000	10500	105	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	10100	10300	102	70	130	
NEtFOSAA	ng/L	10000	9570	96	70	130	
NMeFOSAA	ng/L	10000	10300	103	70	130	
Perfluorobutanoic acid	ng/L	10000	10100	101	70	130	
Perfluorobutanesulfonic acid	ng/L	10000	10200	102	70	130	
Perfluorodecanoic acid	ng/L	10000	10300	103	70	130	
Perfluorododecanoic acid	ng/L	10000	9860	99	70	130	
Perfluoroheptanoic acid	ng/L	10000	10100	101	70	130	
Perfluorohexanoic acid	ng/L	10100	10000	99	70	130	
Perfluorohexanesulfonic acid	ng/L	10000	10000	100	70	130	
Perfluorononanoic acid	ng/L	10000	10600	106	70	130	
Perfluorooctanoic acid	ng/L	10100	9720	96	70	130	
Perfluorooctanesulfonic acid	ng/L	10000	9130	91	70	130	
Perfluoropentanoic acid	ng/L	10100	10400	103	70	130	
Perfluorotetradecanoic acid	ng/L	10000	10300	103	70	130	
Perfluorotridecanoic acid	ng/L	10000	9370	94	70	130	
Perfluoroundecanoic acid	ng/L	10000	10000	100	70	130	

4I

ORGANICS INSTRUMENT BLANK

Report No:	221072979	Instrument ID:	QQQ4
Analysis Date:	08/11/2021 20:13	Lab File ID:	2210811B_10.d
Analytical Method:	EPA 537 Mod Isotope Dilution	Analytical Batch:	718586

ANALYTE	*UNITS*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*	*#*
6:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.50	3.00	4.00	
8:2 Fluorotelomersulfonic acid	ng/L	3.00	U	1.06	3.00	4.00	
NEtFOSAA	ng/L	3.16	J	1.58	4.00	8.00	
NMeFOSAA	ng/L	3.07	J	0.90	4.00	8.00	
Perfluorobutanesulfonic acid	ng/L	2.00	U	0.62	2.00	4.00	
Perfluorobutanoic acid	ng/L	3.50	U	1.52	3.50	4.00	
Perfluorodecanoic acid	ng/L	3.00	U	1.44	3.00	4.00	
Perfluorododecanoic acid	ng/L	3.00	U	1.30	3.00	4.00	
Perfluoroheptanoic acid	ng/L	3.00	U	1.16	3.00	4.00	
Perfluorohexanesulfonic acid	ng/L	3.00	U	1.24	3.00	4.00	
Perfluorohexanoic acid	ng/L	2.00	U	0.94	2.00	4.00	
Perfluorononanoic acid	ng/L	2.00	U	0.98	2.00	4.00	
Perfluorooctanesulfonic acid	ng/L	2.00	U	0.76	2.00	4.00	
Perfluorooctanoic acid	ng/L	2.00	U	0.84	2.00	4.00	
Perfluoropentanoic acid	ng/L	2.00	U	0.88	2.00	4.00	
Perfluorotetradecanoic acid	ng/L	3.00	U	1.14	3.00	4.00	
Perfluorotridecanoic acid	ng/L	3.00	U	1.23	3.00	4.00	
Perfluoroundecanoic acid	ng/L	3.00	U	1.24	3.00	4.00	

* - Result greater than 1/2 LOQ

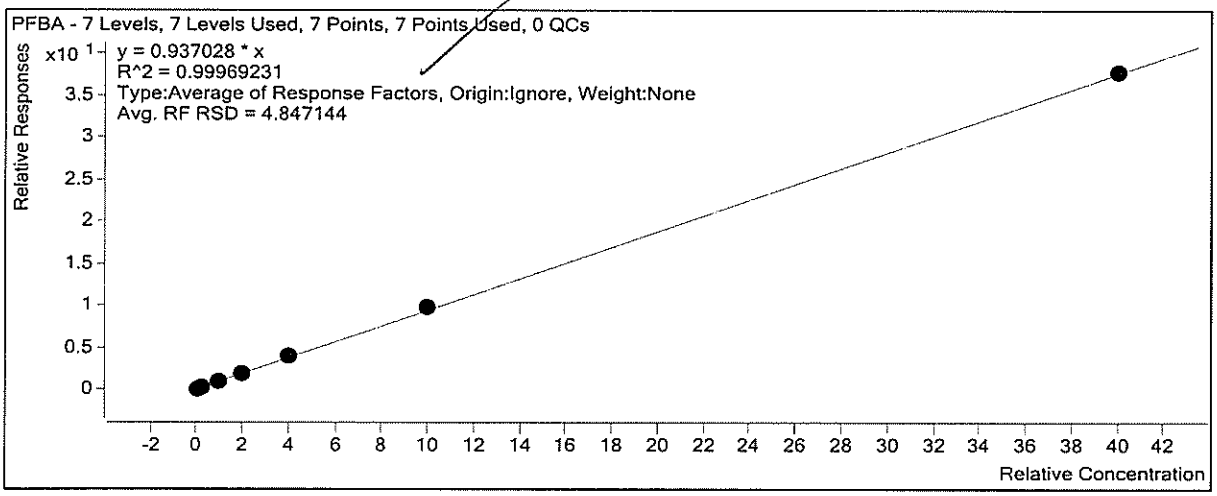
Quantitative Analysis Calibration Report

Batch Data Path	D:\MassHunter\Data\QQQ4\2210811BCAL\QuantResults\2210811B.batch.bin		
Analysis Time	8/12/2021 4:03 PM	**Analyst Name**	GCAL\lcms
Report Time	8/12/2021 4:07 PM	**Reporter Name**	GCAL\lcms
Last Calib Update	8/11/2021 8:10 PM	**Batch State**	Processed

Calibration Info

Target Compound *PFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	10997	0.5000	0.8588
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	27317	1.2500	0.9277
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	110050	5.0000	0.9122
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	243531	10.0000	0.9399
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	478346	20.0000	0.9910
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	1173646	50.0000	0.9881
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	4582770	200.0000	0.9416

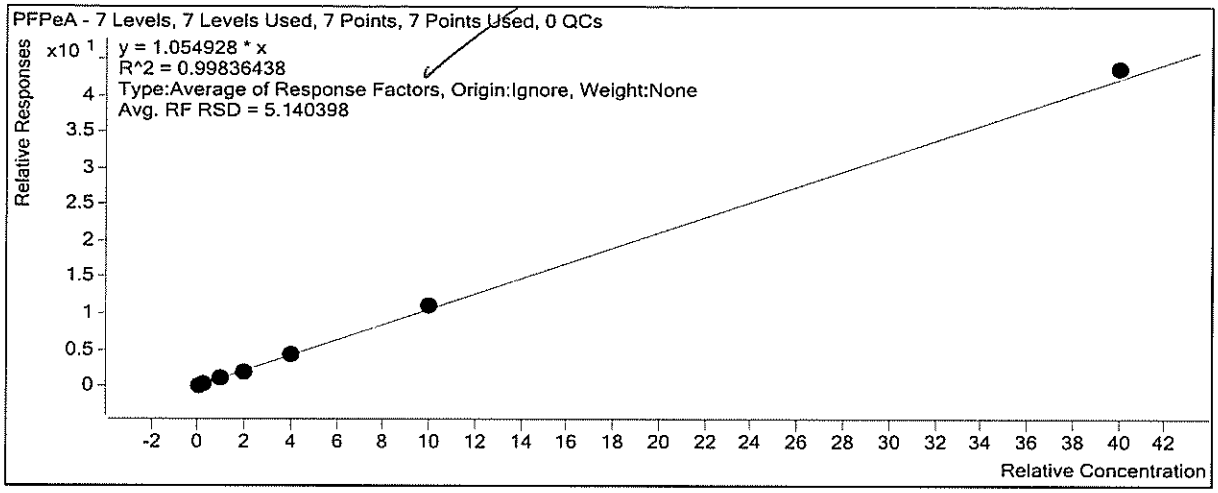


Extracted ISTD *MPFBA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	128051	5.0000	25610.1061
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	117789	5.0000	23557.7782
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	120644	5.0000	24128.8988
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	129557	5.0000	25911.3525
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	120675	5.0000	24135.0225
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	118775	5.0000	23754.9416
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	121678	5.0000	24335.5002

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	15709	0.5000	0.9714
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	39023	1.2500	1.0366
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	159972	5.0000	1.0207
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	347346	10.0000	1.0336
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	685107	20.0000	1.1202
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	1657003	50.0000	1.1112
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	6422737	200.0000	1.0907



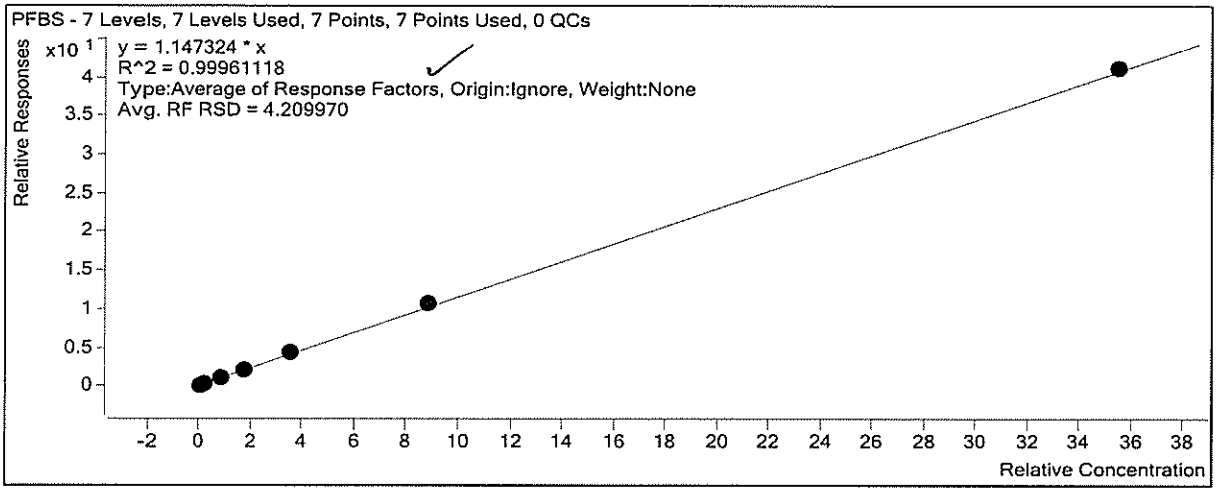
Extracted ISTD *M3PFBS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	55779	5.0000	11155.7052
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	52209	5.0000	10441.8650
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	53280	5.0000	10656.0374
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	57673	5.0000	11534.6103
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	52291	5.0000	10458.2558
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	50567	5.0000	10113.3339
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	49043	5.0000	9808.5687

Target Compound *PFBS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	5405	0.4435	1.0925

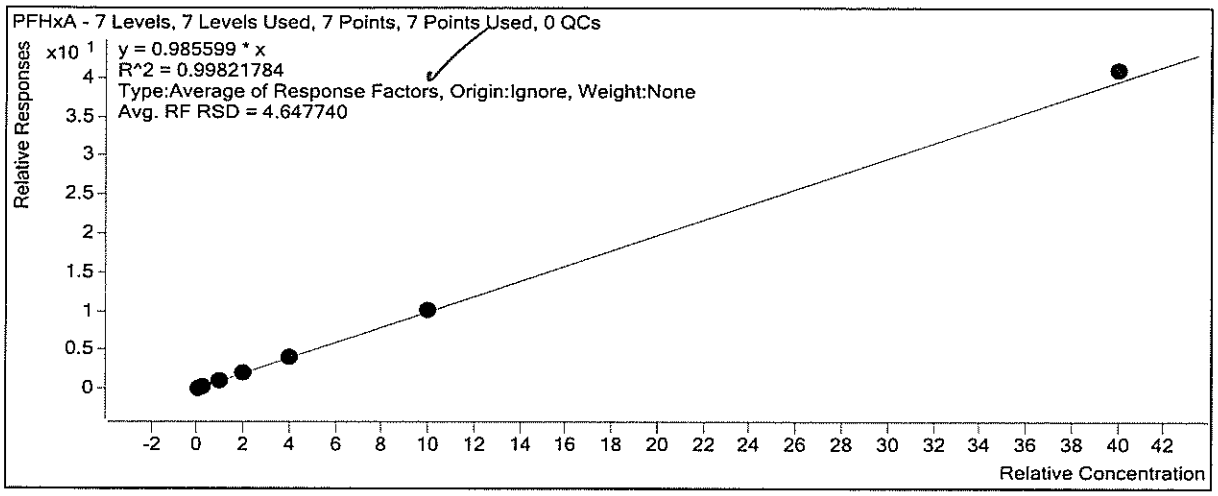
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	12832	1.1088	1.1083
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	52683	4.4350	1.1148
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	116088	8.8700	1.1346
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	225896	17.7400	1.2176
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	539778	44.3500	1.2034
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	2018552	177.4000	1.1601



Target Compound *PFMBA*

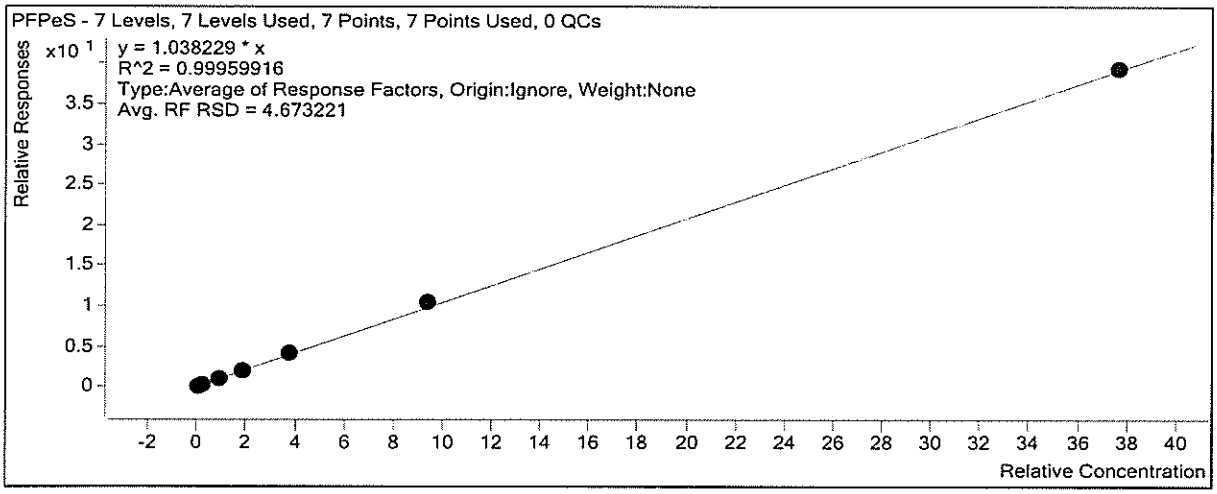
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	7227	0.5000	0.3792
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	18011	1.2500	0.4194
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	74369	5.0000	0.4163
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	164420	10.0000	0.4236
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	322788	20.0000	0.4565
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	783340	50.0000	0.4491
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☐	4039722	200.0000	0.5973

Quantitative Analysis Calibration Report



Target Compound *PFPeS*

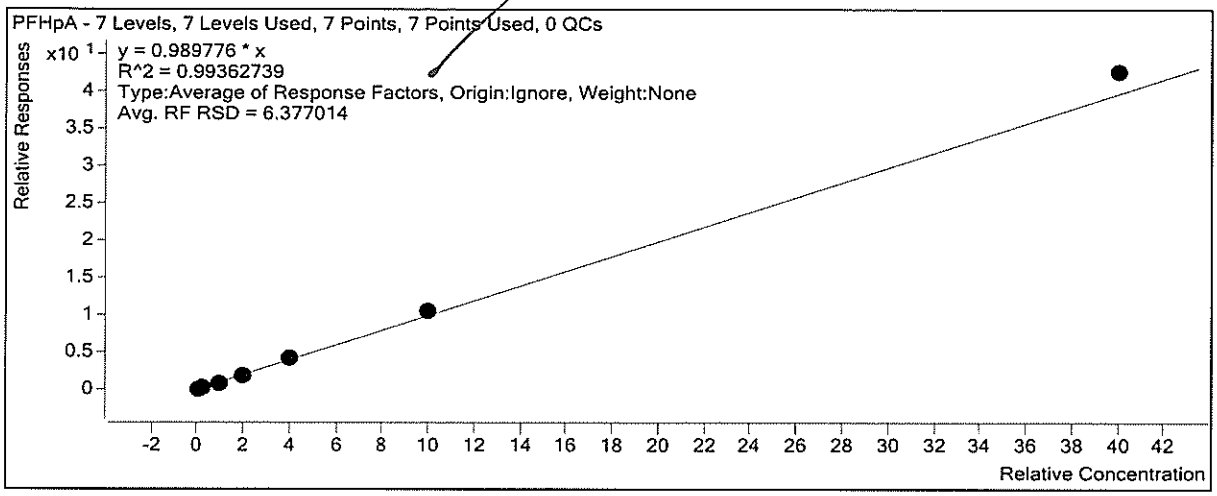
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	5190	0.4705	0.9887
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	12371	1.1763	1.0072
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	50331	4.7050	1.0039
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	110023	9.4100	1.0137
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	218063	18.8200	1.1079
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	524239	47.0500	1.1017
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	1928157	188.2000	1.0445



Target Compound *HFPO-DA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	650490	10.0000	0.9777
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	1282896	20.0000	1.0393
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	3140339	50.0000	1.0423
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	12666655	200.0000	1.0637



Extracted ISTD *M4PFHpA*

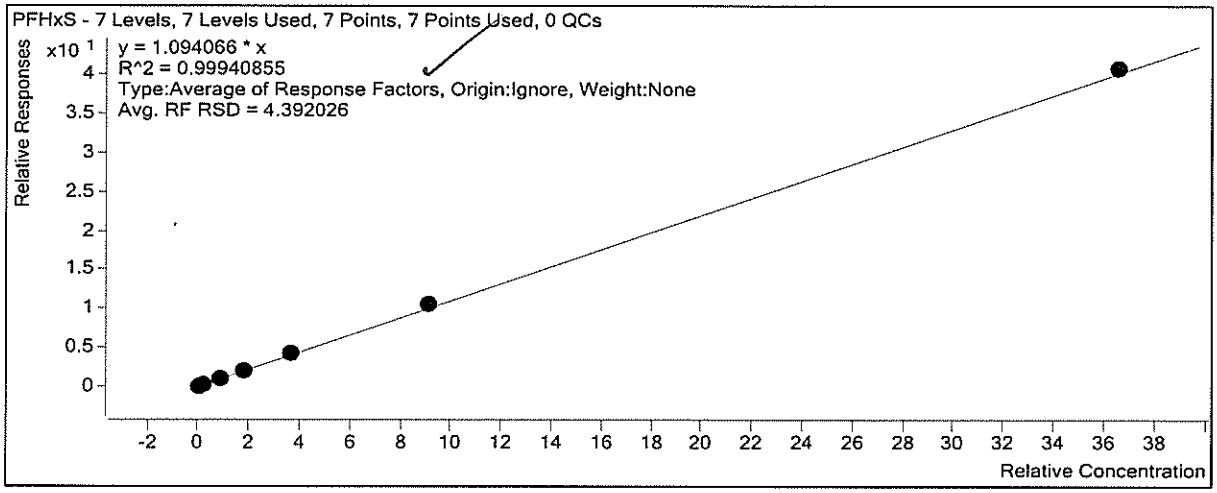
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	328568	5.0000	65713.6667
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	301855	5.0000	60371.0136
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	309921	5.0000	61984.2687
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	332677	5.0000	66535.3420
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	308592	5.0000	61718.4163
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	301277	5.0000	60255.4574
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	297715	5.0000	59542.9179

Target Compound *PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	4368	0.4570	1.0258
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	10530	1.1425	1.0880
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	41600	4.5700	1.0433
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	93293	9.1400	1.0895
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	182125	18.2800	1.1481
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	441942	45.7000	1.1515

Quantitative Analysis Calibration Report

D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	1643175	182.8000	1.1124



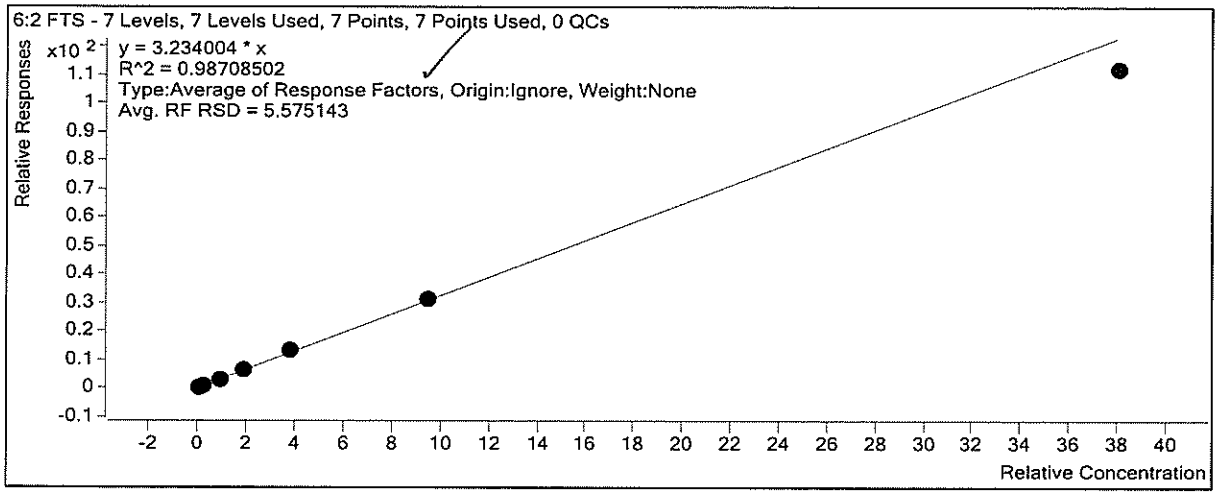
Extracted ISTD *M3PFHxS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	46590	5.0000	9318.0904
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	42358	5.0000	8471.6626
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	43627	5.0000	8725.4222
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	46844	5.0000	9368.8745
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	43390	5.0000	8678.0165
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	41991	5.0000	8398.2488
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	40403	5.0000	8080.6355

Target Compound *ADONA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	34767	0.4725	1.4789
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	86029	1.1813	1.6241
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	352187	4.7250	1.5980
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	766408	9.4500	1.6158
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	1517544	18.9000	1.7183
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	3738331	47.2500	1.7702
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	15443079	189.0000	1.8575

Quantitative Analysis Calibration Report



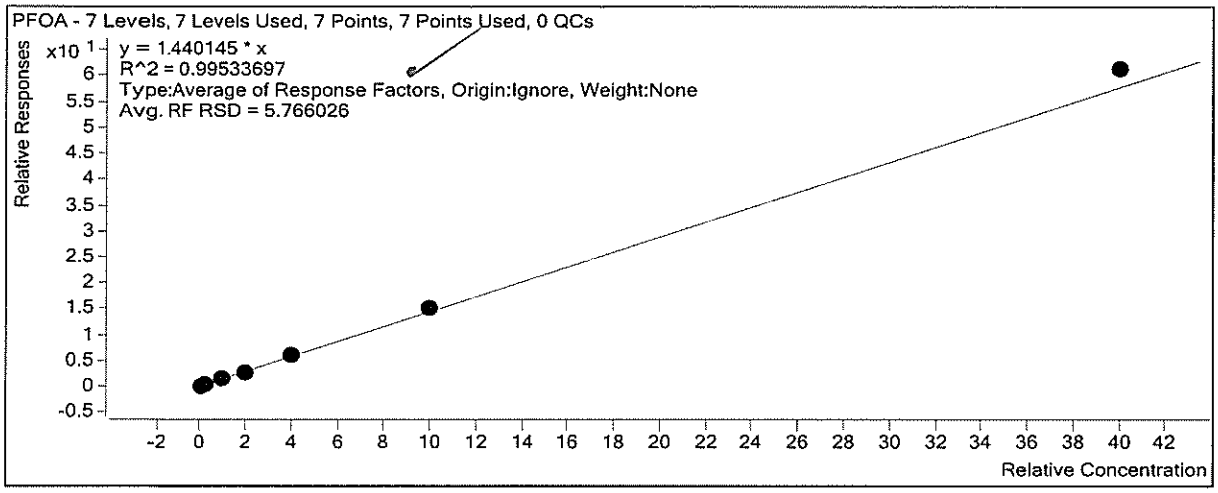
Extracted ISTD *M8PFOA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	248780	5.0000	49755.9398
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	224200	5.0000	44840.0439
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	233224	5.0000	46644.8183
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	250957	5.0000	50191.4641
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	233645	5.0000	46729.0629
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	223477	5.0000	44695.4723
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	219942	5.0000	43988.4169

Instrument ISTD *MPFOA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	1798379	25.0000	71935.1453
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	1703757	25.0000	68150.2988
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	1729801	25.0000	69192.0250
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	1657579	25.0000	66303.1497
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	1688488	25.0000	67539.5081
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	1610809	25.0000	64432.3489
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	1568434	25.0000	62737.3588

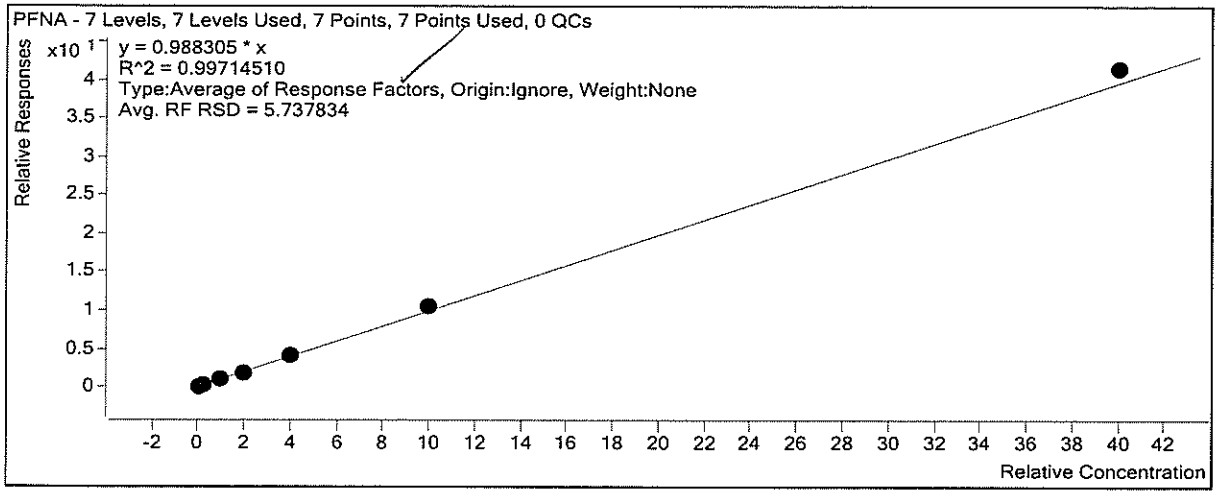
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	32190	0.5000	1.2939
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	79526	1.2500	1.4188
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	327155	5.0000	1.4027
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	713382	10.0000	1.4213
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	1390398	20.0000	1.4877
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	3411266	50.0000	1.5264
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	13460554	200.0000	1.5300



Target Compound *PFHpS*

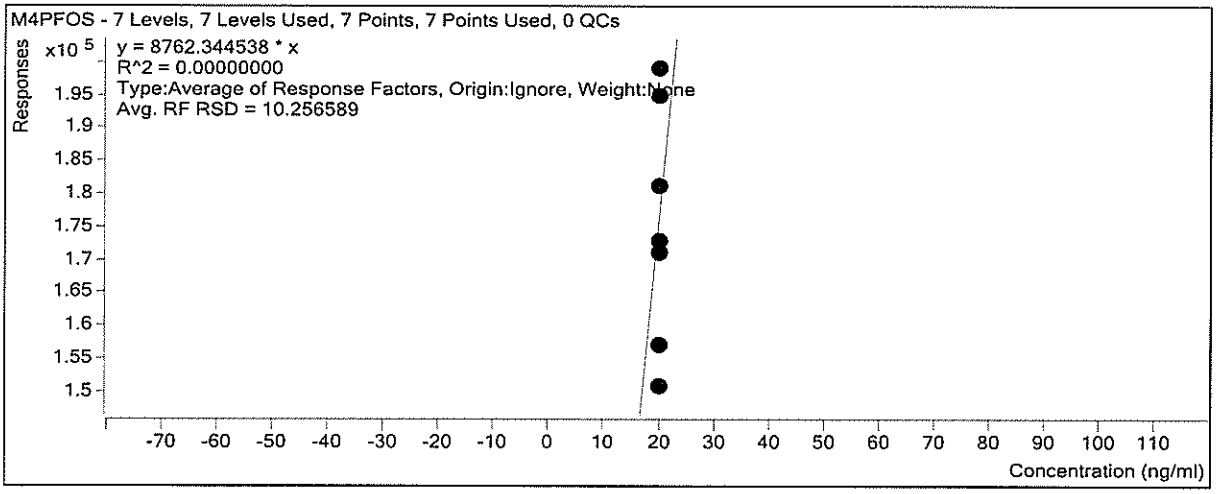
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	4401	0.4765	0.9912
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	10435	1.1913	1.0340
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	44094	4.7650	1.0606
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	96244	9.5300	1.0779
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	190400	19.0600	1.1511
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	451793	47.6500	1.1290
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	1631524	190.6000	1.0593

Quantitative Analysis Calibration Report



Instrument ISTD *M4PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	172830	20.0000	8641.5127
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	194792	20.0000	9739.6248
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	199024	20.0000	9951.2107
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	181268	20.0000	9063.4179
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	171049	20.0000	8552.4510
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	156918	20.0000	7845.8800
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	150846	20.0000	7542.3147



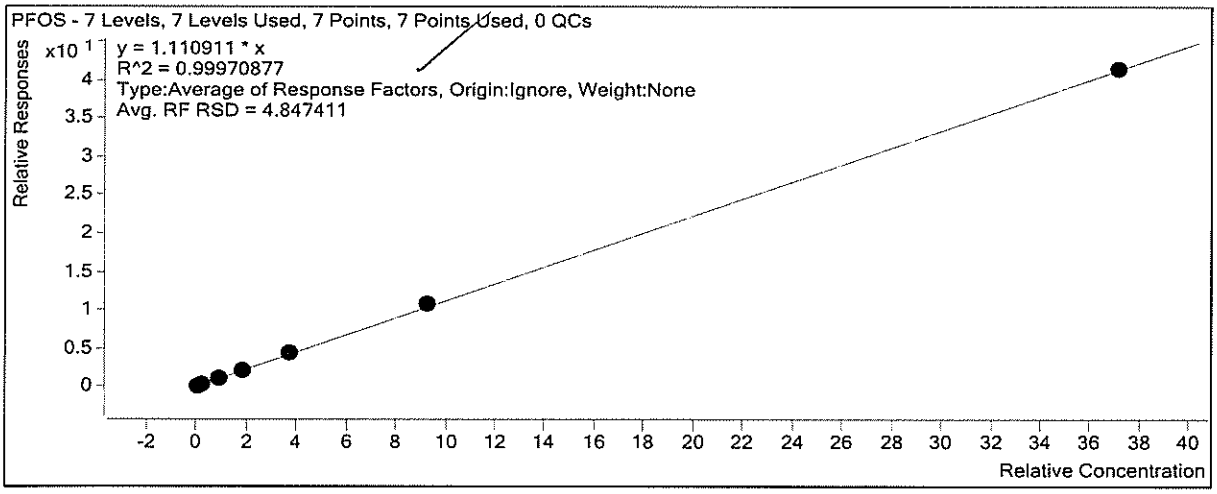
Extracted ISTD *M8PFOS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	42707	5.0000	8541.3642
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	39501	5.0000	7900.2818
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	41005	5.0000	8201.0229
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	43699	5.0000	8739.7459
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	39625	5.0000	7924.9652
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	39068	5.0000	7813.5029
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	37418	5.0000	7483.6142

Target Compound *PFOS*

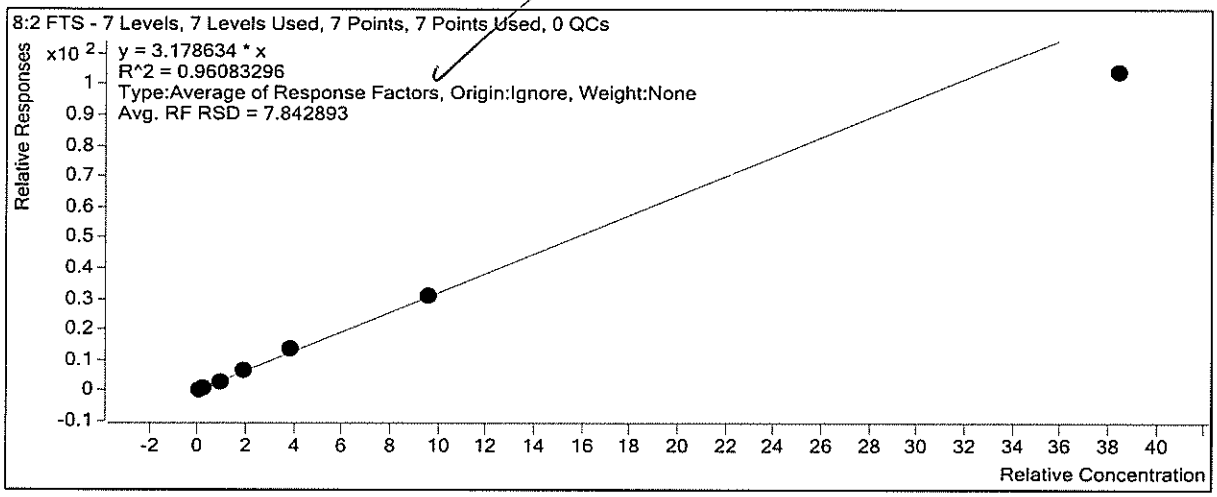
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	4198	0.4640	1.0592
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	10076	1.1600	1.0995
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	39662	4.6400	1.0423
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	89271	9.2800	1.1007
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	175473	18.5600	1.1930
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	422690	46.4000	1.1659
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	1549851	185.6000	1.1158



Target Compound *9Cl-PF3ONS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	27328	0.4665	6.8586
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	68611	1.1663	7.4463
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	275817	4.6650	7.2094

D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	976897	192.0000	2.7075



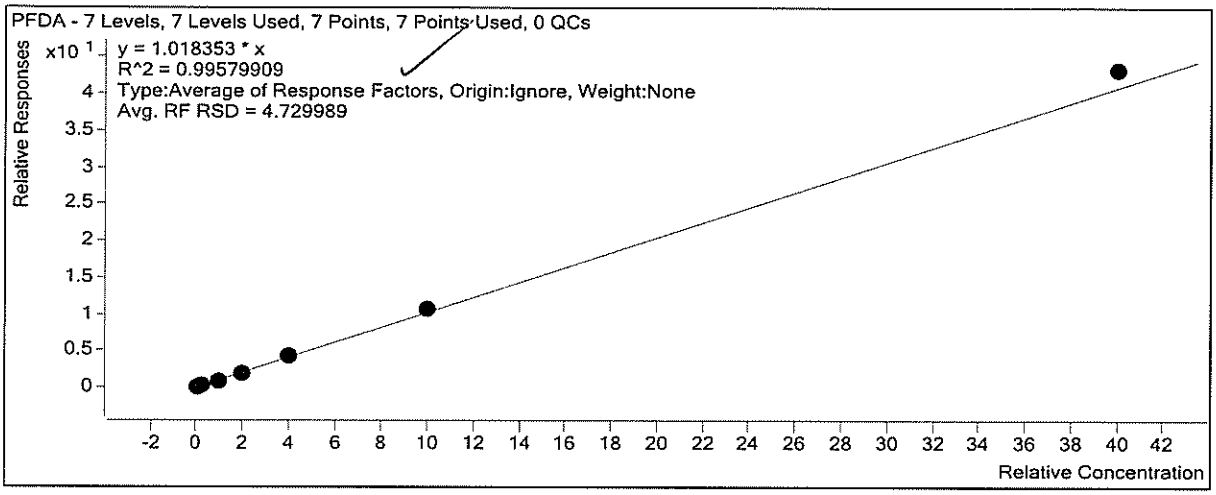
Extracted ISTD *M6PFDA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	289494	5.0000	57898.7474
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	265339	5.0000	53067.7863
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	275377	5.0000	55075.4330
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	290727	5.0000	58145.4968
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	269458	5.0000	53891.5510
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	255343	5.0000	51068.6705
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	240856	5.0000	48171.2339

Target Compound *PFNS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	3837	0.4810	0.9339
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	9740	1.2025	1.0253
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	38098	4.8100	0.9658
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	85915	9.6200	1.0219
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	160896	19.2400	1.0552
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	389591	48.1000	1.0366
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	1358452	192.4000	0.9435

D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	27808	0.5000	0.9606
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	65887	1.2500	0.9932
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	267435	5.0000	0.9712
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	582871	10.0000	1.0024
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	1134163	20.0000	1.0523
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	2732114	50.0000	1.0700
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	10393615	200.0000	1.0788



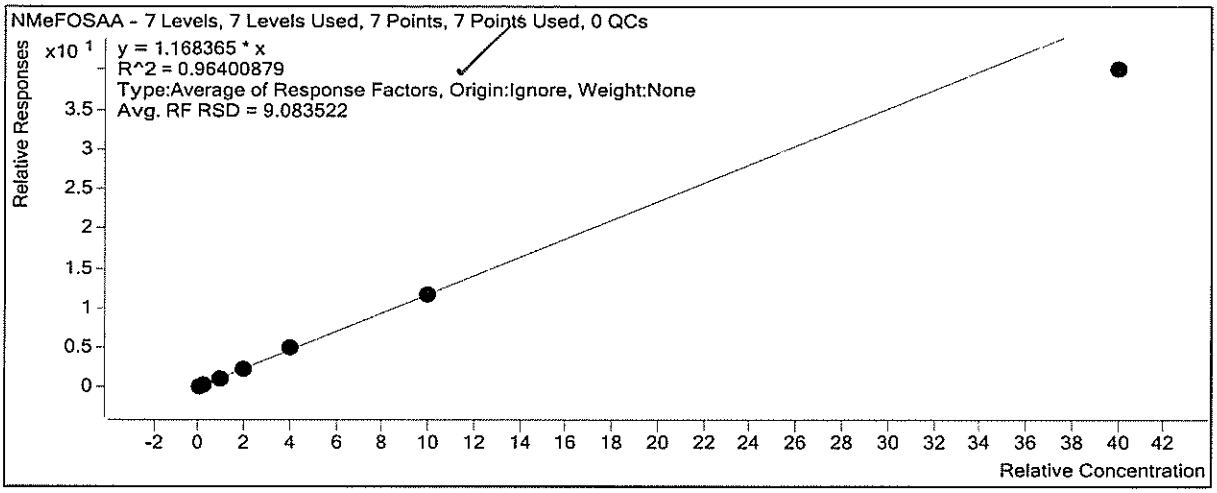
Extracted ISTD *d3-NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	33264	5.0000	6652.8320
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	31379	5.0000	6275.7703
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	32379	5.0000	6475.8709
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	34374	5.0000	6874.7675
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	30318	5.0000	6063.5824
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	31854	5.0000	6370.7724
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	35299	5.0000	7059.7940

Target Compound *NMeFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	4380	0.5000	1.3168
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	9090	1.2500	1.1588
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	35567	5.0000	1.0984

D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	78935	10.0000	1.1482
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	155063	20.0000	1.2786
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	374775	50.0000	1.1765
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	1413666	200.0000	1.0012



Extracted ISTD *M8FOSA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	99116	5.0000	19823.1490
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	95615	5.0000	19122.9382
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	97837	5.0000	19567.3520
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	103056	5.0000	20611.1816
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	95831	5.0000	19166.2985
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	95188	5.0000	19037.5849
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	96878	5.0000	19375.5962

Target Compound *FOSA*

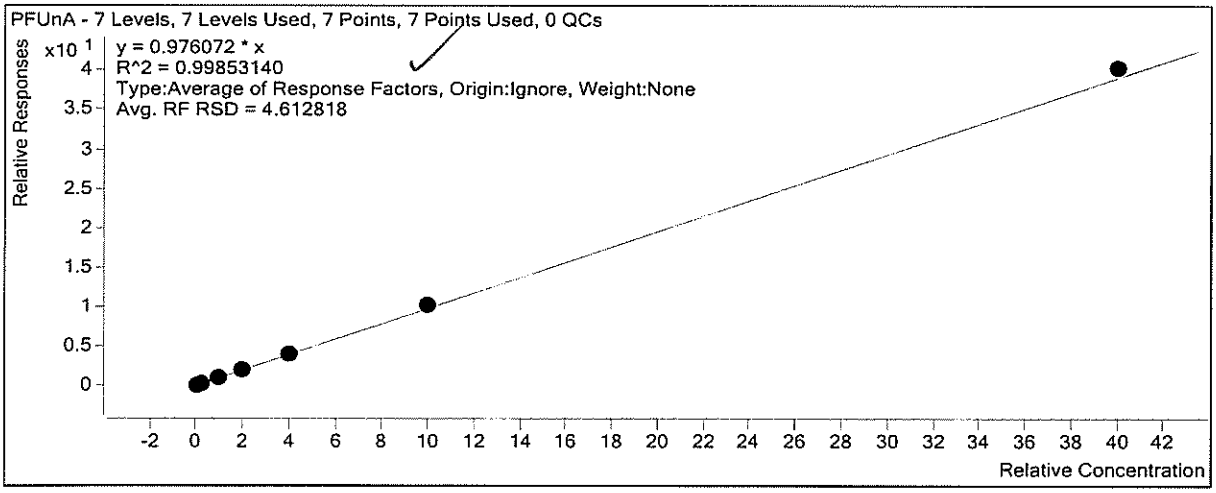
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	9606	0.5000	0.9692
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	24147	1.2500	1.0102
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	97402	5.0000	0.9956
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	211303	10.0000	1.0252
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	411938	20.0000	1.0746
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	1005895	50.0000	1.0567

Quantitative Analysis Calibration Report

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	276273	5.0000	55254.5261
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	262130	5.0000	52425.9845
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	267231	5.0000	53446.2996
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	285826	5.0000	57165.1861
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	257274	5.0000	51454.8664
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	247539	5.0000	49507.7842
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	229686	5.0000	45937.2754

Target Compound *PFUnA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	25038	0.5000	0.9063
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	61827	1.2500	0.9435
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	256887	5.0000	0.9613
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	550617	10.0000	0.9632
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	1056181	20.0000	1.0263
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	2535519	50.0000	1.0243
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	9257708	200.0000	1.0076



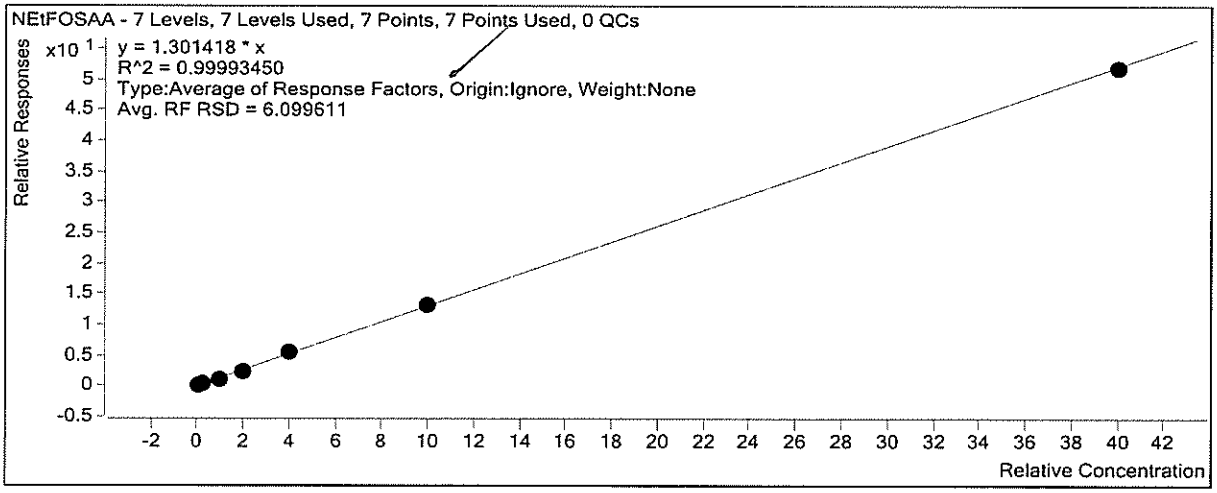
Extracted ISTD *d5-NEtFOSAA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	60358	5.0000	12071.5905

D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	54581	5.0000	10916.1737
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	57930	5.0000	11586.0138
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	60904	5.0000	12180.8804
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	54654	5.0000	10930.7945
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	52749	5.0000	10549.8822
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	44774	5.0000	8954.7311

Target Compound *NEtFOSAA*

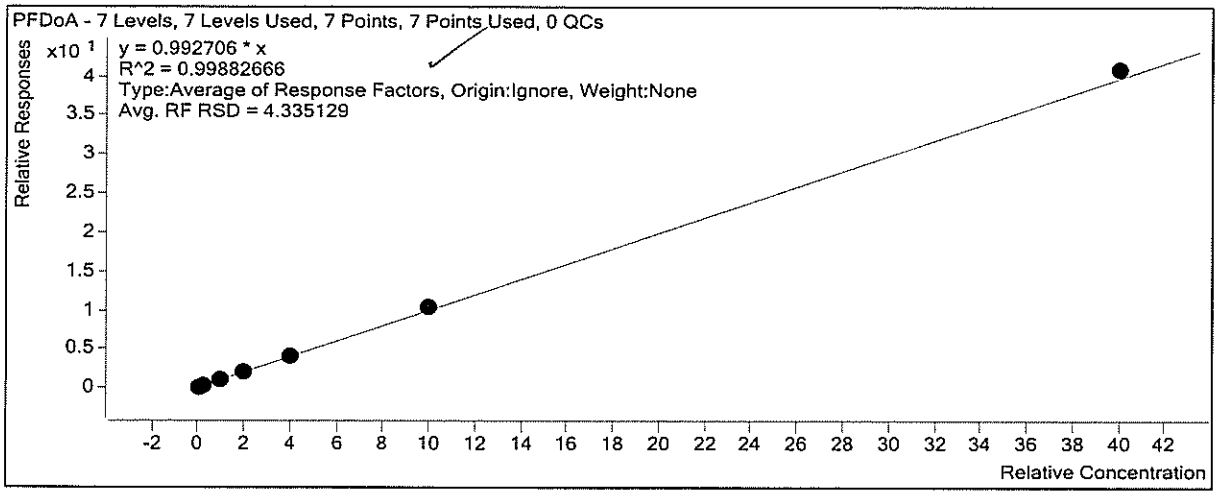
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	8714	0.5000	1.4438
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	17599	1.2500	1.2898
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	69154	5.0000	1.1937
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	150870	10.0000	1.2386
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	293766	20.0000	1.3438
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	688852	50.0000	1.3059
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	2318172	200.0000	1.2944



Target Compound *11Cl-PF3OUdS*

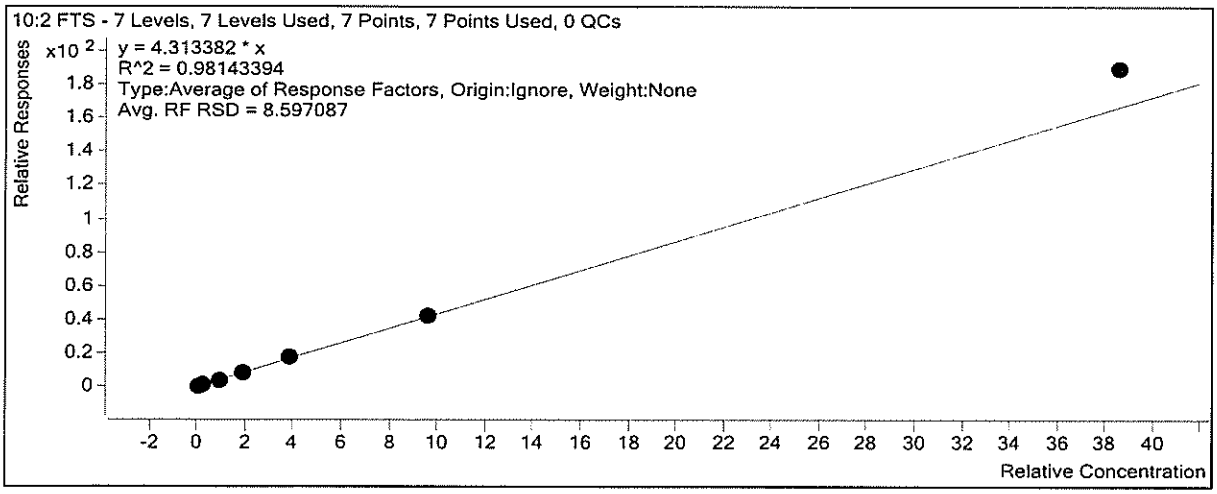
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	17850	0.4715	4.4323
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	44110	1.1788	4.7364
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	179462	4.7150	4.6411
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	397943	9.4300	4.8285

Quantitative Analysis Calibration Report



Target Compound *10:2 FTS*

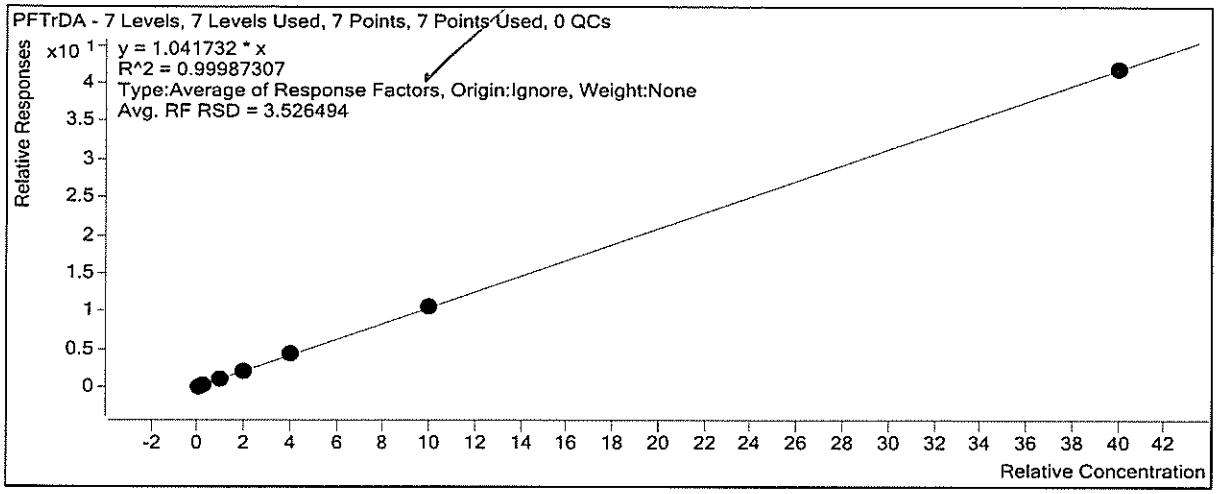
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	4607	0.4820	4.0538
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	10526	1.2050	3.8363
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	43249	4.8200	4.0223
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	99140	9.6400	4.4324
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	190213	19.2800	4.5966
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	435636	48.2000	4.3476
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	1777040	192.8000	4.9047



Target Compound *PFDoS*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

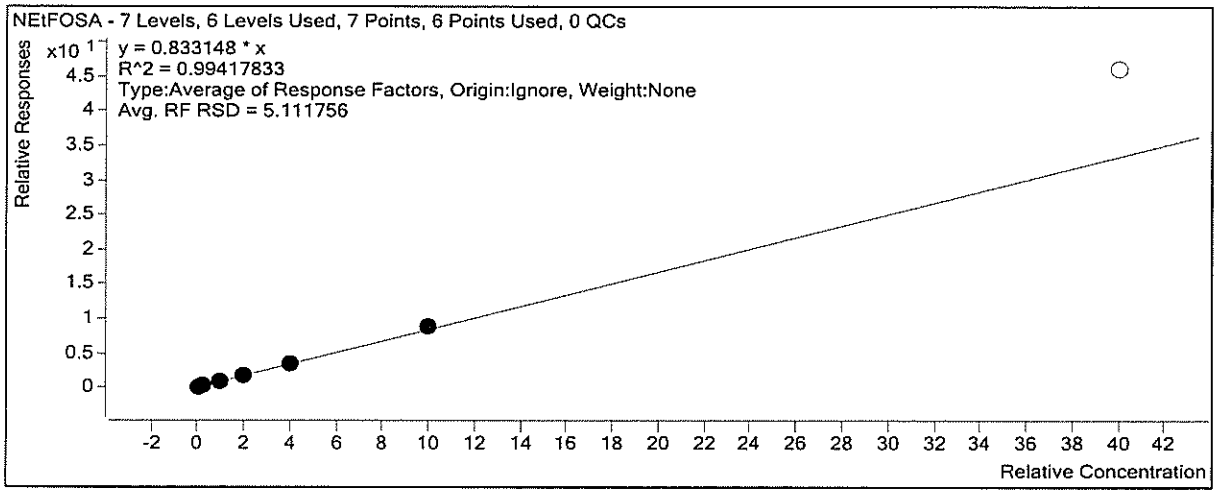
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	707484	10.0000	1.0386
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	1386654	20.0000	1.1002
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	3342372	50.0000	1.0746
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	12763836	200.0000	1.0441



Target Compound *NMeFOSA*

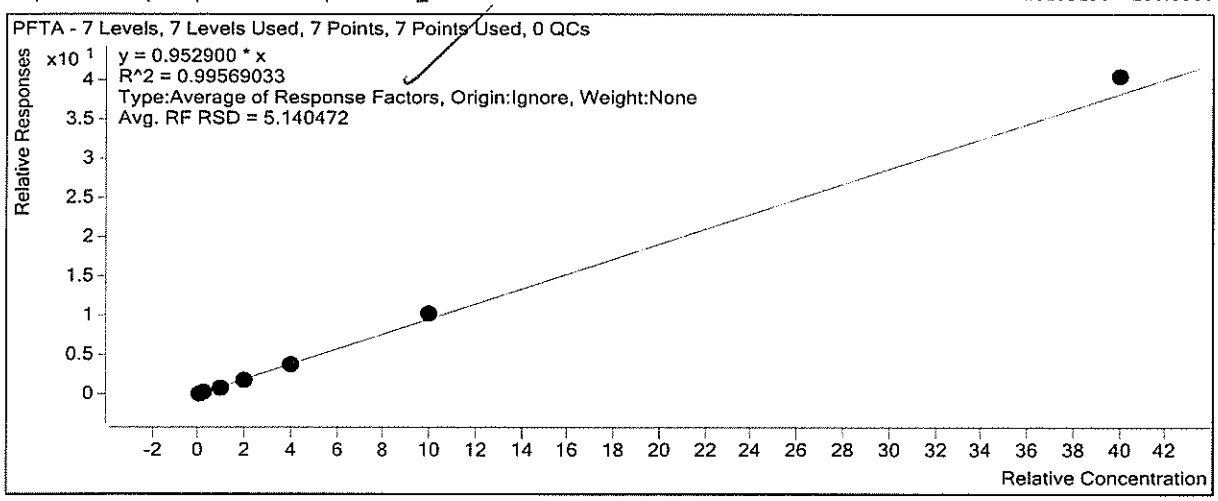
Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	1852	0.5000	0.8148
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	4486	1.2500	0.8207
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	17415	5.0000	0.7664
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	36108	10.0000	0.7588
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	73574	20.0000	0.8633
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	181414	50.0000	0.8294
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	889451	200.0000	0.9558

Quantitative Analysis Calibration Report



Target Compound *PFTA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF
D:\MassHunter\Data\2210811BCAL\2210811B_08.d	Calibration	1	☑	38430	0.5000	0.8939
D:\MassHunter\Data\2210811BCAL\2210811B_03.d	Calibration	2	☑	92678	1.2500	0.9506
D:\MassHunter\Data\2210811BCAL\2210811B_04.d	Calibration	3	☑	364660	5.0000	0.9146
D:\MassHunter\Data\2210811BCAL\2210811B_05.d	Calibration	4	☑	797839	10.0000	0.9142
D:\MassHunter\Data\2210811BCAL\2210811B_06.d	Calibration	5	☑	1575279	20.0000	0.9672
D:\MassHunter\Data\2210811BCAL\2210811B_07.d	Calibration	6	☑	3876923	50.0000	1.0206
D:\MassHunter\Data\2210811BCAL\2210811B_09.d	Calibration	7	☑	16205236	200.0000	1.0091



Extracted ISTD *M2PFTA*

Calibration STD	Cal Type	Level	Enabled	Response	Exp Conc (ng/mL)	RF

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072979	Instrument ID:	QQQ4
Analysis Date:	08/12/2021 00:19	Lab File ID:	2210811B_26.d
Analytical Method:		Analytical Batch:	718586

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	10200	107	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	10000	104	70	130	
NEtFOSAA	ng/L	10000	9410	94	70	130	
NMeFOSAA	ng/L	10000	9460	95	70	130	
Perfluorobutanoic acid	ng/L	10000	9940	99	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8840	100	70	130	
Perfluorodecanoic acid	ng/L	10000	9640	96	70	130	
Perfluorododecanoic acid	ng/L	10000	9870	99	70	130	
Perfluoroheptanoic acid	ng/L	10000	9820	98	70	130	
Perfluorohexanoic acid	ng/L	10000	9760	98	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	8990	98	70	130	
Perfluorononanoic acid	ng/L	10000	9870	99	70	130	
Perfluorooctanoic acid	ng/L	10000	9870	99	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	9210	99	70	130	
Perfluoropentanoic acid	ng/L	10000	9960	100	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9890	99	70	130	
Perfluorotridecanoic acid	ng/L	10000	9870	99	70	130	
Perfluoroundecanoic acid	ng/L	10000	9870	99	70	130	

FORM 7E - ORG

7E

ORGANICS CALIBRATION VERIFICATION

Report No:	221072979	Instrument ID:	QQQ4
Analysis Date:	08/12/2021 02:59	Lab File ID:	2210811B_37.d
Analytical Method:		Analytical Batch:	718586

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
6:2 Fluorotelomersulfonic acid	ng/L	9510	9430	99	70	130	
8:2 Fluorotelomersulfonic acid	ng/L	9600	9390	98	70	130	
NEtFOSAA	ng/L	10000	9430	94	70	130	
NMeFOSAA	ng/L	10000	9800	98	70	130	
Perfluorobutanoic acid	ng/L	10000	9970	100	70	130	
Perfluorobutanesulfonic acid	ng/L	8870	8890	100	70	130	
Perfluorodecanoic acid	ng/L	10000	9780	98	70	130	
Perfluorododecanoic acid	ng/L	10000	9920	99	70	130	
Perfluoroheptanoic acid	ng/L	10000	9890	99	70	130	
Perfluorohexanoic acid	ng/L	10000	9900	99	70	130	
Perfluorohexanesulfonic acid	ng/L	9140	9010	99	70	130	
Perfluorononanoic acid	ng/L	10000	9940	99	70	130	
Perfluorooctanoic acid	ng/L	10000	9830	98	70	130	
Perfluorooctanesulfonic acid	ng/L	9280	9310	100	70	130	
Perfluoropentanoic acid	ng/L	10000	9890	99	70	130	
Perfluorotetradecanoic acid	ng/L	10000	9880	99	70	130	
Perfluorotridecanoic acid	ng/L	10000	10000	100	70	130	
Perfluoroundecanoic acid	ng/L	10000	9750	97	70	130	

FORM 7E - ORG

8I

INTERNAL STANDARD AREA SUMMARY

Report No:	221072979	Standard ID:	1205 (ICAL Midpoint)
Analyst:	RXJ	Instrument ID:	QQQ4
Analysis Date:	08/11/21 19:08	Lab File ID:	2210811B_06.d
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	718586

		M2PFDA		M2PFHxA		M2PFOA		M4PFOS	
		Area		*Area*		*Area*		*Area*	
STANDARD		1106511		753279		925134		171049	
CLIENT SAMPLE ID	*LAB SAMP ID*		#		#		#		#
CS-MW003S-GW	22107297901	1205826		822311		1012175		185573	
CS-MW002D-GW	22107297902	1176586		797711		980299		180215	
MB2225095	2225095	1248175		831165		1016034		189148	
LCS2225096	2225096	1251838		835049		1035275		191035	
LCSD2225097	2225097	1186940		798063		984446		180915	

AREA UPPER LIMIT = +50% of internal standard area

AREA LOWER LIMIT = -50% of internal standard area

Column used to flag values outside QC limits

* Value outside QC limits

FORM 8I - ORG

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	221040641	Method Blank ID:	2166311
Matrix:	Water	Instrument ID:	QQQ2
Sample Amt:	125 mL	Lab File ID:	2210409A_28.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: MRA
Prep Date:		Analysis Date:	04/09/21 Time: 1739
Prep Batch:	707793	Analytical Batch:	708250
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1.	LCS2166312	2166312	2210409A_29.d	04/09/21	1752
2.	LCSD2166313	2166313	2210409A_30.d	04/09/21	1805
3.	CS-DECON-040521	22104064101	2210409A_34.d	04/09/21	1857
4.	LCS2166312RE	2166312RE	2210412B_67.d	04/13/21	0458
5.	LCSD2166313RE	2166313RE	2210412B_68.d	04/13/21	0511
6.	CS-DECON-040521RE	22104064101RE	2210412B_72.d	04/13/21	0604

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221040641	Client Sample ID:	MB2166311
Collect Date:	NA Time: NA	GCAL Sample ID:	2166311
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ2
Sample Amt:	125 mL	Lab File ID:	2210409A_28.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: MRA
Prep Date:		Analysis Date:	04/09/21 Time: 1739
Prep Batch:	707793	Analytical Batch:	708250
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	2.00	U	0.940	2.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	1.45	J	0.900	2.00	4.00
2991-50-6	NEtFOSAA	4.00	U	0.970	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.910	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	2.00	U	0.810	2.00	4.00
335-76-2	Perfluorodecanoic acid	2.00	U	0.860	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.780	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	2.00	U	0.810	2.00	4.00
335-67-1	Perfluorooctanoic acid	2.00	U	0.950	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	2.00	U	0.980	2.00	4.00
72629-94-8	Perfluorotridecanoic acid	1.21	J	0.990	2.00	4.00
2058-94-8	Perfluoroundecanoic acid	1.59	J	0.950	2.00	4.00

FORM I SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221040641

Prep Method: PFAS ID QSM B15 Prep Prep Batch: 707793

Analytical Method: PFAS Isotope Dilution QSM B15 Analytical Batch: 708250

GCAL QC ID: 2166312

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
6:2 Fluorotelomersulfonic acid	ng/L	76.1	0	90.3	119		64 - 140
8:2 Fluorotelomersulfonic acid	ng/L	76.8	0	97.7	127		67 - 138
NEtFOSAA	ng/L	80	0	107	134		61 - 135
NMeFOSAA	ng/L	80	0	101	126		65 - 136
Perfluorobutanesulfonic acid	ng/L	71	0	83.9	118		72 - 130
Perfluorodecanoic acid	ng/L	80	0	105	131	*	71 - 129
Perfluorononanoic acid	ng/L	80	0	108	135	*	69 - 130
Perfluorooctanesulfonic acid	ng/L	74.2	0	96.1	129		65 - 140
Perfluorooctanoic acid	ng/L	80	0	102	128		71 - 133
Perfluorotetradecanoic acid	ng/L	80	0	104	130		71 - 132
Perfluorotridecanoic acid	ng/L	80	0	122	153	*	65 - 144
Perfluoroundecanoic acid	ng/L	80	0	103	128		69 - 133

GCAL QC ID: 2166313

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
6:2 Fluorotelomersulfonic acid	ng/L	76.1	93	122		3		64 - 140	0 - 30
8:2 Fluorotelomersulfonic acid	ng/L	76.8	99.7	130		2		67 - 138	0 - 30
NEtFOSAA	ng/L	80	98	123		9		61 - 135	0 - 30
NMeFOSAA	ng/L	80	106	132		5		65 - 136	0 - 30
Perfluorobutanesulfonic acid	ng/L	71	85.3	120		2		72 - 130	0 - 30
Perfluorodecanoic acid	ng/L	80	95.6	120		9		71 - 129	0 - 30
Perfluorononanoic acid	ng/L	80	115	144	*	6		69 - 130	0 - 30
Perfluorooctanesulfonic acid	ng/L	74.2	94.5	127		2		65 - 140	0 - 30
Perfluorooctanoic acid	ng/L	80	103	129		1		71 - 133	0 - 30
Perfluorotetradecanoic acid	ng/L	80	103	128		.9		71 - 132	0 - 30
Perfluorotridecanoic acid	ng/L	80	119	148	*	3		65 - 144	0 - 30
Perfluoroundecanoic acid	ng/L	80	99.3	124		3		69 - 133	0 - 30

RPD : 0 out of 12 outside limits

Spike Recovery: 5 out of 24 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	221040641	Method Blank ID:	2166311
Matrix:	Water	Instrument ID:	QQQ2
Sample Amt:	125 mL	Lab File ID:	2210412B_66.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: MRA
Prep Date:		Analysis Date:	04/13/21 Time: 0445
Prep Batch:	707793	Analytical Batch:	708255
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1.	LCS2166312	2166312	2210409A_29.d	04/09/21	1752
2.	LCSD2166313	2166313	2210409A_30.d	04/09/21	1805
3.	CS-DECON-040521	22104064101	2210409A_34.d	04/09/21	1857
4.	LCS2166312RE	2166312RE	2210412B_67.d	04/13/21	0458
5.	LCSD2166313RE	2166313RE	2210412B_68.d	04/13/21	0511
6.	CS-DECON-040521RE	22104064101RE	2210412B_72.d	04/13/21	0604

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221040641	Client Sample ID:	MB2166311RE
Collect Date:	NA Time: NA	GCAL Sample ID:	2166311RE
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ2
Sample Amt:	125 mL	Lab File ID:	2210412B_66.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: MRA
Prep Date:		Analysis Date:	04/13/21 Time: 0445
Prep Batch:	707793	Analytical Batch:	708255
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
307-55-1	Perfluorododecanoic acid	2.00	U	0.880	2.00	4.00
375-85-9	Perfluoroheptanoic acid	2.00	U	0.480	2.00	4.00
355-46-4	Perfluorohexanesulfonic acid	2.00	U	0.950	2.00	4.00
307-24-4	Perfluorohexanoic acid	2.00	U	0.990	2.00	4.00

FORM I SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221040641

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 707793

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 708255

GCAL QC ID: 2166312

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	LCS RESULT	LCS % REC	#	QC LIMITS
Perfluorododecanoic acid	ng/L	80	0	91.6	115		72 - 134
Perfluoroheptanoic acid	ng/L	80	0	98.1	123		72 - 130
Perfluorohexanesulfonic acid	ng/L	73.1	0	87.7	120		68 - 131
Perfluorohexanoic acid	ng/L	80	0	89.8	112		72 - 129

GCAL QC ID: 2166313

ANALYTE	UNITS	SPIKE ADDED	LCSD RESULT	LCSD % REC	#	% RPD	#	QC LIMITS REC	QC LIMITS RPD
Perfluorododecanoic acid	ng/L	80	95.4	119		4		72 - 134	0 - 30
Perfluoroheptanoic acid	ng/L	80	96.7	121		1		72 - 130	0 - 30
Perfluorohexanesulfonic acid	ng/L	73.1	91.2	125		4		68 - 131	0 - 30
Perfluorohexanoic acid	ng/L	80	97.1	121		8		72 - 129	0 - 30

RPD : 0 out of 4 outside limits

Spike Recovery: 0 out of 8 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	221040641	Method Blank ID:	2170472
Matrix:	Water	Instrument ID:	QQQ2
Sample Amt:	125 mL	Lab File ID:	2210414A_75.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: MRA
Prep Date:		Analysis Date:	04/15/21 Time: 0418
Prep Batch:	708431	Analytical Batch:	708591
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	GCAL SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1.	LCS2170473	2170473	2210414A_76.d	04/15/21	0431
2.	LCSD2170474	2170474	2210414A_77.d	04/15/21	0444
3.	CS-DECON-040521RE1	22104064101RE1	2210414A_81.d	04/15/21	0536
4.	LCS2170473RE	2170473RE	2210416A_77.d	04/17/21	0517
5.	LCSD2170474RE	2170474RE	2210416A_78.d	04/17/21	0531
6.	LCS2170473RE1	2170473RE1	2210421A_28.d	04/21/21	2026
7.	LCSD2170474RE1	2170474RE1	2210421A_29.d	04/21/21	2043

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221040641	Client Sample ID:	MB2170472
Collect Date:	NA Time: NA	GCAL Sample ID:	2170472
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ2
Sample Amt:	125 mL	Lab File ID:	2210414A_75.d
Injection Vol.:	1.0 (µL)	GC Column:	ACC-C18-30M ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: MRA
Prep Date:		Analysis Date:	04/15/21 Time: 0418
Prep Batch:	708431	Analytical Batch:	708591
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
375-22-4	Perfluorobutanoic acid	0.965	J	0.900	2.00	4.00
2706-90-3	Perfluoropentanoic acid	2.00	U	0.850	2.00	4.00

FORM I SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221040641

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 708431

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 708591

GCAL QC ID: 2170473

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
Perfluorobutanoic acid	ng/L	80	0	82.2	✓ 103		73 - 129
Perfluoropentanoic acid	ng/L	80	0	85.6	107		72 - 129

GCAL QC ID: 2170474

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
Perfluorobutanoic acid	ng/L	80	80.9	✓ 101		✓ 2		73 - 129	0 - 30
Perfluoropentanoic acid	ng/L	80	83.9	105		2		72 - 129	0 - 30

RPD : 0 out of 2 outside limits

Spike Recovery: 0 out of 4 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	221072417	Method Blank ID:	2218045
Matrix:	Water	Instrument ID:	QQQ3
Sample Amt:	125 mL	Lab File ID:	2210728A_5.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	07/27/21	Analysis Date:	07/28/21 Time: 1157
Prep Batch:	717017	Analytical Batch:	717333
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1.	LCS2218046	2218046	2210728A_6.d	07/28/21	1212
2.	LCSD2218047	2218047	2210728A_7.d	07/28/21	1227
3.	CS-MW004S-GW	22107241706	2210728B_12.d	07/28/21	2312
4.	CS-MW004S-GW-MS	22107241707	2210728B_13.d	07/28/21	2326
5.	CS-MW004S-GW-MSD	22107241708	2210728B_14.d	07/28/21	2341

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072417	Client Sample ID:	MB2218045
Collect Date:	NA Time: NA	GCAL Sample ID:	2218045
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ3
Sample Amt:	125 mL	Lab File ID:	2210728A_5.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	07/27/21	Analysis Date:	07/28/21 Time: 1157
Prep Batch:	717017	Analytical Batch:	717333
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	3.00	U	1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	2.00	U	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	3.50	U	1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	3.00	U	1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	3.00	U	1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	2.00	U	0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	2.00	U	0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	2.00	U	0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	2.00	U	0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

FORM I SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072417

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 717017

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 717333

GCAL QC ID: 2218046

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
6:2 Fluorotelomersulfonic acid	ng/L	76.1	0	74.6	98		64 - 140
8:2 Fluorotelomersulfonic acid	ng/L	76.8	0	77.7	101		67 - 138
NEtFOSAA	ng/L	80	0	79.5	99		61 - 135
NMeFOSAA	ng/L	80	0	78.5	98		65 - 136
Perfluorobutanesulfonic acid	ng/L	71	0	69	97		72 - 130
Perfluorobutanoic acid	ng/L	80	0	79.3	99		73 - 129
Perfluorodecanoic acid	ng/L	80	0	80.3	100		71 - 129
Perfluorododecanoic acid	ng/L	80	0	81.1	101		72 - 134
Perfluoroheptanoic acid	ng/L	80	0	79.5	99		72 - 130
Perfluorohexanesulfonic acid	ng/L	73.1	0	71.3	98		68 - 131
Perfluorohexanoic acid	ng/L	80	0	78	97		72 - 129
Perfluorononanoic acid	ng/L	80	0	80.5	101		69 - 130
Perfluorooctanesulfonic acid	ng/L	74.2	0	72.1	97		65 - 140
Perfluorooctanoic acid	ng/L	80	0	77.7	97		71 - 133
Perfluoropentanoic acid	ng/L	80	0	80.7	101		72 - 129
Perfluorotetradecanoic acid	ng/L	80	0	80.4	100		71 - 132
Perfluorotridecanoic acid	ng/L	80	0	79.1	99		65 - 144
Perfluoroundecanoic acid	ng/L	80	0	80.1	100		69 - 133

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072417

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 717017

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 717333

GCAL QC ID: 2218047

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
6:2 Fluorotelomersulfonic acid	ng/L	76.1	82.2	108		10		64 - 140	0 - 30
8:2 Fluorotelomersulfonic acid	ng/L	76.8	88.3	115		13		67 - 138	0 - 30
NEtFOSAA	ng/L	80	86.3	108		8		61 - 135	0 - 30
NMeFOSAA	ng/L	80	89.7	112		13		65 - 136	0 - 30
Perfluorobutanesulfonic acid	ng/L	71	75.4	106		9		72 - 130	0 - 30
Perfluorobutanoic acid	ng/L	80	89.1	111		12		73 - 129	0 - 30
Perfluorodecanoic acid	ng/L	80	88.8	111		10		71 - 129	0 - 30
Perfluorododecanoic acid	ng/L	80	89.6	112		10		72 - 134	0 - 30
Perfluoroheptanoic acid	ng/L	80	88.5	111		11		72 - 130	0 - 30
Perfluorohexanesulfonic acid	ng/L	73.1	78.1	107		9		68 - 131	0 - 30
Perfluorohexanoic acid	ng/L	80	87.6	109		12		72 - 129	0 - 30
Perfluorononanoic acid	ng/L	80	87.8	110		9		69 - 130	0 - 30
Perfluorooctanesulfonic acid	ng/L	74.2	80.3	108		11		65 - 140	0 - 30
Perfluorooctanoic acid	ng/L	80	87.1	109		11		71 - 133	0 - 30
Perfluoropentanoic acid	ng/L	80	89	111		10		72 - 129	0 - 30
Perfluorotetradecanoic acid	ng/L	80	90.4	113		12		71 - 132	0 - 30
Perfluorotridecanoic acid	ng/L	80	87.4	109		10		65 - 144	0 - 30
Perfluoroundecanoic acid	ng/L	80	88.7	111		10		69 - 133	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3C

WATER SEMIVOLATILE MS/MSD RECOVERY

Report No:	221072417	Parent Sample ID:	CS-MW004S-GW
Prep Method:	PFAS ID QSM B15 Prep	Prep Batch:	717017
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	717350

GCAL QC ID: 22107241707

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*MS RESULT*	*MS % REC*	*#*	*QC LIMITS*
6:2 Fluorotelomersulfonic acid	ng/L	76.1	224	203	-27	*	64 - 140
8:2 Fluorotelomersulfonic acid	ng/L	76.8	.171	85.5	111		67 - 138
NEtFOSAA	ng/L	80	.111	81.9	102		61 - 135
NMeFOSAA	ng/L	80	.18	86.4	108		65 - 136
Perfluorobutanesulfonic acid	ng/L	71	.509	73.7	103		72 - 130
Perfluorobutanoic acid	ng/L	80	4.57	86	102		73 - 129
Perfluorodecanoic acid	ng/L	80	.162	83.9	105		71 - 129
Perfluorododecanoic acid	ng/L	80	.074	85.3	107		72 - 134
Perfluoroheptanoic acid	ng/L	80	.733	82.3	102		72 - 130
Perfluorohexanesulfonic acid	ng/L	73.1	1.14	75.9	102		68 - 131
Perfluorohexanoic acid	ng/L	80	2.2	85.5	104		72 - 129
Perfluorononanoic acid	ng/L	80	.464	84.5	105		69 - 130
Perfluorooctanesulfonic acid	ng/L	74.2	1.04	77.1	102		65 - 140
Perfluorooctanoic acid	ng/L	80	1.22	84.9	105		71 - 133
Perfluoropentanoic acid	ng/L	80	1.46	84.5	104		72 - 129
Perfluorotetradecanoic acid	ng/L	80	.044	84.9	106		71 - 132
Perfluorotridecanoic acid	ng/L	80	.042	85.2	106		65 - 144
Perfluoroundecanoic acid	ng/L	80	.182	83	103		69 - 133

RPD : 0 out of 18 outside limits

Spike Recovery: 2 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3C

WATER SEMIVOLATILE MS/MSD RECOVERY

Report No:	221072417	Parent Sample ID:	CS-MW004S-GW
Prep Method:	PFAS ID QSM B15 Prep	Prep Batch:	717017
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	717350

GCAL QC ID: 22107241708

ANALYTE	*UNITS*	*SPIKE ADDED*	*MSD RESULT*	*MSD % REC*	*#*	*% RPD*	*#*	*QC LIMITS REC*	*QC LIMITS RPD*
6:2 Fluorotelomersulfonic acid	ng/L	76.1	211	-17	*	4		64 - 140	0 - 30
8:2 Fluorotelomersulfonic acid	ng/L	76.8	80.7	105		6		67 - 138	0 - 30
NEtFOSAA	ng/L	80	81.6	102		.4		61 - 135	0 - 30
NMeFOSAA	ng/L	80	86.6	108		.3		65 - 136	0 - 30
Perfluorobutanesulfonic acid	ng/L	71	73.2	102		.6		72 - 130	0 - 30
Perfluorobutanoic acid	ng/L	80	85.1	101		1		73 - 129	0 - 30
Perfluorodecanoic acid	ng/L	80	82	102		2		71 - 129	0 - 30
Perfluorododecanoic acid	ng/L	80	83	104		3		72 - 134	0 - 30
Perfluoroheptanoic acid	ng/L	80	82.2	102		.1		72 - 130	0 - 30
Perfluorohexanesulfonic acid	ng/L	73.1	76	102		.07		68 - 131	0 - 30
Perfluorohexanoic acid	ng/L	80	82.7	101		3		72 - 129	0 - 30
Perfluorononanoic acid	ng/L	80	82.5	103		2		69 - 130	0 - 30
Perfluorooctanesulfonic acid	ng/L	74.2	74.6	99		3		65 - 140	0 - 30
Perfluorooctanoic acid	ng/L	80	81.9	101		4		71 - 133	0 - 30
Perfluoropentanoic acid	ng/L	80	82.5	101		2		72 - 129	0 - 30
Perfluorotetradecanoic acid	ng/L	80	82	102		3		71 - 132	0 - 30
Perfluorotridecanoic acid	ng/L	80	82.4	103		3		65 - 144	0 - 30
Perfluoroundecanoic acid	ng/L	80	83.6	104		.8		69 - 133	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 2 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	221072417	Method Blank ID:	2219180
Matrix:	Solid	Instrument ID:	QQQ3
Sample Amt:	5 g	Lab File ID:	2210731A_5.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	07/29/21	Analysis Date:	07/31/21 Time: 1158
Prep Batch:	717227	Analytical Batch:	717622
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	GCAL SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1.	LCS2219181	2219181	2210731A_6.d	07/31/21	1213
2.	LCSD2219182	2219182	2210731A_7.d	07/31/21	1228
3.	CS-MW004S-SB-07-09	22107241701	2210731A_11.d	07/31/21	1326
4.	CS-MW001S-SB-00-02	22107241702	2210731A_12.d	07/31/21	1341
5.	CS-MW001S-SB-00-02-D	22107241703	2210731A_13.d	07/31/21	1355
6.	CS-MW001D-SB-08-10	22107241704	2210731A_14.d	07/31/21	1410
7.	CS-MW004S-SB-00-02	22107241705	2210731A_15.d	07/31/21	1425

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072417	Client Sample ID:	MB2219180
Collect Date:	NA Time: NA	GCAL Sample ID:	2219180
Matrix:	Solid % Moisture: NA	Instrument ID:	QQQ3
Sample Amt:	5 g	Lab File ID:	2210731A_5.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	07/29/21	Analysis Date:	07/31/21 Time: 1158
Prep Batch:	717227	Analytical Batch:	717622
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.200	U	0.060	0.200	1.00
39108-34-4	8:2 Fluorotelomersulfonic acid	0.100	U	0.030	0.100	1.00
2991-50-6	NEtFOSAA	0.100	U	0.030	0.100	1.00
2355-31-9	NMeFOSAA	0.050	U	0.020	0.050	1.00
375-73-5	Perfluorobutanesulfonic acid	0.050	U	0.020	0.050	1.00
375-22-4	Perfluorobutanoic acid	0.100	U	0.040	0.100	1.00
335-76-2	Perfluorodecanoic acid	0.100	U	0.040	0.100	1.00
307-55-1	Perfluorododecanoic acid	0.050	U	0.020	0.050	1.00
375-85-9	Perfluoroheptanoic acid	0.050	U	0.020	0.050	1.00
355-46-4	Perfluorohexanesulfonic acid	0.100	U	0.030	0.100	1.00
307-24-4	Perfluorohexanoic acid	0.050	U	0.020	0.050	1.00
375-95-1	Perfluorononanoic acid	0.050	U	0.020	0.050	1.00
1763-23-1	Perfluorooctanesulfonic acid	0.200	U	0.050	0.200	1.00
335-67-1	Perfluorooctanoic acid	0.200	U	0.080	0.200	1.00
2706-90-3	Perfluoropentanoic acid	0.050	U	0.020	0.050	1.00
376-06-7	Perfluorotetradecanoic acid	0.050	U	0.020	0.050	1.00
72629-94-8	Perfluorotridecanoic acid	0.100	U	0.030	0.100	1.00
2058-94-8	Perfluoroundecanoic acid	0.050	U	0.020	0.050	1.00

FORM I SV-1

3D

SOIL SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072417

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 717227

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 717622

GCAL QC ID: 2219181

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
6:2 Fluorotelomersulfonic acid	ug/kg	1.9	0	1.93	101		64 - 140
8:2 Fluorotelomersulfonic acid	ug/kg	1.92	0	2.21	115		65 - 137
NEtFOSAA	ug/kg	2	0	2.05	103		61 - 139
NMeFOSAA	ug/kg	2	0	2.13	107		63 - 144
Perfluorobutanesulfonic acid	ug/kg	1.77	0	1.85	104		72 - 128
Perfluorobutanoic acid	ug/kg	2	0	2.13	107		71 - 135
Perfluorodecanoic acid	ug/kg	2	0	2.15	107		69 - 133
Perfluorododecanoic acid	ug/kg	2	0	2.14	107		69 - 135
Perfluoroheptanoic acid	ug/kg	2	0	2.11	105		71 - 131
Perfluorohexanesulfonic acid	ug/kg	1.83	0	1.93	105		67 - 130
Perfluorohexanoic acid	ug/kg	2	0	2.1	105		70 - 132
Perfluorononanoic acid	ug/kg	2	0	2.13	107		72 - 129
Perfluorooctanesulfonic acid	ug/kg	1.86	0	1.92	104		68 - 136
Perfluorooctanoic acid	ug/kg	2	0	2.09	105		69 - 133
Perfluoropentanoic acid	ug/kg	2	0	2.13	106		69 - 132
Perfluorotetradecanoic acid	ug/kg	2	0	2.11	106		69 - 133
Perfluorotridecanoic acid	ug/kg	2	0	2.14	107		66 - 139
Perfluoroundecanoic acid	ug/kg	2	0	2.19	109		64 - 136

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

3D

SOIL SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072417

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 717227

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 717622

GCAL QC ID: 2219182

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*RPD*
6:2 Fluorotelomersulfonic acid	ug/kg	1.9	2.04	107		5		64 - 140	0 - 30
8:2 Fluorotelomersulfonic acid	ug/kg	1.92	2.11	110		5		65 - 137	0 - 30
NEtFOSAA	ug/kg	2	2.04	102		.7		61 - 139	0 - 30
NMeFOSAA	ug/kg	2	2.18	109		2		63 - 144	0 - 30
Perfluorobutanesulfonic acid	ug/kg	1.77	1.84	104		.8		72 - 128	0 - 30
Perfluorobutanoic acid	ug/kg	2	2.19	109		3		71 - 135	0 - 30
Perfluorodecanoic acid	ug/kg	2	2.17	108		.8		69 - 133	0 - 30
Perfluorododecanoic acid	ug/kg	2	2.16	108		.8		69 - 135	0 - 30
Perfluoroheptanoic acid	ug/kg	2	2.1	105		.06		71 - 131	0 - 30
Perfluorohexanesulfonic acid	ug/kg	1.83	1.96	107		2		67 - 130	0 - 30
Perfluorohexanoic acid	ug/kg	2	2.15	107		2		70 - 132	0 - 30
Perfluorononanoic acid	ug/kg	2	2.17	108		2		72 - 129	0 - 30
Perfluorooctanesulfonic acid	ug/kg	1.86	1.93	104		.5		68 - 136	0 - 30
Perfluorooctanoic acid	ug/kg	2	2.11	106		1		69 - 133	0 - 30
Perfluoropentanoic acid	ug/kg	2	2.14	107		.8		69 - 132	0 - 30
Perfluorotetradecanoic acid	ug/kg	2	2.11	105		.2		69 - 133	0 - 30
Perfluorotridecanoic acid	ug/kg	2	2.17	109		2		66 - 139	0 - 30
Perfluoroundecanoic acid	ug/kg	2	2.15	108		2		64 - 136	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	221072417	Method Blank ID:	2219153
Matrix:	Water	Instrument ID:	QQQ3
Sample Amt:	125 mL	Lab File ID:	2210729A_4.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: RXJ
Prep Date:	07/28/21	Analysis Date:	07/29/21 Time: 1041
Prep Batch:	717224	Analytical Batch:	717435
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1.	LCS2219154	2219154	2210729A_5.d	07/29/21	1056
2.	LCSD2219155	2219155	2210729A_6.d	07/29/21	1111
3.	CS-ERB-01	22107241709	2210729B_5.d	07/29/21	1513

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072417	Client Sample ID:	MB2219153
Collect Date:	NA Time: NA	GCAL Sample ID:	2219153
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ3
Sample Amt:	125 mL	Lab File ID:	2210729A_4.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: RXJ
Prep Date:	07/28/21	Analysis Date:	07/29/21 Time: 1041
Prep Batch:	717224	Analytical Batch:	717435
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	3.00	U	1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	2.00	U	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	3.50	U	1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	3.00	U	1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	3.00	U	1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	2.00	U	0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	2.00	U	0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	2.00	U	0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	2.00	U	0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

FORM I SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072417

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 717224

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 717435

GCAL QC ID: 2219154

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
6:2 Fluorotelomersulfonic acid	ng/L	76.1	0	85.4	112		64 - 140
8:2 Fluorotelomersulfonic acid	ng/L	76.8	0	87.7	114		67 - 138
NEtFOSAA	ng/L	80	0	84.6	106		61 - 135
NMeFOSAA	ng/L	80	0	89.2	112		65 - 136
Perfluorobutanesulfonic acid	ng/L	71	0	74	104		72 - 130
Perfluorobutanoic acid	ng/L	80	0	87.4	109		73 - 129
Perfluorodecanoic acid	ng/L	80	0	87.7	110		71 - 129
Perfluorododecanoic acid	ng/L	80	0	91.8	115		72 - 134
Perfluoroheptanoic acid	ng/L	80	0	83.6	105		72 - 130
Perfluorohexanesulfonic acid	ng/L	73.1	0	79.3	108		68 - 131
Perfluorohexanoic acid	ng/L	80	0	84.2	105		72 - 129
Perfluorononanoic acid	ng/L	80	0	86.8	108		69 - 130
Perfluorooctanesulfonic acid	ng/L	74.2	0	79.2	107		65 - 140
Perfluorooctanoic acid	ng/L	80	0	84.6	106		71 - 133
Perfluoropentanoic acid	ng/L	80	0	87.3	109		72 - 129
Perfluorotetradecanoic acid	ng/L	80	0	90.9	114		71 - 132
Perfluorotridecanoic acid	ng/L	80	0	91	114		65 - 144
Perfluoroundecanoic acid	ng/L	80	0	90.7	113		69 - 133

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072417

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 717224

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 717435

GCAL QC ID: 2219155

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
6:2 Fluorotelomersulfonic acid	ng/L	76.1	81.2	107		5		64 - 140	0 - 30
8:2 Fluorotelomersulfonic acid	ng/L	76.8	82.9	108		6		67 - 138	0 - 30
NEtFOSAA	ng/L	80	79.8	100		6		61 - 135	0 - 30
NMeFOSAA	ng/L	80	88.8	111		5		65 - 136	0 - 30
Perfluorobutanesulfonic acid	ng/L	71	73.1	103		1		72 - 130	0 - 30
Perfluorobutanoic acid	ng/L	80	84.4	106		3		73 - 129	0 - 30
Perfluorodecanoic acid	ng/L	80	84.5	106		4		71 - 129	0 - 30
Perfluorododecanoic acid	ng/L	80	83.9	105		9		72 - 134	0 - 30
Perfluoroheptanoic acid	ng/L	80	81.4	102		3		72 - 130	0 - 30
Perfluorohexanesulfonic acid	ng/L	73.1	75.6	103		5		68 - 131	0 - 30
Perfluorohexanoic acid	ng/L	80	82.8	103		2		72 - 129	0 - 30
Perfluorononanoic acid	ng/L	80	82.6	103		5		69 - 130	0 - 30
Perfluorooctanesulfonic acid	ng/L	74.2	76	102		4		65 - 140	0 - 30
Perfluorooctanoic acid	ng/L	80	82.3	103		3		71 - 133	0 - 30
Perfluoropentanoic acid	ng/L	80	84	105		4		72 - 129	0 - 30
Perfluorotetradecanoic acid	ng/L	80	88.3	110		3		71 - 132	0 - 30
Perfluorotridecanoic acid	ng/L	80	86.3	108		5		65 - 144	0 - 30
Perfluoroundecanoic acid	ng/L	80	83.1	104		9		69 - 133	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	221072807	Method Blank ID:	2220286
Matrix:	Water	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210804A_05.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: RXJ
Prep Date:	07/29/21	Analysis Date:	08/04/21 Time: 1242
Prep Batch:	717433	Analytical Batch:	717959
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1.	LCS2220287	2220287	2210804A_06.d	08/04/21	1256
2.	LCSD2220288	2220288	2210804A_07.d	08/04/21	1311
3.	CS-ERB-03	22107280716	2210804A_09.d	08/04/21	1340
4.	CS-FRB-01	22107280717	2210804A_10.d	08/04/21	1355
5.	CS-MW001S-GW	22107280718	2210804A_11.d	08/04/21	1409
6.	CS-MW001S-GW-D	22107280719	2210804A_12.d	08/04/21	1424
7.	CS-MW001D-GW	22107280720	2210804A_13.d	08/04/21	1438

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	MB2220286
Collect Date:	NA Time: NA	GCAL Sample ID:	2220286
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210804A_05.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: RXJ
Prep Date:	07/29/21	Analysis Date:	08/04/21 Time: 1242
Prep Batch:	717433	Analytical Batch:	717959
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	3.00	U	1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	2.00	U	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	3.50	U	1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	3.00	U	1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	3.00	U	1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	2.00	U	0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	2.00	U	0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	2.00	U	0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	2.00	U	0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

FORM I SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072807

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 717433

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 717959

GCAL QC ID: 2220287

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	*#*	*QC LIMITS*
6:2 Fluorotelomersulfonic acid	ng/L	76.1	0	70.5	93		64 - 140
8:2 Fluorotelomersulfonic acid	ng/L	76.8	0	72	94		67 - 138
NEtFOSAA	ng/L	80	0	68.5	86		61 - 135
NMeFOSAA	ng/L	80	0	77.7	97		65 - 136
Perfluorobutanesulfonic acid	ng/L	71	0	64.8	91		72 - 130
Perfluorobutanoic acid	ng/L	80	0	73.5	92		73 - 129
Perfluorodecanoic acid	ng/L	80	0	72.6	91		71 - 129
Perfluorododecanoic acid	ng/L	80	0	71.8	90		72 - 134
Perfluoroheptanoic acid	ng/L	80	0	71.1	89		72 - 130
Perfluorohexanesulfonic acid	ng/L	73.1	0	66.3	91		68 - 131
Perfluorohexanoic acid	ng/L	80	0	72.4	90		72 - 129
Perfluorononanoic acid	ng/L	80	0	71.9	90		69 - 130
Perfluorooctanesulfonic acid	ng/L	74.2	0	65.9	89		65 - 140
Perfluorooctanoic acid	ng/L	80	0	71.3	89		71 - 133
Perfluoropentanoic acid	ng/L	80	0	72.2	90		72 - 129
Perfluorotetradecanoic acid	ng/L	80	0	71.8	90		71 - 132
Perfluorotridecanoic acid	ng/L	80	0	72.8	91		65 - 144
Perfluoroundecanoic acid	ng/L	80	0	71.8	90		69 - 133

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072807

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 717433

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 717959

GCAL QC ID: 2220288

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
6:2 Fluorotelomersulfonic acid	ng/L	76.1	75.7	100		7		64 - 140	0 - 30
8:2 Fluorotelomersulfonic acid	ng/L	76.8	75.5	98		5		67 - 138	0 - 30
NEtFOSAA	ng/L	80	72.2	90		5		61 - 135	0 - 30
NMeFOSAA	ng/L	80	77.4	97		.4		65 - 136	0 - 30
Perfluorobutanesulfonic acid	ng/L	71	67.4	95		4		72 - 130	0 - 30
Perfluorobutanoic acid	ng/L	80	75.3	94		2		73 - 129	0 - 30
Perfluorodecanoic acid	ng/L	80	73	91		.6		71 - 129	0 - 30
Perfluorododecanoic acid	ng/L	80	74.8	94		4		72 - 134	0 - 30
Perfluoroheptanoic acid	ng/L	80	72.6	91		2		72 - 130	0 - 30
Perfluorohexanesulfonic acid	ng/L	73.1	68.2	93		3		68 - 131	0 - 30
Perfluorohexanoic acid	ng/L	80	75	94		4		72 - 129	0 - 30
Perfluorononanoic acid	ng/L	80	73	91		2		69 - 130	0 - 30
Perfluorooctanesulfonic acid	ng/L	74.2	67.6	91		3		65 - 140	0 - 30
Perfluorooctanoic acid	ng/L	80	73	91		2		71 - 133	0 - 30
Perfluoropentanoic acid	ng/L	80	74.9	94		4		72 - 129	0 - 30
Perfluorotetradecanoic acid	ng/L	80	73.6	92		2		71 - 132	0 - 30
Perfluorotridecanoic acid	ng/L	80	73.4	92		.8		65 - 144	0 - 30
Perfluoroundecanoic acid	ng/L	80	75.1	94		4		69 - 133	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	221072807	Method Blank ID:	2225095
Matrix:	Water	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210811B_13.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: RXJ
Prep Date:	08/10/21	Analysis Date:	08/11/21 Time: 2109
Prep Batch:	718318	Analytical Batch:	718586
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1.	LCS2225096	2225096	2210811B_14.d	08/11/21	2123
2.	LCSD2225097	2225097	2210811B_15.d	08/11/21	2138
3.	CS-DECON-072521	22107280721	2210811B_16.d	08/11/21	2153

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	MB2225095
Collect Date:	NA Time: NA	GCAL Sample ID:	2225095
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210811B_13.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: RXJ
Prep Date:	08/10/21	Analysis Date:	08/11/21 Time: 2109
Prep Batch:	718318	Analytical Batch:	718586
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	3.00	U	1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	2.00	U	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	3.50	U	1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	3.00	U	1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	3.00	U	1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	2.00	U	0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	2.00	U	0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	2.00	U	0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	2.00	U	0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

FORM I SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072807

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 718318

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 718586

GCAL QC ID: 2225096

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
6:2 Fluorotelomersulfonic acid	ng/L	76.1	0	78.2	103		64 - 140
8:2 Fluorotelomersulfonic acid	ng/L	76.8	0	80.2	104		67 - 138
NEtFOSAA	ng/L	80	0	77.3	97		61 - 135
NMeFOSAA	ng/L	80	0	79.6	99		65 - 136
Perfluorobutanesulfonic acid	ng/L	71	0	72.9	103		72 - 130
Perfluorobutanoic acid	ng/L	80	0	81	101		73 - 129
Perfluorodecanoic acid	ng/L	80	0	78.8	99		71 - 129
Perfluorododecanoic acid	ng/L	80	0	79	99		72 - 134
Perfluoroheptanoic acid	ng/L	80	0	80.1	100		72 - 130
Perfluorohexanesulfonic acid	ng/L	73.1	0	73.9	101		68 - 131
Perfluorohexanoic acid	ng/L	80	0	80.3	100		72 - 129
Perfluorononanoic acid	ng/L	80	0	80.9	101		69 - 130
Perfluorooctanesulfonic acid	ng/L	74.2	0	75.3	101		65 - 140
Perfluorooctanoic acid	ng/L	80	0	80.7	101		71 - 133
Perfluoropentanoic acid	ng/L	80	0	81.2	102		72 - 129
Perfluorotetradecanoic acid	ng/L	80	0	80	100		71 - 132
Perfluorotridecanoic acid	ng/L	80	0	80.5	101		65 - 144
Perfluoroundecanoic acid	ng/L	80	0	80.8	101		69 - 133

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072807

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 718318

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 718586

GCAL QC ID: 2225097

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
6:2 Fluorotelomersulfonic acid	ng/L	76.1	81.2	107		4		64 - 140	0 - 30
8:2 Fluorotelomersulfonic acid	ng/L	76.8	81.7	106		2		67 - 138	0 - 30
NEtFOSAA	ng/L	80	78.5	98		2		61 - 135	0 - 30
NMeFOSAA	ng/L	80	84.1	105		6		65 - 136	0 - 30
Perfluorobutanesulfonic acid	ng/L	71	71.4	101		2		72 - 130	0 - 30
Perfluorobutanoic acid	ng/L	80	81	101		.1		73 - 129	0 - 30
Perfluorodecanoic acid	ng/L	80	82.1	103		4		71 - 129	0 - 30
Perfluorododecanoic acid	ng/L	80	80.7	101		2		72 - 134	0 - 30
Perfluoroheptanoic acid	ng/L	80	81.7	102		2		72 - 130	0 - 30
Perfluorohexanesulfonic acid	ng/L	73.1	74.2	102		.4		68 - 131	0 - 30
Perfluorohexanoic acid	ng/L	80	80.7	101		.6		72 - 129	0 - 30
Perfluorononanoic acid	ng/L	80	82.7	103		2		69 - 130	0 - 30
Perfluorooctanesulfonic acid	ng/L	74.2	75	101		.4		65 - 140	0 - 30
Perfluorooctanoic acid	ng/L	80	82.1	103		2		71 - 133	0 - 30
Perfluoropentanoic acid	ng/L	80	81.4	102		.2		72 - 129	0 - 30
Perfluorotetradecanoic acid	ng/L	80	81.1	101		1		71 - 132	0 - 30
Perfluorotridecanoic acid	ng/L	80	82.8	103		3		65 - 144	0 - 30
Perfluoroundecanoic acid	ng/L	80	81.1	101		.3		69 - 133	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	221072807	Method Blank ID:	2228831
Matrix:	Water	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210818B_28.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/18/21	Analysis Date:	08/19/21 Time: 1304
Prep Batch:	719070	Analytical Batch:	719175
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1.	LCS2228832	2228832	2210818B_29.d	08/19/21	1319
2.	LCSD2228833	2228833	2210818B_30.d	08/19/21	1334
3.	CS-ERB-02	22107280715	2210818B_31.d	08/19/21	1349

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	MB2228831
Collect Date:	NA Time: NA	GCAL Sample ID:	2228831
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210818B_28.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/18/21	Analysis Date:	08/19/21 Time: 1304
Prep Batch:	719070	Analytical Batch:	719175
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	3.00	U	1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	2.00	U	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	3.50	U	1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	3.00	U	1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	3.00	U	1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	2.00	U	0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	2.00	U	0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	2.00	U	0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	2.00	U	0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

FORM I SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072807

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 719070

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 719175

GCAL QC ID: 2228832

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
6:2 Fluorotelomersulfonic acid	ng/L	76.1	0	84.4	111		64 - 140
8:2 Fluorotelomersulfonic acid	ng/L	76.8	0	85.2	111		67 - 138
NEtFOSAA	ng/L	80	0	81	101		61 - 135
NMeFOSAA	ng/L	80	0	89	111		65 - 136
Perfluorobutanesulfonic acid	ng/L	71	0	75.2	106		72 - 130
Perfluorobutanoic acid	ng/L	80	0	85	106		73 - 129
Perfluorodecanoic acid	ng/L	80	0	83.7	105		71 - 129
Perfluorododecanoic acid	ng/L	80	0	86.4	108		72 - 134
Perfluoroheptanoic acid	ng/L	80	0	82.2	103		72 - 130
Perfluorohexanesulfonic acid	ng/L	73.1	0	77.4	106		68 - 131
Perfluorohexanoic acid	ng/L	80	0	84.1	105		72 - 129
Perfluorononanoic acid	ng/L	80	0	83.6	104		69 - 130
Perfluorooctanesulfonic acid	ng/L	74.2	0	78.3	106		65 - 140
Perfluorooctanoic acid	ng/L	80	0	83.8	105		71 - 133
Perfluoropentanoic acid	ng/L	80	0	85.5	107		72 - 129
Perfluorotetradecanoic acid	ng/L	80	0	82.8	103		71 - 132
Perfluorotridecanoic acid	ng/L	80	0	85	106		65 - 144
Perfluoroundecanoic acid	ng/L	80	0	82.3	103		69 - 133

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072807

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 719070

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 719175

GCAL QC ID: 2228833

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
6:2 Fluorotelomersulfonic acid	ng/L	76.1	84.2	✓111		✓.2		64 - 140	0 - 30
8:2 Fluorotelomersulfonic acid	ng/L	76.8	86.3	112		1		67 - 138	0 - 30
NEtFOSAA	ng/L	80	84	105		4		61 - 135	0 - 30
NMeFOSAA	ng/L	80	86.3	108		3		65 - 136	0 - 30
Perfluorobutanesulfonic acid	ng/L	71	75	106		.2		72 - 130	0 - 30
Perfluorobutanoic acid	ng/L	80	86.5	108		2		73 - 129	0 - 30
Perfluorodecanoic acid	ng/L	80	85.4	107		2		71 - 129	0 - 30
Perfluorododecanoic acid	ng/L	80	85.8	107		.7		72 - 134	0 - 30
Perfluoroheptanoic acid	ng/L	80	85.6	107		4		72 - 130	0 - 30
Perfluorohexanesulfonic acid	ng/L	73.1	76.8	105		.9		68 - 131	0 - 30
Perfluorohexanoic acid	ng/L	80	84.4	106		.4		72 - 129	0 - 30
Perfluorononanoic acid	ng/L	80	83.8	105		.4		69 - 130	0 - 30
Perfluorooctanesulfonic acid	ng/L	74.2	78.3	106		.03		65 - 140	0 - 30
Perfluorooctanoic acid	ng/L	80	82.7	103		1		71 - 133	0 - 30
Perfluoropentanoic acid	ng/L	80	86.2	108		.8		72 - 129	0 - 30
Perfluorotetradecanoic acid	ng/L	80	82.8	103		.05		71 - 132	0 - 30
Perfluorotridecanoic acid	ng/L	80	84.3	105		.7		65 - 144	0 - 30
Perfluoroundecanoic acid	ng/L	80	83.5	104		1		69 - 133	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	221072807	Method Blank ID:	2220588
Matrix:	Solid	Instrument ID:	QQQ3
Sample Amt:	5 g	Lab File ID:	2210804D_11.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/02/21	Analysis Date:	08/05/21 Time: 0103
Prep Batch:	717471	Analytical Batch:	718007
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	GCAL SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1.	LCS2220589	2220589	2210804D_12.d	08/05/21	0118
2.	LCSD2220590	2220590	2210804D_13.d	08/05/21	0133
3.	CS-MW002D-SB-39-41	22107280701	2210804D_20.d	08/05/21	0315
4.	AOI2-SB2-00-02	22107280703	2210804D_21.d	08/05/21	0330
5.	AOI2-SB2-02-04	22107280704	2210804D_22.d	08/05/21	0344
6.	AOI2-SB3-00-02	22107280705	2210804D_23.d	08/05/21	0359
7.	AOI2-SB3-02-04DL	22107280706DL	2210804D_24.d	08/05/21	0413
8.	AOI2-SB4-00-02	22107280707	2210804D_25.d	08/05/21	0428
9.	AOI2-SB5-00-02	22107280710	2210804D_27.d	08/05/21	0457
10.	AOI2-SB4-02-04	22107280711	2210804D_28.d	08/05/21	0512
11.	AOI2-SB5-02-04	22107280712	2210804D_29.d	08/05/21	0526
12.	AOI2-SB5-02-04 MS	22107280713	2210804D_30.d	08/05/21	0541
13.	AOI2-SB5-02-04 MSD	22107280714	2210804D_31.d	08/05/21	0556
14.	CS-MW003S-SB-40-42	22107280722	2210804D_32.d	08/05/21	0610
15.	CS-MW003S-SB-40-42-D	22107280723	2210804D_33.d	08/05/21	0625
16.	AOI2-SB3-02-04	22107280706	2210804D_39.d	08/05/21	0753

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	MB2220588
Collect Date:	NA Time: NA	GCAL Sample ID:	2220588
Matrix:	Solid % Moisture: NA	Instrument ID:	QQQ3
Sample Amt:	5 g	Lab File ID:	2210804D_11.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/02/21	Analysis Date:	08/05/21 Time: 0103
Prep Batch:	717471	Analytical Batch:	718007
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: *ug/kg*

CAS	*ANALYTE*	*RESULT*	*Q*	*DL*	*LOD*	*LOQ*
27619-97-2	6:2 Fluorotelomersulfonic acid	0.200	U	0.060	0.200	1.00
39108-34-4	8:2 Fluorotelomersulfonic acid	0.100	U	0.030	0.100	1.00
2991-50-6	NEtFOSAA	0.100	U	0.030	0.100	1.00
2355-31-9	NMeFOSAA	0.050	U	0.020	0.050	1.00
375-73-5	Perfluorobutanesulfonic acid	0.050	U	0.020	0.050	1.00
375-22-4	Perfluorobutanoic acid	0.100	U	0.040	0.100	1.00
335-76-2	Perfluorodecanoic acid	0.100	U	0.040	0.100	1.00
307-55-1	Perfluorododecanoic acid	0.050	U	0.020	0.050	1.00
375-85-9	Perfluoroheptanoic acid	0.050	U	0.020	0.050	1.00
355-46-4	Perfluorohexanesulfonic acid	0.100	U	0.030	0.100	1.00
307-24-4	Perfluorohexanoic acid	0.050	U	0.020	0.050	1.00
375-95-1	Perfluorononanoic acid	0.050	U	0.020	0.050	1.00
1763-23-1	Perfluorooctanesulfonic acid	0.200	U	0.050	0.200	1.00
335-67-1	Perfluorooctanoic acid	0.200	U	0.080	0.200	1.00
2706-90-3	Perfluoropentanoic acid	0.050	U	0.020	0.050	1.00
376-06-7	Perfluorotetradecanoic acid	0.050	U	0.020	0.050	1.00
72629-94-8	Perfluorotridecanoic acid	0.100	U	0.030	0.100	1.00
2058-94-8	Perfluoroundecanoic acid	0.050	U	0.020	0.050	1.00

FORM I SV-1

3D

SOIL SEMIVOLATILE MS/MSD RECOVERY

Report No:	221072807	Parent Sample ID:	AOI2-SB5-02-04
Prep Method:	PFAS ID QSM B15 Prep	Prep Batch:	717471
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	718007

GCAL QC ID: 22107280713

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*MS RESULT*	*MS % REC*	#	*QC LIMITS*
6:2 Fluorotelomersulfonic acid	ug/kg	2.12	.04	1.73	80		64 - 140
8:2 Fluorotelomersulfonic acid	ug/kg	2.15	.426	2.16	81		65 - 137
NEtFOSAA	ug/kg	2.24	.00488	1.77	79		61 - 139
NMeFOSAA	ug/kg	2.24	.0079	1.86	83		63 - 144
Perfluorobutanesulfonic acid	ug/kg	1.98	.00332	1.6	80		72 - 128
Perfluorobutanoic acid	ug/kg	2.24	.00909	1.75	78		71 - 135
Perfluorodecanoic acid	ug/kg	2.24	.00102	1.78	79		69 - 133
Perfluorododecanoic acid	ug/kg	2.24	.00296	1.78	80		69 - 135
Perfluoroheptanoic acid	ug/kg	2.24	.02	1.72	76		71 - 131
Perfluorohexanesulfonic acid	ug/kg	2.03	.213	1.79	77		67 - 130
Perfluorohexanoic acid	ug/kg	2.24	.034	1.72	76		70 - 132
Perfluorononanoic acid	ug/kg	2.24	.015	1.74	78		72 - 129
Perfluorooctanesulfonic acid	ug/kg	2.07	1.42	2.83	68		68 - 136
Perfluorooctanoic acid	ug/kg	2.24	.042	1.77	77		69 - 133
Perfluoropentanoic acid	ug/kg	2.24	.012	1.75	78		69 - 132
Perfluorotetradecanoic acid	ug/kg	2.24	.00407	1.71	76		69 - 133
Perfluorotridecanoic acid	ug/kg	2.24	.00643	1.74	78		66 - 139
Perfluoroundecanoic acid	ug/kg	2.24	.000683	1.79	80		64 - 136

RPD : 0 out of 18 outside limits

Spike Recovery: 1 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

3D

SOIL SEMIVOLATILE MS/MSD RECOVERY

Report No:	221072807	Parent Sample ID:	AOI2-SB5-02-04
Prep Method:	PFAS ID QSM B15 Prep	Prep Batch:	717471
Analytical Method:	PFAS Isotope Dilution QSM B15	Analytical Batch:	718007

GCAL QC ID: 22107280714

ANALYTE	*UNITS*	*SPIKE ADDED*	*MSD RESULT*	*MSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
6:2 Fluorotelomersulfonic acid	ug/kg	2.11	1.93	89		11		64 - 140	0 - 30
8:2 Fluorotelomersulfonic acid	ug/kg	2.13	2.17	82		1		65 - 137	0 - 30
NEtFOSAA	ug/kg	2.22	1.91	86		8		61 - 139	0 - 30
NMeFOSAA	ug/kg	2.22	2.02	90		9		63 - 144	0 - 30
Perfluorobutanesulfonic acid	ug/kg	1.98	1.7	86		6		72 - 128	0 - 30
Perfluorobutanoic acid	ug/kg	2.22	1.9	85		8		71 - 135	0 - 30
Perfluorodecanoic acid	ug/kg	2.22	1.93	87		9		69 - 133	0 - 30
Perfluorododecanoic acid	ug/kg	2.22	1.91	86		7		69 - 135	0 - 30
Perfluoroheptanoic acid	ug/kg	2.22	1.89	84		9		71 - 131	0 - 30
Perfluorohexanesulfonic acid	ug/kg	2.03	1.87	81		4		67 - 130	0 - 30
Perfluorohexanoic acid	ug/kg	2.22	1.92	85		11		70 - 132	0 - 30
Perfluorononanoic acid	ug/kg	2.22	1.9	85		8		72 - 129	0 - 30
Perfluorooctanesulfonic acid	ug/kg	2.07	2.81	67	*	.8		68 - 136	0 - 30
Perfluorooctanoic acid	ug/kg	2.22	1.94	86		10		69 - 133	0 - 30
Perfluoropentanoic acid	ug/kg	2.22	1.87	83		6		69 - 132	0 - 30
Perfluorotetradecanoic acid	ug/kg	2.22	1.86	83		8		69 - 133	0 - 30
Perfluorotridecanoic acid	ug/kg	2.22	1.89	84		8		66 - 139	0 - 30
Perfluoroundecanoic acid	ug/kg	2.22	1.9	85		6		64 - 136	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 1 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

3D

SOIL SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072807

Prep Method: PFAS ID QSM B15 Prep | Prep Batch: 717471

Analytical Method: PFAS Isotope Dilution QSM B15 | Analytical Batch: 718007

GCAL QC ID: 2220589

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
6:2 Fluorotelomersulfonic acid	ug/kg	1.9	0	1.65	87		64 - 140
8:2 Fluorotelomersulfonic acid	ug/kg	1.92	0	1.64	85		65 - 137
NEtFOSAA	ug/kg	2	0	1.7	85		61 - 139
NMeFOSAA	ug/kg	2	0	1.67	83		63 - 144
Perfluorobutanesulfonic acid	ug/kg	1.77	0	1.5	84		72 - 128
Perfluorobutanoic acid	ug/kg	2	0	1.7	85		71 - 135
Perfluorodecanoic acid	ug/kg	2	0	1.68	84		69 - 133
Perfluorododecanoic acid	ug/kg	2	0	1.69	85		69 - 135
Perfluoroheptanoic acid	ug/kg	2	0	1.63	81		71 - 131
Perfluorohexanesulfonic acid	ug/kg	1.83	0	1.52	83		67 - 130
Perfluorohexanoic acid	ug/kg	2	0	1.65	83		70 - 132
Perfluorononanoic acid	ug/kg	2	0	1.66	83		72 - 129
Perfluorooctanesulfonic acid	ug/kg	1.86	0	1.58	85		68 - 136
Perfluorooctanoic acid	ug/kg	2	0	1.64	82		69 - 133
Perfluoropentanoic acid	ug/kg	2	0	1.64	82		69 - 132
Perfluorotetradecanoic acid	ug/kg	2	0	1.67	83		69 - 133
Perfluorotridecanoic acid	ug/kg	2	0	1.69	84		66 - 139
Perfluoroundecanoic acid	ug/kg	2	0	1.64	82		64 - 136

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

3D

SOIL SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072807

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 717471

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 718007

GCAL QC ID: 2220590

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
6:2 Fluorotelomersulfonic acid	ug/kg	1.9	1.66	87		.3		64 - 140	0 - 30
8:2 Fluorotelomersulfonic acid	ug/kg	1.92	1.69	88		3		65 - 137	0 - 30
NEtFOSAA	ug/kg	2	1.64	82		4		61 - 139	0 - 30
NMeFOSAA	ug/kg	2	1.77	88		6		63 - 144	0 - 30
Perfluorobutanesulfonic acid	ug/kg	1.77	1.49	84		.5		72 - 128	0 - 30
Perfluorobutanoic acid	ug/kg	2	1.73	86		2		71 - 135	0 - 30
Perfluorodecanoic acid	ug/kg	2	1.72	86		2		69 - 133	0 - 30
Perfluorododecanoic acid	ug/kg	2	1.71	86		1		69 - 135	0 - 30
Perfluoroheptanoic acid	ug/kg	2	1.67	84		3		71 - 131	0 - 30
Perfluorohexanesulfonic acid	ug/kg	1.83	1.51	83		.3		67 - 130	0 - 30
Perfluorohexanoic acid	ug/kg	2	1.67	84		1		70 - 132	0 - 30
Perfluorononanoic acid	ug/kg	2	1.68	84		2		72 - 129	0 - 30
Perfluorooctanesulfonic acid	ug/kg	1.86	1.51	81		5		68 - 136	0 - 30
Perfluorooctanoic acid	ug/kg	2	1.69	85		3		69 - 133	0 - 30
Perfluoropentanoic acid	ug/kg	2	1.69	85		3		69 - 132	0 - 30
Perfluorotetradecanoic acid	ug/kg	2	1.68	84		.8		69 - 133	0 - 30
Perfluorotridecanoic acid	ug/kg	2	1.72	86		2		66 - 139	0 - 30
Perfluoroundecanoic acid	ug/kg	2	1.69	84		3		64 - 136	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	221072807	Method Blank ID:	2223697
Matrix:	Solid	Instrument ID:	QQQ3
Sample Amt:	5 g	Lab File ID:	2210810B_23.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/06/21	Analysis Date:	08/11/21 Time: 0705
Prep Batch:	718109	Analytical Batch:	718449
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1.	CS-ST-045-072621	22107280724	2210809C_6.d	08/10/21	0738
2.	LCS2223698	2223698	2210810B_24.d	08/11/21	0720
3.	LCSD2223699	2223699	2210810B_25.d	08/11/21	0734

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072807	Client Sample ID:	MB2223697
Collect Date:	NA Time: NA	GCAL Sample ID:	2223697
Matrix:	Solid % Moisture: NA	Instrument ID:	QQQ3
Sample Amt:	5 g	Lab File ID:	2210810B_23.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: ADA
Prep Date:	08/06/21	Analysis Date:	08/11/21 Time: 0705
Prep Batch:	718109	Analytical Batch:	718449
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ug/kg

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	0.200	U	0.060	0.200	1.00
39108-34-4	8:2 Fluorotelomersulfonic acid	0.100	U	0.030	0.100	1.00
2991-50-6	NEtFOSAA	0.100	U	0.030	0.100	1.00
2355-31-9	NMeFOSAA	0.050	U	0.020	0.050	1.00
375-73-5	Perfluorobutanesulfonic acid	0.050	U	0.020	0.050	1.00
375-22-4	Perfluorobutanoic acid	0.100	U	0.040	0.100	1.00
335-76-2	Perfluorodecanoic acid	0.100	U	0.040	0.100	1.00
307-55-1	Perfluorododecanoic acid	0.050	U	0.020	0.050	1.00
375-85-9	Perfluoroheptanoic acid	0.050	U	0.020	0.050	1.00
355-46-4	Perfluorohexanesulfonic acid	0.100	U	0.030	0.100	1.00
307-24-4	Perfluorohexanoic acid	0.050	U	0.020	0.050	1.00
375-95-1	Perfluorononanoic acid	0.050	U	0.020	0.050	1.00
1763-23-1	Perfluorooctanesulfonic acid	0.200	U	0.050	0.200	1.00
335-67-1	Perfluorooctanoic acid	0.200	U	0.080	0.200	1.00
2706-90-3	Perfluoropentanoic acid	0.050	U	0.020	0.050	1.00
376-06-7	Perfluorotetradecanoic acid	0.050	U	0.020	0.050	1.00
72629-94-8	Perfluorotridecanoic acid	0.100	U	0.030	0.100	1.00
2058-94-8	Perfluoroundecanoic acid	0.050	U	0.020	0.050	1.00

FORM I SV-1

3D

SOIL SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072807

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 718109

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 718449

GCAL QC ID: 2223698

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	#	*QC LIMITS*
6:2 Fluorotelomersulfonic acid	ug/kg	1.9	0	1.53	80		64 - 140
8:2 Fluorotelomersulfonic acid	ug/kg	1.92	0	1.56	81		65 - 137
NEtFOSAA	ug/kg	2	0	1.47	73		61 - 139
NMeFOSAA	ug/kg	2	0	1.51	76		63 - 144
Perfluorobutanesulfonic acid	ug/kg	1.77	0	1.36	77		72 - 128
Perfluorobutanoic acid	ug/kg	2	0	1.61	81		71 - 135
Perfluorodecanoic acid	ug/kg	2	0	1.56	78		69 - 133
Perfluorododecanoic acid	ug/kg	2	0	1.56	78		69 - 135
Perfluoroheptanoic acid	ug/kg	2	0	1.55	77		71 - 131
Perfluorohexanesulfonic acid	ug/kg	1.83	0	1.4	77		67 - 130
Perfluorohexanoic acid	ug/kg	2	0	1.51	75		70 - 132
Perfluorononanoic acid	ug/kg	2	0	1.55	78		72 - 129
Perfluorooctanesulfonic acid	ug/kg	1.86	0	1.45	78		68 - 136
Perfluorooctanoic acid	ug/kg	2	0	1.54	77		69 - 133
Perfluoropentanoic acid	ug/kg	2	0	1.57	79		69 - 132
Perfluorotetradecanoic acid	ug/kg	2	0	1.6	80		69 - 133
Perfluorotridecanoic acid	ug/kg	2	0	1.58	79		66 - 139
Perfluoroundecanoic acid	ug/kg	2	0	1.56	78		64 - 136

RPD : 12 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

3D

SOIL SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072807

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 718109

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 718449

GCAL QC ID: 2223699

ANALYTE	UNITS	SPIKE ADDED	LCSD RESULT	LCSD % REC	#	% RPD	#	QC LIMITS REC	QC LIMITS RPD
6:2 Fluorotelomersulfonic acid	ug/kg	1.9	2.02	106		28		64 - 140	0 - 30
8:2 Fluorotelomersulfonic acid	ug/kg	1.92	2.22	116		35	*	65 - 137	0 - 30
NEtFOSAA	ug/kg	2	2.01	101		31	*	61 - 139	0 - 30
NMeFOSAA	ug/kg	2	2.17	108		35	*	63 - 144	0 - 30
Perfluorobutanesulfonic acid	ug/kg	1.77	1.88	106		32	*	72 - 128	0 - 30
Perfluorobutanoic acid	ug/kg	2	2.19	109		30		71 - 135	0 - 30
Perfluorodecanoic acid	ug/kg	2	2.11	106		30		69 - 133	0 - 30
Perfluorododecanoic acid	ug/kg	2	2.18	109		33	*	69 - 135	0 - 30
Perfluoroheptanoic acid	ug/kg	2	2.16	108		33	*	71 - 131	0 - 30
Perfluorohexanesulfonic acid	ug/kg	1.83	1.91	105		31	*	67 - 130	0 - 30
Perfluorohexanoic acid	ug/kg	2	2.1	105		33	*	70 - 132	0 - 30
Perfluorononanoic acid	ug/kg	2	2.13	107		31	*	72 - 129	0 - 30
Perfluorooctanesulfonic acid	ug/kg	1.86	1.93	104		28		68 - 136	0 - 30
Perfluorooctanoic acid	ug/kg	2	2.09	105		30		69 - 133	0 - 30
Perfluoropentanoic acid	ug/kg	2	2.15	107		31	*	69 - 132	0 - 30
Perfluorotetradecanoic acid	ug/kg	2	2.12	106		28		69 - 133	0 - 30
Perfluorotridecanoic acid	ug/kg	2	2.24	112		34	*	66 - 139	0 - 30
Perfluoroundecanoic acid	ug/kg	2	2.17	109		33	*	64 - 136	0 - 30

RPD : 12 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-2

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Report No:	221072979	Method Blank ID:	2225095
Matrix:	Water	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210811B_13.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: RXJ
Prep Date:	08/10/21	Analysis Date:	08/11/21 Time: 2109
Prep Batch:	718318	Analytical Batch:	718586
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	CLIENT SAMPLE ID	*GCAL SAMPLE ID*	*LAB FILE ID*	*DATE ANALYZED*	*TIME ANALYZED*
1.	LCS2225096	2225096	2210811B_14.d	08/11/21	2123
2.	LCSD2225097	2225097	2210811B_15.d	08/11/21	2138
3.	CS-MW003S-GW	22107297901	2210811B_17.d	08/11/21	2207
4.	CS-MW002D-GW	22107297902	2210811B_18.d	08/11/21	2222

FORM IV SV

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Report No:	221072979	Client Sample ID:	MB2225095
Collect Date:	NA Time: NA	GCAL Sample ID:	2225095
Matrix:	Water % Moisture: NA	Instrument ID:	QQQ4
Sample Amt:	125 mL	Lab File ID:	2210811B_13.d
Injection Vol.:	1.0 (µL)	GC Column:	ECLIPSE+C18 ID 2.1 (mm)
Prep Final Vol.:	1000 (µL)	Dilution Factor:	1 Analyst: RXJ
Prep Date:	08/10/21	Analysis Date:	08/11/21 Time: 2109
Prep Batch:	718318	Analytical Batch:	718586
Prep Method:	PFAS ID QSM B15 Prep	Analytical Method:	PFAS Isotope Dilution QSM B15

CONCENTRATION UNITS: ng/L

CAS	ANALYTE	RESULT	Q	DL	LOD	LOQ
27619-97-2	6:2 Fluorotelomersulfonic acid	3.00	U	1.50	3.00	4.00
39108-34-4	8:2 Fluorotelomersulfonic acid	3.00	U	1.06	3.00	4.00
2991-50-6	NEtFOSAA	4.00	U	1.58	4.00	8.00
2355-31-9	NMeFOSAA	4.00	U	0.900	4.00	8.00
375-73-5	Perfluorobutanesulfonic acid	2.00	U	0.620	2.00	4.00
375-22-4	Perfluorobutanoic acid	3.50	U	1.52	3.50	4.00
335-76-2	Perfluorodecanoic acid	3.00	U	1.44	3.00	4.00
307-55-1	Perfluorododecanoic acid	3.00	U	1.30	3.00	4.00
375-85-9	Perfluoroheptanoic acid	3.00	U	1.16	3.00	4.00
355-46-4	Perfluorohexanesulfonic acid	3.00	U	1.24	3.00	4.00
307-24-4	Perfluorohexanoic acid	2.00	U	0.940	2.00	4.00
375-95-1	Perfluorononanoic acid	2.00	U	0.980	2.00	4.00
1763-23-1	Perfluorooctanesulfonic acid	2.00	U	0.760	2.00	4.00
335-67-1	Perfluorooctanoic acid	2.00	U	0.840	2.00	4.00
2706-90-3	Perfluoropentanoic acid	2.00	U	0.880	2.00	4.00
376-06-7	Perfluorotetradecanoic acid	3.00	U	1.14	3.00	4.00
72629-94-8	Perfluorotridecanoic acid	3.00	U	1.23	3.00	4.00
2058-94-8	Perfluoroundecanoic acid	3.00	U	1.24	3.00	4.00

FORM I SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072979

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 718318

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 718586

GCAL QC ID: 2225096

ANALYTE	*UNITS*	*SPIKE ADDED*	*SAMPLE RESULT*	*LCS RESULT*	*LCS % REC*	*#*	*QC LIMITS*
6:2 Fluorotelomersulfonic acid	ng/L	76.1	0	78.2	103		64 - 140
8:2 Fluorotelomersulfonic acid	ng/L	76.8	0	80.2	104		67 - 138
NEtFOSAA	ng/L	80	0	77.3	97		61 - 135
NMeFOSAA	ng/L	80	0	79.6	99		65 - 136
Perfluorobutanesulfonic acid	ng/L	71	0	72.9	103		72 - 130
Perfluorobutanoic acid	ng/L	80	0	81	101		73 - 129
Perfluorodecanoic acid	ng/L	80	0	78.8	99		71 - 129
Perfluorododecanoic acid	ng/L	80	0	79	99		72 - 134
Perfluoroheptanoic acid	ng/L	80	0	80.1	100		72 - 130
Perfluorohexanesulfonic acid	ng/L	73.1	0	73.9	101		68 - 131
Perfluorohexanoic acid	ng/L	80	0	80.3	100		72 - 129
Perfluorononanoic acid	ng/L	80	0	80.9	101		69 - 130
Perfluorooctanesulfonic acid	ng/L	74.2	0	75.3	101		65 - 140
Perfluorooctanoic acid	ng/L	80	0	80.7	101		71 - 133
Perfluoropentanoic acid	ng/L	80	0	81.2	102		72 - 129
Perfluorotetradecanoic acid	ng/L	80	0	80	100		71 - 132
Perfluorotridecanoic acid	ng/L	80	0	80.5	101		65 - 144
Perfluoroundecanoic acid	ng/L	80	0	80.8	101		69 - 133

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

3C

WATER SEMIVOLATILE LCS/LCSD RECOVERY

Report No: 221072979

Prep Method: PFAS ID QSM B15 Prep

Prep Batch: 718318

Analytical Method: PFAS Isotope Dilution QSM B15

Analytical Batch: 718586

GCAL QC ID: 2225097

ANALYTE	*UNITS*	*SPIKE ADDED*	*LCSD RESULT*	*LCSD % REC*	#	*% RPD*	#	*QC LIMITS REC*	*QC LIMITS RPD*
6:2 Fluorotelomersulfonic acid	ng/L	76.1	81.2	107		4		64 - 140	0 - 30
8:2 Fluorotelomersulfonic acid	ng/L	76.8	81.7	106		2		67 - 138	0 - 30
NEtFOSAA	ng/L	80	78.5	98		2		61 - 135	0 - 30
NMeFOSAA	ng/L	80	84.1	105		6		65 - 136	0 - 30
Perfluorobutanesulfonic acid	ng/L	71	71.4	101		2		72 - 130	0 - 30
Perfluorobutanoic acid	ng/L	80	81	101		.1		73 - 129	0 - 30
Perfluorodecanoic acid	ng/L	80	82.1	103		4		71 - 129	0 - 30
Perfluorododecanoic acid	ng/L	80	80.7	101		2		72 - 134	0 - 30
Perfluoroheptanoic acid	ng/L	80	81.7	102		2		72 - 130	0 - 30
Perfluorohexanesulfonic acid	ng/L	73.1	74.2	102		.4		68 - 131	0 - 30
Perfluorohexanoic acid	ng/L	80	80.7	101		.6		72 - 129	0 - 30
Perfluorononanoic acid	ng/L	80	82.7	103		2		69 - 130	0 - 30
Perfluorooctanesulfonic acid	ng/L	74.2	75	101		.4		65 - 140	0 - 30
Perfluorooctanoic acid	ng/L	80	82.1	103		2		71 - 133	0 - 30
Perfluoropentanoic acid	ng/L	80	81.4	102		.2		72 - 129	0 - 30
Perfluorotetradecanoic acid	ng/L	80	81.1	101		1		71 - 132	0 - 30
Perfluorotridecanoic acid	ng/L	80	82.8	103		3		65 - 144	0 - 30
Perfluoroundecanoic acid	ng/L	80	81.1	101		.3		69 - 133	0 - 30

RPD : 0 out of 18 outside limits

Spike Recovery: 0 out of 36 outside limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

FORM III SV-1

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 221040641 Recovery Limits: 50 - 150

Client Sample ID	LAB SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
CS-DECON-040521	22104064101	75		90		78		74		73					
CS-DECON-040521RE	22104064101											90		89	
CS-DECON-040521RE1	22104064101														
MB2166311	2166311	86		105		98		78		78					
MB2166311RE	2166311											117		113	
LCS2166312	2166312	81		105		92		67		79					
LCS2166312RE	2166312											106		102	
LCSD2166313	2166313	81		100		92		79		77					
LCSD2166313RE	2166313											123		125	
MB2170472	2170472														

Client Sample ID	LAB SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
CS-DECON-040521	22104064101					77		69				83		75	
CS-DECON-040521RE	22104064101	86								60					
CS-DECON-040521RE1	22104064101			73											
MB2166311	2166311	78				77		76		67		92		79	
MB2166311RE	2166311	117													
LCS2166312	2166312	78				80		74		66		89		75	
LCS2166312RE	2166312	109													
LCSD2166313	2166313	84				84		85		67		97		77	
LCSD2166313RE	2166313	124													
MB2170472	2170472			73											

Client Sample ID	LAB SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#
CS-DECON-040521	22104064101	76						66		73	
CS-DECON-040521RE	22104064101					73					
CS-DECON-040521RE1	22104064101			73							
MB2166311	2166311	81				78		79		88	
MB2166311RE	2166311					118					
LCS2166312	2166312	78				68		73		74	
LCS2166312RE	2166312					96					
LCSD2166313	2166313	80				70		75		88	
LCSD2166313RE	2166313					120					
MB2170472	2170472			72							

EIS1: M2 4:2 FTS EIS2: M2 6:2 FTS EIS3: M2 8:2 FTS EIS4: M2PFTA

EIS5: M3PFBS EIS6: M3PFHxS EIS7: M4PFHpA EIS8: M5PFHxA

EIS9: M5PFPeA EIS10: M6PFDA EIS11: M7PFUnA EIS12: M8FOSA

EIS13: M8PFOA EIS14: M8PFOS EIS15: M9PFNA EIS16: MPFBA

EIS17: MPFDoA EIS18: d3-NMeFOSAA EIS19: d5-NEtFOSAA

FORM 8E - ORG

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No: 221040641 Recovery Limits: 50 - 150

Client Sample ID	LAB SampleID	EIS1	#	EIS2	#	EIS3	#	EIS4	#	EIS5	#	EIS6	#	EIS7	#
LCS2170473	2170473														
LCSD2170474	2170474														

Client Sample ID	LAB SampleID	EIS8	#	EIS9	#	EIS10	#	EIS11	#	EIS12	#	EIS13	#	EIS14	#
LCS2170473	2170473			68											
LCSD2170474	2170474			74											

Client Sample ID	LAB SampleID	EIS15	#	EIS16	#	EIS17	#	EIS18	#	EIS19	#
LCS2170473	2170473			69							
LCSD2170474	2170474			74							

EIS1: M2 4:2 FTS EIS2: M2 6:2 FTS EIS3: M2 8:2 FTS EIS4: M2PFTA

EIS5: M3PFBS EIS6: M3PFHxS EIS7: M4PFHpA EIS8: M5PFHxA

EIS9: M5PFPeA EIS10: M6PFDA EIS11: M7PFUnA EIS12: M8FOSA

EIS13: M8PFOA EIS14: M8PFOS EIS15: M9PFNA EIS16: MPFBA

EIS17: MPFDoA EIS18: d3-NMeFOSAA EIS19: d5-NEtFOSAA

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No 221072417 %Rec Limits 50 - 150 * Value outside QC limits

CLIENT SAMPLE ID	LAB ID	EIS1	EIS2	EIS3	EIS4	EIS5	EIS6	EIS7	EIS8	EIS9	EIS10
CS-MW004S-SB-07-09	22107241701	112	107	72	92	90	80	81	81	80	78
CS-MW001S-SB-00-02	22107241702	128	131	93	92	90	77	77	77	81	83
CS-MW001S-SB-00-02-D	22107241703	114	128	91	91	91	77	77	75	80	81
CS-MW001D-SB-08-10	22107241704	119	110	79	97	94	85	85	85	84	83
CS-MW004S-SB-00-02	22107241705	114	111	83	95	92	81	82	81	80	81
CS-MW004S-GW	22107241706	96	87	72	86	83	78	79	78	75	73
CS-MW004S-GW-MS	22107241707	107	98	83	101	99	94	95	94	88	87
CS-MW004S-GW-MSD	22107241708	109	102	91	100	97	94	95	95	92	90
CS-ERB-01	22107241709	134	117	91	102	99	94	92	93	95	96
MB2218045	2218045	79	76	58	70	68	62	61	61	61	59
LCS2218046	2218046	94	84	62	77	77	67	68	67	68	67
LCSD2218047	2218047	87	78	61	76	75	68	68	68	68	66
MB2219153	2219153	98	101	92	101	98	96	97	97	96	95
LCS2219154	2219154	105	95	80	103	98	96	98	98	91	84
LCSD2219155	2219155	104	99	83	101	98	94	95	95	92	93
MB2219180	2219180	131	130	83	90	89	71	67	63	78	81

CLIENT SAMPLE ID	LAB ID	EIS11	EIS12	EIS13	EIS14	EIS15	EIS16	EIS17			
CS-MW004S-SB-07-09	22107241701	82	90	81	83	77	66	72			
CS-MW001S-SB-00-02	22107241702	80	91	80	79	85	65	74			
CS-MW001S-SB-00-02-D	22107241703	78	89	78	77	82	65	74			
CS-MW001D-SB-08-10	22107241704	86	92	86	87	82	70	78			
CS-MW004S-SB-00-02	22107241705	82	92	82	84	80	64	75			
CS-MW004S-GW	22107241706	79	81	77	79	71	63	70			
CS-MW004S-GW-MS	22107241707	94	94	92	94	81	74	81			
CS-MW004S-GW-MSD	22107241708	95	97	94	95	89	78	83			
CS-ERB-01	22107241709	96	100	96	94	92	106	109			
MB2218045	2218045	62	67	62	63	58	57	59			
LCS2218046	2218046	69	75	67	71	63	61	63			
LCSD2218047	2218047	69	73	69	70	63	61	65			
MB2219153	2219153	98	97	96	95	92	85	90			
LCS2219154	2219154	97	95	95	97	80	78	83			
LCSD2219155	2219155	96	97	95	94	87	76	84			
MB2219180	2219180	75	90	77	60	81	66	74			

EIS1) M2 6:2 FTS EIS2) M2 8:2 FTS EIS3) M2PFTA EIS4) M3PFBS EIS5) M3PFHxS
EIS6) M4PFHpA EIS7) M5PFHxA EIS8) M5PFPeA EIS9) M6PFDA EIS10) M7PFUnA
EIS11) M8PFOA EIS12) M8PFOS EIS13) M9PFNA EIS14) MPFBA EIS15) MPFDoA
EIS16) d3-NMeFOSAA EIS17) d5-NEtFOSAA

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No 221072417 %Rec Limits 50 - 150 * Value outside QC limits

CLIENT SAMPLE ID	LAB ID	EIS1	EIS2	EIS3	EIS4	EIS5	EIS6	EIS7	EIS8	EIS9	EIS10
LCS2219181	2219181	119	112	83	92	91	79	78	78	80	79
LCSD2219182	2219182	112	115	82	93	90	69	67	66	77	78

CLIENT SAMPLE ID	LAB ID	EIS11	EIS12	EIS13	EIS14	EIS15	EIS16	EIS17			
LCS2219181	2219181	81	91	81	80	81	68	76			
LCSD2219182	2219182	73	90	75	66	79	66	73			

EIS1) M2 6:2 FTS EIS2) M2 8:2 FTS EIS3) M2PFTA EIS4) M3PFBS EIS5) M3PFHxS

EIS6) M4PFHpA EIS7) M5PFHxA EIS8) M5PFPeA EIS9) M6PFDA EIS10) M7PFUnA

EIS11) M8PFOA EIS12) M8PFOS EIS13) M9PFNA EIS14) MPFBA EIS15) MPFDoA

EIS16) d3-NMeFOSAA EIS17) d5-NEtFOSAA

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No 221072807 %Rec Limits 50 - 150 * Value outside QC limits

CLIENT SAMPLE ID	LAB ID	EIS1	EIS2	EIS3	EIS4	EIS5	EIS6	EIS7	EIS8	EIS9	EIS10
CS-MW002D-SB-39-41	22107280701	95	102	106	103	103	104	105	106	108	110
AOI2-SB2-00-02	22107280703	90	100	101	100	99	101	101	101	106	104
AOI2-SB2-02-04	22107280704	65	74	60	76	74	77	78	77	80	77
AOI2-SB3-00-02	22107280705	82	89	92	96	93	92	93	89	97	97
AOI2-SB3-02-04	22107280706	75	87	101	95	93	97	96	96	98	99
AOI2-SB3-02-04DL	22107280706										
AOI2-SB4-00-02	22107280707	88	96	100	103	101	103	103	103	107	105
AOI2-SB5-00-02	22107280710	86	96	101	101	100	103	103	103	107	105
AOI2-SB4-02-04	22107280711	79	91	90	90	90	91	92	92	94	94
AOI2-SB5-02-04	22107280712	83	92	98	98	98	100	99	99	104	102
AOI2-SB5-02-04 MS	22107280713	87	97	106	103	103	104	105	102	107	107
AOI2-SB5-02-04 MSD	22107280714	85	94	102	99	98	101	101	100	101	104
CS-ERB-02	22107280715	109	115	95	105	106	102	103	103	108	102
CS-ERB-03	22107280716	67	78	60	67	66	68	67	65	69	65
CS-FRB-01	22107280717	67	78	65	73	71	72	71	69	71	66
CS-MW001S-GW	22107280718	75	78	66	73	72	74	73	71	72	72

CLIENT SAMPLE ID	LAB ID	EIS11	EIS12	EIS13	EIS14	EIS15	EIS16	EIS17			
CS-MW002D-SB-39-41	22107280701	106	108	109	104	107	97	110			
AOI2-SB2-00-02	22107280703	104	104	106	99	101	100	108			
AOI2-SB2-02-04	22107280704	80	77	80	76	71	72	74			
AOI2-SB3-00-02	22107280705	93	94	95	88	94	88	97			
AOI2-SB3-02-04	22107280706	98	69	83	94	95	88	98			
AOI2-SB3-02-04DL	22107280706		88								
AOI2-SB4-00-02	22107280707	106	104	107	101	103	95	106			
AOI2-SB5-00-02	22107280710	105	105	108	101	102	103	107			
AOI2-SB4-02-04	22107280711	93	92	93	90	91	88	93			
AOI2-SB5-02-04	22107280712	100	102	105	97	100	91	103			
AOI2-SB5-02-04 MS	22107280713	105	108	110	101	105	99	107			
AOI2-SB5-02-04 MSD	22107280714	101	102	106	99	101	96	101			
CS-ERB-02	22107280715	108	107	106	100	92	88	101			
CS-ERB-03	22107280716	69	67	69	63	61	57	63			
CS-FRB-01	22107280717	73	68	72	68	63	60	65			
CS-MW001S-GW	22107280718	76	71	74	69	68	61	66			

EIS1) M2 6:2 FTS **EIS2)** M2 8:2 FTS **EIS3)** M2PFTA **EIS4)** M3PFBS **EIS5)** M3PFHxS
EIS6) M4PFHpA **EIS7)** M5PFHxA **EIS8)** M5PFPeA **EIS9)** M6PFDA **EIS10)** M7PFUnA
EIS11) M8PFOA **EIS12)** M8PFOS **EIS13)** M9PFNA **EIS14)** MPFBA **EIS15)** MPFDoA
EIS16) d3-NMeFOSAA **EIS17)** d5-NEtFOSAA

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No 221072807 %Rec Limits 50 - 150 * Value outside QC limits

CLIENT SAMPLE ID	LAB ID	EIS1	EIS2	EIS3	EIS4	EIS5	EIS6	EIS7	EIS8	EIS9	EIS10
CS-MW001S-GW-D	22107280719	73	74	60	70	70	71	71	69	69	65
CS-MW001D-GW	22107280720	83	84	69	75	73	75	73	71	75	73
CS-DECON-072521	22107280721	116	91	62	95	93	94	96	96	85	83
CS-MW003S-SB-40-42	22107280722	80	83	89	94	94	98	97	97	97	100
CS-MW003S-SB-40-42-D	22107280723	85	90	99	102	101	102	104	103	103	103
CS-ST-045-072621	22107280724	140	144	119	130	127	128	127	126	128	125
MB2220286	2220286	77	80	69	73	74	75	73	71	77	72
LCS2220287	2220287	73	80	69	72	73	75	72	71	76	73
LCSD2220288	2220288	68	75	65	71	71	73	70	69	73	68
MB2220588	2220588	92	96	99	98	96	89	90	88	96	96
LCS2220589	2220589	89	100	100	96	97	92	90	91	95	99
LCSD2220590	2220590	89	97	99	97	97	95	95	94	96	98
MB2223697	2223697	135	196*	144	143	141	136	136	134	135	135
LCS2223698	2223698	132	192*	137	147	143	141	143	139	136	136
LCSD2223699	2223699	132	182*	139	143	141	133	135	131	129	131
MB2225095	2225095	127	111	95	97	94	97	98	99	98	99

CLIENT SAMPLE ID	LAB ID	EIS11	EIS12	EIS13	EIS14	EIS15	EIS16	EIS17			
CS-MW001S-GW-D	22107280719	72	67	71	66	59	53	61			
CS-MW001D-GW	22107280720	77	74	76	69	70	66	70			
CS-DECON-072521	22107280721	96	85	92	97	78	79	84			
CS-MW003S-SB-40-42	22107280722	99	96	102	95	97	92	97			
CS-MW003S-SB-40-42-D	22107280723	103	102	106	100	101	95	104			
CS-ST-045-072621	22107280724	127	129	131	124	137	110	123			
MB2220286	2220286	75	76	77	71	69	66	71			
LCS2220287	2220287	76	75	76	69	70	69	73			
LCSD2220288	2220288	74	72	73	68	64	63	65			
MB2220588	2220588	91	102	97	86	98	90	98			
LCS2220589	2220589	93	102	98	89	98	93	96			
LCSD2220590	2220590	95	102	98	92	98	92	99			
MB2223697	2223697	135	140	137	135	138	105	114			
LCS2223698	2223698	139	142	140	140	139	102	120			
LCSD2223699	2223699	133	141	135	131	134	96	114			
MB2225095	2225095	97	94	97	99	95	93	102			

EIS1) M2 6:2 FTS **EIS2)** M2 8:2 FTS **EIS3)** M2PFTA **EIS4)** M3PFBS **EIS5)** M3PFHxS
EIS6) M4PFHpA **EIS7)** M5PFHxA **EIS8)** M5PFPeA **EIS9)** M6PFDA **EIS10)** M7PFUnA
EIS11) M8PFOA **EIS12)** M8PFOS **EIS13)** M9PFNA **EIS14)** MPFBA **EIS15)** MPFDoA
EIS16) d3-NMeFOSAA **EIS17)** d5-NEtFOSAA

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No 221072807 %Rec Limits 50 - 150 * Value outside QC limits

CLIENT SAMPLE ID	LAB ID	EIS1	EIS2	EIS3	EIS4	EIS5	EIS6	EIS7	EIS8	EIS9	EIS10
LCS2225096	2225096	138	102	97	96	96	99	101	101	100	98
LCSD2225097	2225097	103	94	89	93	90	92	95	95	91	92
MB2228831	2228831	100	111	96	94	96	96	95	92	100	96
LCS2228832	2228832	98	103	95	100	101	100	100	97	103	104
LCSD2228833	2228833	97	100	94	100	101	97	100	96	102	101

CLIENT SAMPLE ID	LAB ID	EIS11	EIS12	EIS13	EIS14	EIS15	EIS16	EIS17			
LCS2225096	2225096	99	96	100	102	98	95	102			
LCSD2225097	2225097	92	89	91	95	90	84	91			
MB2228831	2228831	101	99	99	90	93	91	100			
LCS2228832	2228832	103	103	103	97	93	92	101			
LCSD2228833	2228833	104	102	102	95	93	94	95			

EIS1) M2 6:2 FTS EIS2) M2 8:2 FTS EIS3) M2PFTA EIS4) M3PFBS EIS5) M3PFHxS

EIS6) M4PFHpA EIS7) M5PFHxA EIS8) M5PFPeA EIS9) M6PFDA EIS10) M7PFUnA

EIS11) M8PFOA EIS12) M8PFOS EIS13) M9PFNA EIS14) MPFBA EIS15) MPFDoA

EIS16) d3-NMeFOSAA EIS17) d5-NEtFOSAA

8E

EXTRACTED INTERNAL STANDARD RECOVERY

Report No 221072979 %Rec Limits 50 - 150 * Value outside QC limits

CLIENT SAMPLE ID	LAB ID	EIS1	EIS2	EIS3	EIS4	EIS5	EIS6	EIS7	EIS8	EIS9	EIS10
CS-MW003S-GW	22107297901	124	100	90	98	97	98	100	99	95	94
CS-MW002D-GW	22107297902	112	94	87	95	91	95	97	96	93	92
MB2225095	2225095	127	111	95	97	94	97	98	99	98	99
LCS2225096	2225096	138	102	97	96	96	99	101	101	100	98
LCSD2225097	2225097	103	94	89	93	90	92	95	95	91	92

CLIENT SAMPLE ID	LAB ID	EIS11	EIS12	EIS13	EIS14	EIS15	EIS16	EIS17			
CS-MW003S-GW	22107297901	98	91	95	97	91	84	93			
CS-MW002D-GW	22107297902	95	89	93	96	89	79	91			
MB2225095	2225095	97	94	97	99	95	93	102			
LCS2225096	2225096	99	96	100	102	98	95	102			
LCSD2225097	2225097	92	89	91	95	90	84	91			

EIS1) M2 6:2 FTS EIS2) M2 8:2 FTS EIS3) M2PFTA EIS4) M3PFBS EIS5) M3PFHxS
EIS6) M4PFHpA EIS7) M5PFHxA EIS8) M5PFPeA EIS9) M6PFDA EIS10) M7PFUnA
EIS11) M8PFOA EIS12) M8PFOS EIS13) M9PFNA EIS14) MPFBA EIS15) MPFDoA
EIS16) d3-NMeFOSAA EIS17) d5-NEtFOSAA

XIV

ANALYSIS RUN LOG

Report No:	221072417	Analytical Batch:	717009	Start Date:	07/24/21
Instrument ID:	PH METER WATERS	Analytical Method:	EPA 9045D	End Date:	07/24/21

CLIENT SAMPLE ID	*LAB SAMPLE ID*	*DILUTION*	*TIME*	*ANALYTES* pH
ICV	1600	1	1721	X
CS-MW001S-SB-00-02	22107241702	1	1737	X
CS-MW001S-SB-00-02-D	22107241703	1	1741	X
CCV	1800	1	1748	X

FORM XIV - GENCHEM

II

CONTINUING CALIBRATION VERIFICATION

Report No:	221072417	Instrument ID:	TOC6
Analysis Date:	08/05/21 1110	Lab File ID:	9146
Analytical Method:	EPA 9060A	Analytical Batch:	718045

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*% REC*	*LCL*	*UCL*	*Q*
Total Organic Carbon	mg/kg	10000	9570	96	90	110	

FORM II - GENCHEM

II

CONTINUING CALIBRATION VERIFICATION

Report No:	221072417	Instrument ID:	TOC6
Analysis Date:	08/05/21 1338	Lab File ID:	9146
Analytical Method:	EPA 9060A	Analytical Batch:	718045

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
Total Organic Carbon	mg/kg	10000	9570	96	90	110	

FORM II - GENCHEM

III

METHOD BLANK

Report No:	221072417	Blank ID:	MB2223453
Matrix:	Solid	Instrument ID:	TOC6
Analysis Date:	08/05/21 1120	Lab File ID:	9146
Analytical Method:	EPA 9060A	Analytical Batch:	718045

ANALYTE	*RESULT*	*UNITS*	*Q*	*DL*	*LOD*	*LOQ*
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

III

CONTINUING CALIBRATION BLANK

Report No:	221072417	Blank ID:	CCB for HBN 718045
Matrix:	Solid	Instrument ID:	TOC6
Analysis Date:	08/05/21 1348	Lab File ID:	9146
Analytical Method:	EPA 9060A	Analytical Batch:	718045

ANALYTE	*RESULT*	*UNITS*	*Q*	*DL*	*LOD*	*LOQ*
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

VII

LABORATORY CONTROL SPIKE

Report No:	221072417	LAB ID:	LCS2223454
Matrix:	Solid	Instrument ID:	TOC6
Analyst:	JGD	Lab File ID:	9146
Prep Date:	NA	Analysis Date:	08/05/21 1130
Prep Batch:	NA	Analytical Batch:	718045
Prep Method:	NA	Analytical Method:	EPA 9060A

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*%REC*	*Q*	*% REC LIMITS*
Total Organic Carbon	mg/kg	2000	1860	93		69 - 128

FORM VII - GENCHEM

XIV

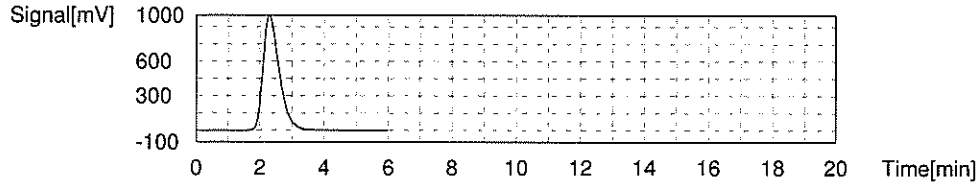
ANALYSIS RUN LOG

Report No:	221072417	Analytical Batch:	718045	Start Date:	08/05/21
Instrument ID:	TOC6	Analytical Method:	EPA 9060A	End Date:	08/05/21

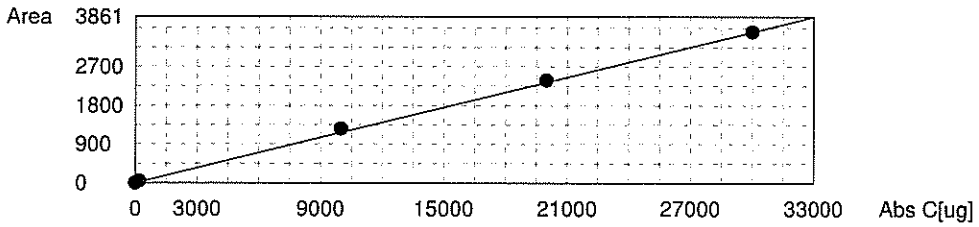
CLIENT SAMPLE ID	*LAB SAMPLE ID*	*DILUTION*	*TIME*	*ANALYTES* TOC
CCV	1800	1	1110	X
MB2223453	2223453	1	1120	X
LCS2223454	2223454	1	1130	X
CS-MW001S-SB-00-02	22107241702	1	1254	X
CS-MW001S-SB-00-02-D	22107241703	1	1305	X
CCV	1800	1	1338	X
CCB	1900	1	1348	X

No.	Area	CNV	Abs C	Weight	Rem.	Ex.	Date / Time
1	3510	3510	30000ug	1000mg	*H*****		3/24/2021 11:43:44 AM

Mean Area 3510
Mean CNV 3510



Slope: 0.1169
Intercept 0.000
r^2 0.9994
r 0.9997
Zero Shift Yes



Sample

Sample Name:	ICB
Sample ID:	PLH/JGD ICAL
Origin:	SSM ICAL05-08-19.2021_03_24_10_50_27.cal
Status	Completed
Chk. Result	

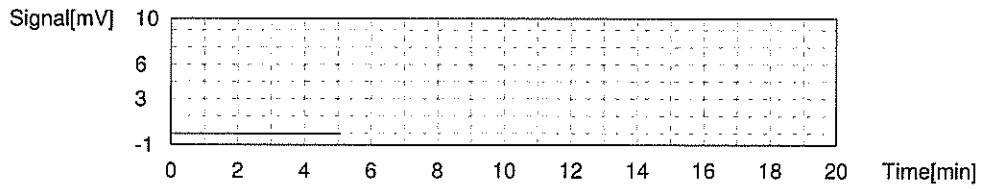
Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.000ppm

1. Det

Anal.: SSM-TC

No.	Area	CNV	Abs C	Conc.	Weight	Volume	Ex.	Cal. Curve	Date / Time
1	0.000	0.000	0.000ug	0.000ppm	1000mg	1000uL		SSM ICAL05-08-19.2021_03_24_10_50_27.cal	3/24/2021 12:06:48 PM

Mean Area	0.000
Mean CNV	0.000
Mean Conc.	0.000ppm



Sample

Sample Name:	CS1 200
Sample ID:	PLH/JGD ICAL
Origin:	SSM ICAL05-08-19.2021_03_24_10_50_27.cal
Status	Completed
Chk. Result	

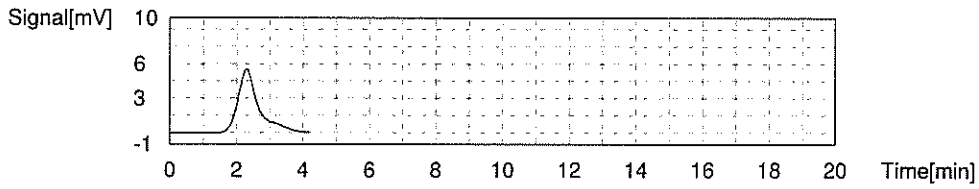
Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:199.7ppm

1. Det

Anal.: SSM-TC

No.	Area	CNV	Abs C	Conc.	Weight	Volume	Ex.	Cal. Curve	Date / Time
1	23.34	23.34	199.7ug	199.7ppm	1000mg	1000uL		SSM ICAL05-08-19.2021_03_24_10_50_27.cal	3/24/2021 12:37:50 PM

Mean Area	23.34
Mean CNV	23.34
Mean Conc.	199.7ppm



Sample

Sample Name:	ICV 10,000
Sample ID:	PLH/JGD ICAL
Origin:	SSM ICAL05-08-19.2021_03_24_10_50_27.cal
Status	Completed
Chk. Result	

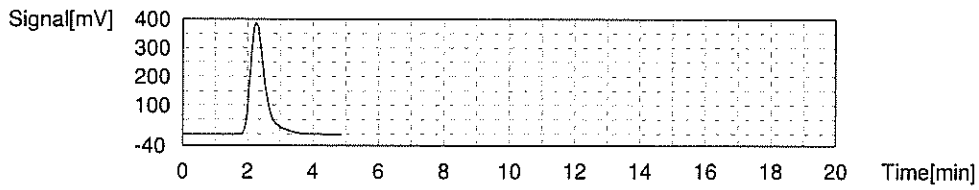
Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:10231ppm

1. Det

Anal.: SSM-TC

No.	Area	CNV	Abs C	Conc.	Weight	Volume	Ex.	Cal. Curve	Date / Time
1	1196	1196	10231ug	10231ppm	1000mg	1000uL		SSM ICAL05-08-19.2021_03_24_10_50_27.cal	3/24/2021 12:46:13 PM

Mean Area	1196
Mean CNV	1196
Mean Conc.	10231ppm



Sample

Sample Name:	ICV 20,000
Sample ID:	PLH/JGD ICAL
Origin:	SSM ICAL05-08-19.2021_03_24_10_50_27.cal
Status	Completed
Chk. Result	

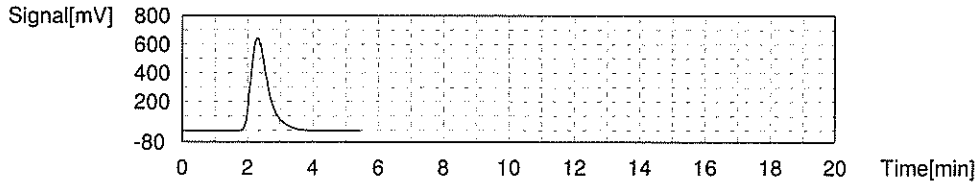
Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:19889ppm

1. Det

Anal.: SSM-TC

No.	Area	CNV	Abs C	Conc.	Weight	Volume	Ex.	Cal. Curve	Date / Time
1	2325	2325	19889ug	19889ppm	1000mg	1000uL		SSM ICAL05-08-19.2021_03_24_10_50_27.cal	3/24/2021 12:56:36 PM

Mean Area	2325
Mean CNV	2325
Mean Conc.	19889ppm



XIV

ANALYSIS RUN LOG

Report No:	221072807	Analytical Batch:	717293	Start Date:	07/28/21
Instrument ID:	PH METER WATERS	Analytical Method:	EPA 9045D	End Date:	07/28/21

CLIENT SAMPLE ID	LAB SAMPLE ID	DILUTION	TIME	ANALYTES pH
ICV	1600	1	1318	
CCV	1800	1	1338	
AOI2-SB4-00-02	22107280707	1	1343	X
CS-MW003S-SB-40-42	22107280722	1	1344	X
CCV	1800	1	1346	

FORM XIV - GENCHEM

II

CONTINUING CALIBRATION VERIFICATION

Report No:	221072807	Instrument ID:	TOC6
Analysis Date:	08/06/21 1501	Lab File ID:	9149
Analytical Method:	EPA 9060A	Analytical Batch:	718152

ANALYTE	UNITS	TRUE	FOUND	% REC	LCL	UCL	Q
Total Organic Carbon	mg/kg	10000	10100	101	90	110	

III

METHOD BLANK

Report No:	221072807	Blank ID:	MB2224012
Matrix:	Solid	Instrument ID:	TOC6
Analysis Date:	08/06/21 1202	Lab File ID:	9149
Analytical Method:	EPA 9060A	Analytical Batch:	718152

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

III

CONTINUING CALIBRATION BLANK

Report No:	221072807	Blank ID:	CCB for HBN 718152
Matrix:	Solid	Instrument ID:	TOC6
Analysis Date:	08/06/21 1517	Lab File ID:	9149
Analytical Method:	EPA 9060A	Analytical Batch:	718152

ANALYTE	RESULT	UNITS	Q	DL	LOD	LOQ
Total Organic Carbon	200	mg/kg	U	153	200	250

FORM III - GENCHEM

V

MS/MSD RECOVERY

Report No:	221072807	Parent Sample ID:	AOI2-SB4-00-02
Prep Date:	NA	Parent LAB ID:	22107280707
Prep Batch:	NA	Analytical Batch:	718152
Prep Method:	NA	Analytical Method:	EPA 9060A

LAB QC ID:	22107280708 MS	Instrument ID:	TOC6
Analyst:	JGD	Lab File ID:	9149
Analysis Date:	08/06/21 1247	Dilution:	1

ANALYTE	UNITS	SPIKE ADDED	SAMPLE RESULT	MS RESULT	MS % REC	#	QC LIMITS
Total Organic Carbon	mg/kg	23000	1080	21300	102 ✓		69 - 128

LAB QC ID:	22107280709 MSD	Instrument ID:	TOC6
Analyst:	JGD	Lab File ID:	9149
Analysis Date:	08/06/21 1258	Dilution:	1

ANALYTE	UNITS	SPIKE ADDED	MSD RESULT	MSD % REC	#	% RPD	#	%REC LIMITS	RPD LIMITS
Total Organic Carbon	mg/kg	23000	20100	96 ✓		6 ✓		69 - 128	0 - 20

FORM V - GENCHEM

VI
DUPLICATES

Report No:	221072807	Parent Sample ID:	CS-MW003S-SB-40-42
Prep Method:	NA	Parent LAB ID:	22107280722
Prep Date:	NA	Prep Batch:	NA
Analytical Method:	EPA 9060A	Analytical Batch:	718152

LAB QC ID:	2224014 DUP	Instrument ID:	TOC6
Analyst:	JGD	Lab File ID:	NA
Analysis Date:	08/06/21 1326	Dilution:	1

ANALYTE	UNITS	SAMPLE RESULT	Q	DUP RESULT	Q	RPD	#	RPD LIMITS
Total Organic Carbon	mg/kg	529		685		26	*	0 - 25

FORM VI - GENCHEM

VII

LABORATORY CONTROL SPIKE

Report No:	221072807	LAB ID:	LCS2224013
Matrix:	Solid	Instrument ID:	TOC6
Analyst:	JGD	Lab File ID:	9149
Prep Date:	NA	Analysis Date:	08/06/21 1216
Prep Batch:	NA	Analytical Batch:	718152
Prep Method:	NA	Analytical Method:	EPA 9060A

ANALYTE	*UNITS*	*TRUE*	*FOUND*	*%REC*	*Q*	*% REC LIMITS*
Total Organic Carbon	mg/kg	2000	2120	106		69 - 128

FORM VII - GENCHEM

XIV

ANALYSIS RUN LOG

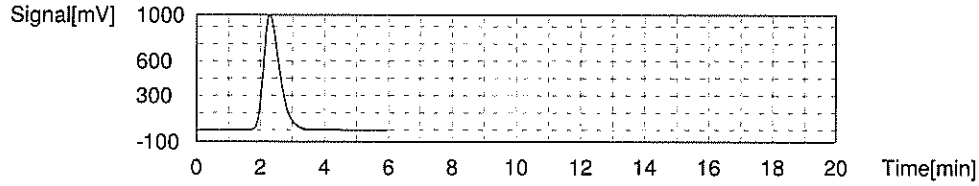
Report No:	221072807	Analytical Batch:	718152	Start Date:	08/06/21
Instrument ID:	TOC6	Analytical Method:	EPA 9060A	End Date:	08/06/21

CLIENT SAMPLE ID	*LAB SAMPLE ID*	*DILUTION*	*TIME*	*ANALYTES* TOC
CCV	1800	1	1138	
MB2224012	2224012	1	1202	X
LCS2224013	2224013	1	1216	X
AOI2-SB4-00-02	22107280707	1	1234	X
AOI2-SB4-00-02 MS	22107280708	1	1247	X
AOI2-SB4-00-02 MSD	22107280709	1	1258	X
CS-MW003S-SB-40-42	22107280722	1	1316	X
CS-MW003S-SB-40-42DUP	2224014	1	1326	X
CCV	1800	1	1501	X
CCB	1900	1	1517	X

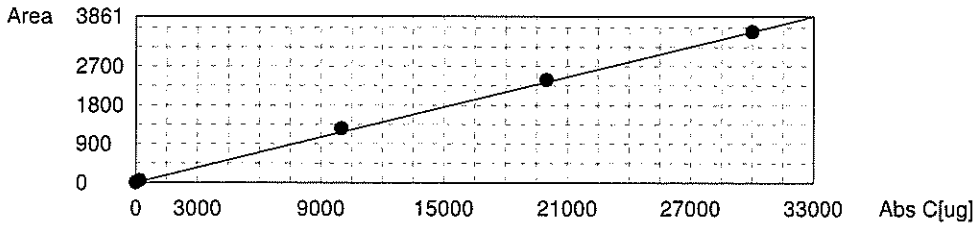
FORM XIV - GENCHEM

No.	Area	CNV	Abs C	Weight	Rem.	Ex.	Date / Time
1	3510	3510	30000ug	1000mg	*H*****		3/24/2021 11:43:44 AM

Mean Area 3510
Mean CNV 3510



Slope:	0.1169
Intercept	0.000
r^2	0.9994
r	0.9997
Zero Shift	Yes



Sample

Sample Name:	ICB
Sample ID:	PLH/JGD ICAL
Origin:	SSM ICAL05-08-19.2021_03_24_10_50_27.cal
Status	Completed
Chk. Result	

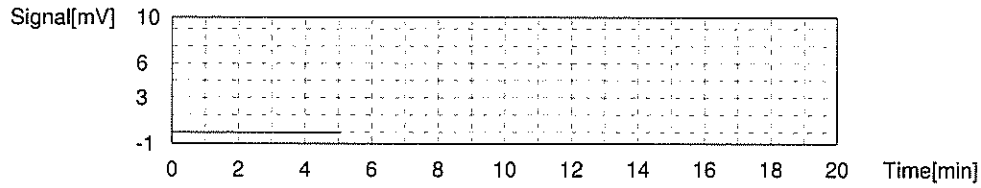
Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:0.000ppm

1. Det

Anal.: SSM-TC

No.	Area	CNV	Abs C	Conc.	Weight	Volume	Ex.	Cal. Curve	Date / Time
1	0.000	0.000	0.000ug	0.000ppm	1000mg	1000uL		SSM ICAL05-08-19.2021_03_24_10_50_27.cal	3/24/2021 12:06:48 PM

Mean Area	0.000
Mean CNV	0.000
Mean Conc.	0.000ppm



Sample

Sample Name:	CS1 200
Sample ID:	PLH/JGD ICAL
Origin:	SSM ICAL05-08-19.2021_03_24_10_50_27.cal
Status	Completed
Chk. Result	

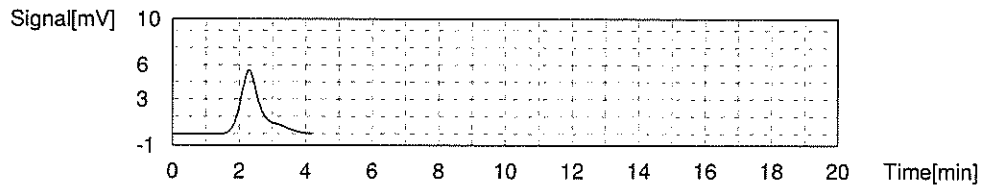
Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:199.7ppm

1. Det

Anal.: SSM-TC

No.	Area	CNV	Abs C	Conc.	Weight	Volume	Ex.	Cal. Curve	Date / Time
1	23.34	23.34	199.7ug	199.7ppm	1000mg	1000uL		SSM ICAL05-08-19.2021_03_24_10_50_27.cal	3/24/2021 12:37:50 PM

Mean Area	23.34
Mean CNV	23.34
Mean Conc.	199.7ppm



Sample

Sample Name:	ICV 10,000
Sample ID:	PLH/JGD ICAL
Origin:	SSM ICAL05-08-19.2021_03_24_10_50_27.cal
Status	Completed
Chk. Result	

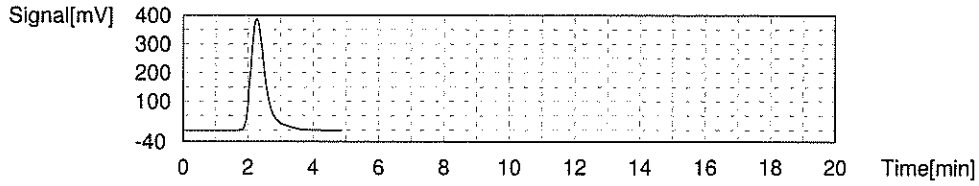
Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:10231ppm

1. Det

Anal.: SSM-TC

No.	Area	CNV	Abs C	Conc.	Weight	Volume	Ex.	Cal. Curve	Date / Time
1	1196	1196	10231ug	10231ppm	1000mg	1000uL		SSM ICAL05-08-19.2021_03_24_10_50_27.cal	3/24/2021 12:46:13 PM

Mean Area	1196
Mean CNV	1196
Mean Conc.	10231ppm



Sample

Sample Name:	ICV 20,000
Sample ID:	PLH/JGD ICAL
Origin:	SSM ICAL05-08-19.2021_03_24_10_50_27.cal
Status	Completed
Chk. Result	

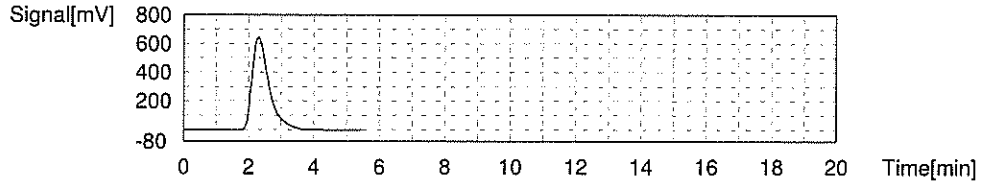
Type	Anal.	Manual Dilution	Density	Result
Unknown	SSM-TC	1.000	1.000mg/uL	SSM-TC:19889ppm

1. Det

Anal.: SSM-TC

No.	Area	CNV	Abs C	Conc.	Weight	Volume	Ex.	Cal. Curve	Date / Time
1	2325	2325	19889ug	19889ppm	1000mg	1000uL		SSM ICAL05-08-19.2021_03_24_10_50_27.cal	3/24/2021 12:56:36 PM

Mean Area	2325
Mean CNV	2325
Mean Conc.	19889ppm



Sample Summary

LAB ID	Client ID	Matrix	Collect Date	Receive Date
22104064101	CS-DECON-040521	Water	04/05/2021 12:30	04/06/2021 10:00

Sample Summary

Lab ID	Client ID	Matrix	Collect Date	Receive Date
22107241701	CS-MW004S-SB-07-09	Solid	7/19/21 11:15	7/23/21 09:50
22107241702	CS-MW001S-SB-00-02	Solid	7/20/21 13:15	7/23/21 09:50
22107241703	CS-MW001S-SB-00-02-D	Solid	7/20/21 13:15	7/23/21 09:50
22107241704	CS-MW001D-SB-08-10	Solid	7/20/21 14:15	7/23/21 09:50
22107241705	CS-MW004S-SB-00-02	Solid	7/19/21 11:00	7/23/21 09:50
22107241706	CS-MW004S-GW	Water	7/22/21 13:50	7/23/21 09:50
22107241707	CS-MW004S-GW-MS	Water	7/22/21 13:50	7/23/21 09:50
22107241708	CS-MW004S-GW-MSD	Water	7/22/21 13:50	7/23/21 09:50
22107241709	CS-ERB-01	Water	7/22/21 15:20	7/23/21 09:50

Sample Summary

Lab ID	Client ID	Matrix	Collect Date	Receive Date
22107280701	CS-MW002D-SB-39-41	Solid	7/23/21 10:50	7/27/21 10:30
22107280702	CS-MW002D-SB-62-63	Solid	7/23/21 11:30	7/27/21 10:30
22107280703	AOI2-SB2-00-02	Solid	7/24/21 10:00	7/27/21 10:30
22107280704	AOI2-SB2-02-04	Solid	7/24/21 10:10	7/27/21 10:30
22107280705	AOI2-SB3-00-02	Solid	7/24/21 10:40	7/27/21 10:30
22107280706	AOI2-SB3-02-04	Solid	7/24/21 10:50	7/27/21 10:30
22107280707	AOI2-SB4-00-02	Solid	7/24/21 11:00	7/27/21 10:30
22107280708	AOI2-SB4-00-02 MS	Solid	7/24/21 11:00	7/27/21 10:30
22107280709	AOI2-SB4-00-02 MSD	Solid	7/24/21 11:00	7/27/21 10:30
22107280710	AOI2-SB5-00-02	Solid	7/24/21 11:25	7/27/21 10:30
22107280711	AOI2-SB4-02-04	Solid	7/24/21 11:10	7/27/21 10:30
22107280712	AOI2-SB5-02-04	Solid	7/24/21 11:30	7/27/21 10:30
22107280713	AOI2-SB5-02-04 MS	Solid	7/24/21 11:30	7/27/21 10:30
22107280714	AOI2-SB5-02-04 MSD	Solid	7/24/21 11:30	7/27/21 10:30
22107280715	CS-ERB-02	Water	7/24/21 11:45	7/27/21 10:30
22107280716	CS-ERB-03	Water	7/25/21 08:15	7/27/21 10:30
22107280717	CS-FRB-01	Water	7/25/21 08:45	7/27/21 10:30
22107280718	CS-MW001S-GW	Water	7/24/21 10:45	7/27/21 10:30
22107280719	CS-MW001S-GW-D	Water	7/24/21 10:45	7/27/21 10:30
22107280720	CS-MW001D-GW	Water	7/24/21 13:20	7/27/21 10:30
22107280721	CS-DECON-072521	Water	7/25/21 09:15	7/27/21 10:30
22107280722	CS-MW003S-SB-40-42	Solid	7/25/21 09:55	7/27/21 10:30
22107280723	CS-MW003S-SB-40-42-D	Solid	7/25/21 09:55	7/27/21 10:30
22107280724	CS-ST-045-072621	Solid	7/26/21 12:00	7/27/21 10:30

Sample Summary

Lab ID	Client ID	Matrix	Collect Date	Receive Date
22107297901	CS-MW003S-GW	Water	7/27/21 11:45	7/29/21 10:10
22107297902	CS-MW002D-GW	Water	7/28/21 09:30	7/29/21 10:10

Case Narrative

Client: AECOM **Report:** 221040641

Pace Analytical Gulf Coast received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

This report was completed in accordance with DOD QSM 5.3 as specified in the contract.

SEMI-VOLATILES MASS SPECTROMETRY

In the PFAS Isotope Dilution QSM B15 analysis for prep batch 707793, the LCS and/or LCSD recoveries are above the upper control limits for PFDA, PFNA, and PFTrDA. The analytes were not detected in the associated samples.

MISCELLANEOUS

PFAS Abbreviations

Abbreviation	Analyte Name
PFBA	Perfluorobutanoic acid
PFBS	Perfluorobutanesulfonic acid
PFDA	Perfluorodecanoic acid
PFDS	Perfluorodecane sulfonic acid
PFDoA	Perfluorododecanoic acid
PFEESA	Perfluoro(2-ethoxyethane)sulfonic acid
PFHpA	Perfluoroheptanoic acid
PFHpS	Perfluoro-1-heptanesulfonic acid
PFHxA	Perfluorohexanoic acid
PFHxS	Perfluorohexanesulfonic acid
PFMBA	Perfluoro-4-methoxybutanoic acid
PFMPA	Perfluoro-3-methoxypropanoic acid
PFNA	Perfluorononanoic acid
PFNS	Perfluorononanesulfonic acid
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
PFPeA	Perfluoropentanoic acid
PFPeS	Perfluoropentanesulfonic acid
PFTA	Perfluorotetradecanoic acid
PFTeDA	Perfluorotetradecanoic acid
PFTrDA	Perfluorotridecanoic acid
PFUnA	Perfluoroundecanoic acid

Abbreviation	Analyte Name
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid
4:2 FTS	4:2 Fluorotelomer sulfonic acid
6:2 FTS	6:2 Fluorotelomer sulfonic acid
8:2 FTS	8:2 Fluorotelomer sulfonic acid
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid
ADONA	Dodecafluoro-3H-4,8-dioxanonanoic acid
FOSA	Perfluorooctane Sulfonamide
HFPO-DA	Perfluoro-2-proxypropanoic acid
NEtFOSAA	N-ethylperfluorooctanesulfonamidoacetic acid
NFDHA	Nonafluoro-3,6-dioxaheptanoic acid
NMeFOSAA	N-methylperfluorooctanesulfonamidoacetic acid

Case Narrative

Client: AECOM **Report:** 221072417

Pace Analytical Gulf Coast received and analyzed the sample(s) listed
on the Report Sample Summary page of this report. Receipt of the sample(s) is documented
by the attached chain of custody. This applies only to the sample(s) listed in this report.
No sample integrity or quality control exceptions were identified unless noted below.

This report was completed in accordance with DOD QSM 5.3 as specified in the contract.

SEMI-VOLATILES MASS SPECTROMETRY

In the PFAS Isotope Dilution QSM B15 analysis for prep batch 717017, the MS/MSD exhibited recovery failures.

Case Narrative

Client: AECOM **Report:** 221072807

Pace Analytical Gulf Coast received and analyzed the sample(s) listed
on the Report Sample Summary page of this report. Receipt of the sample(s) is documented
by the attached chain of custody. This applies only to the sample(s) listed in this report.
No sample integrity or quality control exceptions were identified unless noted below.

This report was completed in accordance with DOD QSM 5.3 as specified in the contract.

SEMI-VOLATILES MASS SPECTROMETRY

In the PFAS Isotope Dilution QSM B15 analysis of extraction batch 718109, the recovery for the extracted internal standard M2 8:2 FTS is above the upper control limit in the method blank, LCS and LCSD. The method blank is non-detect for the associated target analyte 8:2 FTS and the recovery of the associated target analyte 8:2 FTS is within control limits in the LCS and LCSD. There were several RPDs outside control limits in the LCSD; however the recovery of all associated target compounds are within control limits.

GENERAL CHEMISTRY

In the EPA 9060A analysis for prep batch, the Sample/Duplicate RPD for Total Organic Carbon is above the control limit. The heterogeneous nature of the QC sample is believed to be responsible for this.

MISCELLANEOUS

See subcontract laboratory report case narrative.

Case Narrative

Client: AECOM **Report:** 221072979

Pace Analytical Gulf Coast received and analyzed the sample(s) listed
on the Report Sample Summary page of this report. Receipt of the sample(s) is documented
by the attached chain of custody. This applies only to the sample(s) listed in this report.
No sample integrity or quality control exceptions were identified unless noted below.

This report was completed in accordance with DOD QSM 5.3 as specified in the contract.

No anomalies were found for the analyzed sample(s).

Pace Analytical®

SAMPLE RECEIVING CHECKLIST

221040641

SAMPLE DELIVERY GROUP 221040641	
Client PM AEC 4838 - AECOM	**Transport Method** FEDEX
Profile Number 290377	**Received By** Jenkins, Mark A.
Line Item(s) 2 - GW - 18 compounds	**Receive Date(s)** 04/06/21

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by Pace Gulf Coast?	☑	☐

COOLERS

Airbill	Thermometer ID: E34	Temp °C
7855 9768 5938		3.6

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Pace Analytical®

SAMPLE RECEIVING CHECKLIST

221072417

SAMPLE DELIVERY GROUP 221072417	
Client **PM** AEC 4838 - AECOM	**Transport Method** FEDEX
Profile Number 290377	**Received By** McCune, Dodie N.
Line Item(s) 1 - Soil - 18 compounds 2 - GW - 18 compounds	**Receive Date(s)** 07/23/21

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by Pace Gulf Coast?	☑	☐

COOLERS

Airbill	Thermometer ID: E34	Temp °C
516717038416		4.3

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Pace Analytical®

SAMPLE RECEIVING CHECKLIST

221072807

SAMPLE DELIVERY GROUP 221072807	
Client PM AEC 4838 - AECOM	**Transport Method** FEDEX
Profile Number 290377	**Received By** Jenkins, Mark A.
Line Item(s) 1 - Soil - 18 compounds 2 - GW - 18 compounds	**Receive Date(s)** 07/27/21

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by Pace Gulf Coast?	☑	☐

COOLERS

Airbill	Thermometer ID: E34	Temp °C
5167 1709 8479	✓	0.3

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.6

Pace Analytical®

SAMPLE RECEIVING CHECKLIST

221072979

SAMPLE DELIVERY GROUP 221072979	
Client PM AEC 4838 - AECOM	**Transport Method** FEDEX
Profile Number 290377	**Received By** McCune, Dodie N.
Line Item(s) 2 - GW - 18 compounds	**Receive Date(s)** 07/29/21

CHECKLIST	YES	NO
Samples received with proper thermal preservation?	☑	☐
Radioactivity is <1600 cpm? If no, record cpm value in notes section.	☑	☐
COC relinquished and complete (including sampleIDs, collect times, and sampler)?	☑	☐
All containers received in good condition and within hold time?	☑	☐
All sample labels and containers received match the chain of custody?	☑	☐
Preservative added to any containers?	☐	☑
If received, was headspace for VOC water containers < 6mm?	☑	☐
Samples collected in containers provided by Pace Gulf Coast?	☑	☐

COOLERS

Airbill	Thermometer ID: E34	Temp °C
281950281590	✓	2.3

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Wor

Client ID: 4838 - AECOM

ALL SHAD

SDG: 221072417

PM: AEC

Container Preservative T

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Company: AECOM	Billing Information: Claire Mitchell 706-682-9098	
Address: 12420 Milestone Drive, Germantown	MD 20876	
Report To: NAOUM Tavantzis	Email To: naoum.tavantzis@aecom.com	
Copy To: Claire Mitchell	Site Collection Info/Address: ARNOLD CAMP SMITH	
Customer Project Name/Number: ARNOLD CAMP SMITH / 60552172-0006-518	State: NY County/City: Cortland Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET	
Phone: Email: 914-461-1178	Site/Facility ID #:	Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): John Hannan	Purchase Order #: Quote #: 104397	DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required:	Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)	Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	PFAS (LC/MS/MS DoD 5.3 Table B-15)	TOC + pH (EPA 9060A / 9045D)	Analyses	Lab Profile/Line:
~~CS-MW004S-SB-00-02~~	~~SO~~											
CS-MW004S-SB-02-04	SO	G	7-19-21	1115				1	X			1
CS-MW001S-SB-00-02	SO	G	7-20-21	1915				2	X	X		2
CS-MW001S-SB-00-02-D	SO	G	7-20-21	1315				2	X	X		3
CS-MW001D-SB-08-10	SO	G	7-20-21	1415				1	X			4
CS-MW004S-SB-00-02	SO	G	7-19-21	1100				1	X			5
CS-MW004S-GW-	WG	G	7-22-21	1350				2	X			6
CS-MW004S-GW-MS	WG	G	7-22-21	1360				2	X			7
CS-MW004S-GW-MSD	WG	G	7-22-21	1380				2	X			8
CS-ERB-01	WQ	G	7-22-21	1520				2	X			9

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips: _____	
Sample pH Acceptable	Y N NA
pH Strips: _____	
Sulfide Present	Y N NA
Lead Acetate Strips: _____	

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used: 5107 1703 8408

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2664195

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: _____
Cooler 1 Temp Upon Receipt: _____oC
Cooler 1 Therm Corr. Factor: _____oC
Cooler 1 Corrected Temp: _____oC
Comments:
4-3634 (<60cpm

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
John Hannan AECOM	7.22.21 1600	Transferred to FedEx	7.22.21 1600
Relinquished by/Company: (Signature)	Date/Time: 950 7/23/21	Received by/Company: (Signature)	Date/Time: 950 7/23/21
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Work

Client ID: 4838 - AECOM

SDG: 221040641

ALL SHAD

PM: AEC

Company: AECOM	Billing Information: AECOM 12420 Milestone Center Dr Germantown, MD 20876
Address: 12420 Milestone Center Dr	
Report To: Naoum Tavantzis	Email To: Naoum.Tavantzis@AECOM.com
Copy To: Amanda.Martin@AECOM.com	Site Collection Info/Address: Middletown, NY 40 Golf Links Rd
Customer Project Name/Number: Camp Smith ARNG SI	State: NY County/City: Middletown Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: Email: 917 461 1178	Site/Facility ID #: Compliance Monitoring? [ ] Yes [X] No
Collected By (print): J Christopher	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [X] No Analysis: _____

Container Preservative Ty: U

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses: PFAS (W)

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips: _____	
Sample pH Acceptable	Y N NA
pH Strips: _____	
Sulfide Present	Y N NA
Lead Acetate Strips: _____	

LAB USE ONLY:
Lab Sample # / Comments:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	PFAS (W)	Lab Sample #
CS-DECON-040521	WQ	G	4/5/21	1230				2	X	1

Customer Remarks / Special Conditions / Possible Hazards:

7855 9768 5938

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used: Supplied Bubble mail.

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2635878

Samples received via: FEDEX UPS Client Courier Pace Courier

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
AECOM	4/5/21 1400	FedEx - Pace FedEx #	4/5/21 1400
fedex	4/6/21 1000	Mark Jenkins	4/6/21 1000

MTJL LAB USE ONLY

Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Lab Sample Temperature Info:

Temp Blank Received: Y N NA
Therm ID#: _____
Cooler 1 Temp Upon Receipt: _____oC
Cooler 1 Therm Corr. Factor: _____oC
Cooler 1 Corrected Temp: _____oC
Comments:

3.6 E34 45cpm

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

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Client ID: 4838 - AECOM

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SDG: 221072807

PM: AEC

Company: AECOM	Billing Information: Claire Mitchell 706-682-9098
Address: 12420 Milestone Drive, Germantown	MD 20876
Report To: Naoum Tavantzis	Email To: naoum.tavantzis@aecom.com
Copy To: ClaireMitchell@aecom.com	Site Collection Info/Address: ARNG Camp Smith
Customer Project Name/Number: ARNG CampSmith/60552172-0006 SI2	State: NY County/City: Cortlandt Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: 919-461-1178 Email:	Site/Facility ID #:
Collected By (print): J. Norman	Purchase Order #: Quote #: 104397
Collected By (signature):	Turnaround Date Required:
Sample Disposal: [ ]Dispose as appropriate [ ]Return [ ]Archive: [ ]Hold:	Rush: [ ]Same Day [ ]Next Day [ ]2 Day [ ]3 Day [ ]4 Day [ ]5 Day (Expedite Charges Apply)
	Compliance Monitoring? [ ]Yes [ ]No
	DW PWS ID #: DW Location Code:
	Immediately Packed on Ice: [ ]Yes [ ]No
	Field Filtered (if applicable): [ ]Yes [ ]No Analysis:

Container Preservative Type

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	PFAS (Compliance QSM 5.3 Table B-15)	TEC + TPH (EPA 9060A/8015D)	Grain Size (ASTM D422/C4-55)	Lab Profile/Line:
CS-MW0020-SB-39-41	SO	G	7.23.21	1050				1	X			1
CS-MW0020-SB-62-63	SO	G	7.23.21	1130				1			X	2
AOI2-SB2-00-02	SO	G	7.24.21	1000				1	X			3
AOI2-SB2-02-04	SO	G	7.24.21	1010				1	X			4
AOI2-SB3-00/02	SO	G	7.24.21	1040				1	X			5
AOI2-SB3-02-04	SO	G	7.24.21	1050				1	X			6
AOI2-SB4-00-02	SO	G	7.24.21	1100				2	X	X		7
AOI2-SB4-0002-MS	SO	G	7.24.21	1100				1		X		8
AOI2-SB4-00-02-MSD	SO	G	7.24.21	1100				1		X		9
AOI2-SB5-00-02	SO	G	7.24.21	1125				1	X			10

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2641138

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: ____oC
Cooler 1 Therm Corr. Factor: ____oC
Cooler 1 Corrected Temp: ____oC
Comments: 0.3634 10cpm
5167 1709 8479

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 2

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
John Norman - AECOM	7-26-21 1230	Tom Kmet & FedEx	7.26.21 1230
Relinquished by/Company: (Signature)	Date/Time: 1030	Received by/Company: (Signature)	Date/Time: 1030
FedEx	7/27/21	MAK Hopkins	7/27/21
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

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Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

CHAIN-OF-CUSTODY Analytical Request Document

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Client ID: 4838 - AECOM

SDG: 221072807

PM: AEC

Container Preservative Ty

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Company: AECOM	Billing Information: Claire Mitchell 706-682-9048		
Address: 12420 Milestone Drive, Germantown,	MD 20876		
Report To: Naoum Tavantzis	Email To: naoum.tavantzis@aecom.com		
Copy To: Claire.Mitchell@aecom.com	Site Collection Info/Address: ARNG Camp Smith		
Customer Project Name/Number: ARNG Camp Smith/60552772-0006520	State: NY County/City: Cortlande	Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET	
Phone: Email: 919-461-1178	Site/Facility ID #:	Compliance Monitoring? [ ] Yes [ ] No	
Collected By (print): TJ Nyman	Purchase Order #: Quote #: 604397	DW PWS ID #: DW Location Code:	
Collected By (signature):	Turnaround Date Required:	Immediately Packed on Ice: [ ] Yes [ ] No	
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)	Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____	

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Clns	PFAS (Leidos QSM 5.3 Table B-15)	TCN pH (EPA 9010A/9012B)	Cl2 (ASTM D512/D4327)	Lab Profile/Line:
AOI2-SB4-02-04	SO	G	7.24.21	1110				1	X			11
AOI2-SB5-02-04	SO	G	7.24.21	1130				1	X	X		12
AOI2-SB5-02-04MS	SO	G	7.24.21	1130				1	X	X		13
AOI2-SB5-02-04MSD	SO	G	7.24.21	1130				1	X	X		14
CS-ERB-02	WQ	G	7.24.21	1145				2	X	X	X	15
CS-ERB-03	WQ	G	7.25.21	0845				2	X	X	X	16
CS-FRB-01	WQ	G	7.25.21	0845				2	X	X	X	17
CS-MW001S-GW	WG	G	7.24.21	1045				2	X	X	X	18
CS-MW001S-GW-D	WG	G	7.24.21	1045				2	X	X	X	19
CS-MW001D-GW	WG	G	7.24.21	1320				2	X	X	X	20

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips: _____	
Sample pH Acceptable	Y N NA
pH Strips: _____	
Sulfide Present	Y N NA
Lead Acetate Strips: _____	

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used: 5167 1703 8479

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2635752

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: _____
Cooler 1 Temp Upon Receipt: _____oC
Cooler 1 Therm Corr. Factor: _____oC
Cooler 1 Corrected Temp: _____oC
Comments: 0.3 E-21 10 cpm

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 2 of: 3

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
TJ Nyman/AECOM	7.26.21 1230	Courtesy of FedEx	7.26.21 1230
Relinquished by/Company: (Signature)	Date/Time: 1030	Received by/Company: (Signature)	Date/Time: 1030
Fedex	7/27/21	Mark Jenkins	7/27/21
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

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Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

CHAIN-OF-CUSTODY Analytical Request Document

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Client ID: 4838 - AECOM

SDG: 221072807

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PM: AEC

Container Preservative Type

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Company: AECOM	Billing Information: Claire Mitchell 706-682-9098
Address: 12420 Milestone Ave, Germantown MD 20876	
Report To: Naoum Tavantzis	Email To: Naoum.tavantzis@aecom.com
Copy To: Claire.Mitchell@aecom.com	Site Collection Info/Address: ARNG Camp Smith
Customer Project Name/Number: ARNG Camp Smith / 60552072-0006516	State: County/City: NY / Cortlandt Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: Email: 909-461-1178	Site/Facility ID #:
Collected By (print): T. S Norman	Purchase Order #: Quote #: 604397
Collected By (signature):	Turnaround Date Required:
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)
	Compliance Monitoring? [ ] Yes [ ] No
	DW PWS ID #: DW Location Code:
	Immediately Packed on Ice: [ ] Yes [ ] No
	Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	PFAS (ug/kg) (PFAS QSM 5.3 Table B-15)	TCLP pH (SW-846 9040/9045D)	Grain Size (ASTM D422/CA 5T)	Lab Sample # / Comments
CS-AECOM-072521	WQ	G	7.25.21	0915				2	X			21
CS-MW035-SB-40-42	SO	G	7.25.21	0955				2	X	X		22
CS-MW035-SB-40-42-D	SO	G	7.25.21	0955				1	X			23
CS-ST-045-072621	SO	G	7.26.21	1200				1	X		X	24

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips: _____	
Sample pH Acceptable	Y N NA
pH Strips: _____	
Sulfide Present	Y N NA
Lead Acetate Strips: _____	

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used: 5167 1703 8479

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2664196

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: _____
Cooler 1 Temp Upon Receipt: _____oC
Cooler 1 Therm Corr. Factor: _____oC
Cooler 1 Corrected Temp: _____oC
Comments:
0.3534 10cpm

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 3 of: 3

Relinquished by/Company: (Signature) John Norman - AECOM	Date/Time: 7.26.21 1230	Received by/Company: (Signature) Transferred to FedEx	Date/Time: 7.26.21 1230
Relinquished by/Company: (Signature) fedex	Date/Time: 7/27/21 1030	Received by/Company: (Signature) MARKJenkins	Date/Time: 7/27/21 1030
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

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Client ID: 4838 - AECOM

ALL SHAI

SDG: 221072979

PM: AEC

Company: AECOM	Billing Information: Claire Mitchell 706-682-9098
Address: 12420 Milestone Drive, Germantown MD 20876	
Report To: Naqun Tavantzis	Email To: Naqun.tavantzis@aecom.com
Copy To: Claire.Mitchell@aecom.com	Site Collection Info/Address: ARNG Camp Smith
Customer Project Name/Number: ARNG Camp Smith 60552172-000632	State: NY County/City: Cortlandt Time Zone Collected: [ ]PT [ ]MT [ ]CT [X]ET
Phone: Email: 919-461-1178	Site/Facility ID #:
Collected By (print): S. Christopher	Purchase Order #: Quote #: 164397
Collected By (signature):	Turnaround Date Required:
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)

Compliance Monitoring? [ ] Yes [ ] No

DW PWS ID #:

DW Location Code:

Immediately Packed on Ice: [X] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

Container Preservative Type: U

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: PFAS (Ltr/mrs 537.1 Table 3)	TOC + pH (EPA 9060A / 9045D)	Cyanide (ASTM D4282 / A-550)	Lab Profile/Line
CS-MW005 S-GW	WG	G	7/28/21	1148				2	2	1	1	1
CS-MW002D-GW	WG	G	7/28/21	930				2	2	1	1	2

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used: 2819 5028 1590

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2635746

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: ____oC
Cooler 1 Therm Corr. Factor: ____oC
Cooler 1 Corrected Temp: ____oC
Comments: 23534 25CAM

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 1

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
AECOM	7/28/21 1330	Transferred to FedEx	7/28/21 1330
FedEx	7-29-21 10:10	Dodie McClure	7-29-21 10:10

MTJL LAB USE ONLY

Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Data Qualifying Codes

Two types of data qualifying codes or flags are applied in the course of the data review. The data validation flags indicate data that are not usable for decision-making, more than normally biased and/or variable, or not representative of field conditions. These codes and their definitions are presented below in the hierarchy stipulated in the USEPA Contract Laboratory Program National Functional Guidelines for Organic (August 2014) Data Review and the USEPA Region III Guidelines for Organic (September 1994) for blank qualifications only.

Data Validation Flags

Flag	Interpretation
R	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
B	The analyte was analyzed for, but not detected at a level greater than or equal to the level of the adjusted Detection Limit (DL) for sample and method.
J+	Reported value may not be accurate or precise, but the result may be biased high.
J-	Reported value may not be accurate or precise, but the result may be biased low.
J	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the Limit of Detection (LOD).
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
UJ	The analyte was not detected at a level greater than or equal to the adjusted DL. However, the reported adjusted DL is approximate and may be inaccurate or imprecise.
C	This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by gas Chromatograph/Mass Spectrometer (GC/MS)
X	This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.

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Appendix B
Field Documentation

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Appendix B1
Logs of Daily Notice of Field Activities

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Log of Daily Notice of Field Activity
Site Inspection
Camp Smith Training Site, Cortlandt Manor, New York

Date	AECOM Personnel	Weather	Summary Daily Activities	Issues	Progress to Date	Subcontractor(s)/ Visitors
Mobilization 2						
8/2/2021	- Jim Christopher (SSHO) -Donald Phillips -Devon Hughes	Partly cloudy, winds Northeast at 2 to 5 mph, High 87°F, Low 68°F	- Upon arrival, AECOM checked in at the Main Gate with base personnel. - AECOM held a Tailgate SH&E meeting, reviewed scope of work, SSHP, AHAs, SH&E concerns, and COVID-19 - AECOM personnel surveyed all newly installed monitoring wells (PVC risers and casings). - AECOM personnel gauged water levels at all newly installed monitoring wells. - All AECOM staff mobilized offsite.	- None.	- Boring Locations: 8/8 - Monitoring Well Installation: 5/5 - Monitoring Well Development: 5/5 - Groundwater Samples: 5/5 - Soil Samples: 14/14 - IDW Solid Samples: 1/1* □	- Sean Martin, NYARNG
7/28/2021	- Jim Christopher (SSHO)	Mostly cloudy, winds North at 10 to 20 mph, High 84°F, Low 67°F	- Upon arrival, AECOM checked in at the Main Gate with base personnel. - AECOM held a Tailgate SH&E meeting with NYARNG; reviewed scope of work, SSHP, AHAs, SH&E concerns, COVID-19 precautions, and remaining demobilization activities. - Groundwater sampling was completed at CS-MW002D. - CTS demobilized the rig and trailer with equipment. - TAM Enterprises demobilized the PFAS-free water tanker. - One cooler with groundwater samples was shipped to the analytical laboratory for overnight delivery via FedEx.	- None.	- Boring Locations: 8/8 - Monitoring Well Installation: 5/5 - Monitoring Well Development: 5/5 - Groundwater Samples: 5/5 - Soil Samples: 14/14 - IDW Solid Samples: 1/1* □	- Sean Martin, NYARNG - Ben Grim, CTS - Rob Maillet, CTS
7/27/2021	- John Shannon (SSHO) - Jim Christopher - Max Meadows	Sunny, winds West at 5 to 10 mph, High 91°F, Low 70°F	- Upon arrival, AECOM checked in at the Main Gate with base personnel. - AECOM held a Tailgate SH&E meeting with NYARNG and CTS; reviewed scope of work, SSHP, AHAs, SH&E concerns, COVID-19 precautions, and demobilization. - Development was completed at CS-MW002D. - CTS installed a concrete road box at CS-MW002D. - Groundwater sampling completed at CS-MW003S. - CTS deconned equipment and supplies, disposed of trash, and loaded all equipment and supplies into the flat bed trailer for demobilization off site on Wednesday. - IDW drums were staged in the Conex box, clearly labeled and accessible. Photographs of the IDW staging area were taken.	- None.	- Boring Locations: 8/8 - Monitoring Well Installation: 5/5 - Monitoring Well Development: 5/5 - Groundwater Samples: 4/5 - Soil Samples: 14/14 - IDW Solid Samples: 1/1* □	- Sean Martin, NYARNG - Ben Grim, CTS - Rob Maillet, CTS

Log of Daily Notice of Field Activity
Site Inspection
Camp Smith Training Site, Cortlandt Manor, New York

Date	AECOM Personnel	Weather	Summary Daily Activities	Issues	Progress to Date	Subcontractor(s)/ Visitors
7/26/2021	- John Shannon (SSHO) - Jim Christopher - Max Meadows	Sun and clouds mixed, winds NW at 5 to 10 mph, High 89°F, Low 69°F	- Upon arrival, AECOM checked in at the Main Gate with base personnel. - AECOM held a Tailgate SH&E meeting with NYARNG and CTS; reviewed scope of work, SSHP, AHAs, SH&E concerns, COVID-19 precautions, and waste management/decontamination. - AECOM checked in at Range Control and received two radios for work in Range 1 & 5 areas. - R. Maillet (CTS) left site in the morning to pick up a new whale pump for well development and returned at around 1100. - CTS installed bollards (three per well) and concrete well pads at CS-MW004S and CS-MW001S/D and a concrete well road box at CS-MW003S. - Well development was completed at CS-MW003S. - Well development was started at CS-MW002D and will be continued tomorrow to remove the required volume. - One solid IDW sample (sediment in drum from drilling fluids) was collected associated with well CS-MW004S. - One cooler with soil and water samples was shipped to the analytical laboratory for overnight delivery via FedEx.	- None.	- Boring Locations: 8/8 - Monitoring Well Installation: 5/5 - Monitoring Well Development: 4/5 - Groundwater Samples: 3/5 - Soil Samples: 14/14 - IDW Solid Samples: 1/1* ** Only one solid IDW sample (sediment from drum) was collected because turbid drilling fluids were only generated at location CS-MW004S. Drilling fluids were not generated at the other monitoring well locations.*	- Jennifer Li, ARNG G9 - Sean Martin, NYARNG - Ben Grim, CTS - Rob Maillet, CTS
7/25/2021	- John Shannon (SSHO) - Jim Christopher	Overcast in the morning, a few afternoon clouds, winds light and variable, High 80°F, Low 60°F	- Upon arrival, AECOM checked in at the Main Gate with base personnel. - AECOM held a Tailgate SH&E meeting with NYARNG and CTS; reviewed scope of work, SSHP, AHAs, SH&E concerns, COVID-19 precautions, and traffic control. - AECOM checked in at Range Control and received a radio for work in Range 5 area (CS-MW001S/D). - CTS deconned the drill rods, and an ERB was taken on the drill bit. - A FRB was collected for the event. - An additional decontamination water sample was collected from the hose connected to the water tank on the drill rig (which was filled with the previously-tested water from the TAM Enterprises tank). - CTS completed drilling on CS-MW003S to 50 feet bgs. Groundwater was encountered at 40 feet bgs. The monitoring well installed at CS-MW003S, screened from 40-50 feet bgs. The boring was backfilled with sand filter pack from 38-50 feet bgs, bentonite seal from 36-38 feet bgs, and bentonite chips to 6 inches from the surface.	- Well development on CS-MW002D was started but then postponed due to the whale pump not functioning properly. The current plan is develop both CS-MW002D and CS-MW003S on Monday 7/26/21 with a repaired or replaced pump.	- Boring Locations: 8/8 - Monitoring Well Installation: 5/5 - Monitoring Well Development: 3/5 - Groundwater Samples: 3/5 - Soil Samples: 14/14 - IDW Solid Samples: 0/4 □	- Jennifer Li, ARNG G9 - Sean Martin, NYARNG - Ben Grim, CTS - Rob Maillet, CTS

Log of Daily Notice of Field Activity
Site Inspection
Camp Smith Training Site, Cortlandt Manor, New York

Date	AECOM Personnel	Weather	Summary Daily Activities	Issues	Progress to Date	Subcontractor(s)/ Visitors
7/24/2021	- John Shannon (SSHO) - Jim Christopher - Max Meadows	Sunshine in the morning, a few afternoon clouds, winds light and variable, High 84°F, Low 60°F	- Upon arrival, AECOM checked in at the Main Gate with base personnel. - AECOM held a Tailgate SH&E meeting with NYARNG and CTS; reviewed scope of work, SSHP, AHAs, SH&E concerns, COVID-19 precautions, and fatigue/complacency. - AECOM checked in at Range Control and received two radios for work in Range 5 area (CS-MW001S/D). - Groundwater sampling completed on CS-MW001S/D. - Concrete coring and the four hand auger soil borings below the parking lot of the Former Fire Station (AOI 2) completed to 4 feet below concrete. Soil samples were collected from 0-2 and 2-4 feet below concrete. Borings were backfilled with soil and topped off with cement to the surface. - An ERB was taken on the hand auger after soil sampling and decontamination. - CS-MW002D monitoring well installed screened from 90-110 feet bgs, as determined via discussion with the PDT (see "Issues" column). The boring was backfilled with bentonite from 115-140 feet bgs, sand filter pack from 88-115 feet bgs, bentonite seal from 86-88 feet bgs, and bentonite chips to 6 inches from the surface.	- Resolution was obtained among the PDT regarding the screen interval of CS-MW002D. The screen interval was set from 90-110 feet bgs (within overburden) to fall along the approximate linear pathway between AOI 2 and the screen intervals of downgradient potable Wells A/B, where there are known PFAS impacts. A 20-foot screen interval was used, rather than a 10-foot screen interval, to increase the likelihood of capturing the potential migration pathway. Additional details and rationale for this change will be documented in FCR-01. - Additionally, the PDT determined that CS-MW003D will be updated to ID CS-MW003S and will target the top of the shallow groundwater table . A 10-foot screen will be set to capture the groundwater interface. This will provide more vertical coverage in the area between the CS-MW002D and CS-MW003S. Additional details and rationale for this change will be documented in FCR-01. - AOI2-SB2 moved 2.5 feet to the west to maintain safe distance from overhead electrical lines.	- Boring Locations: 7/8 - Monitoring Well Installation: 4/5 - Monitoring Well Development: 3/5 - Groundwater Samples: 3/5 - Soil Samples: 13/14 - IDW Solid Samples: 0/4 □	- Sean Martin, NYARNG - Ben Grim, CTS - Rob Maillet, CTS
7/23/2021	- John Shannon (SSHO) - Jim Christopher - Max Meadows	Sunshine and clouds mixed, winds NNW at 5 to 10 mph, High 80°F, Low 62°F	- Upon arrival, AECOM checked in at the Main Gate with base personnel. - AECOM held a Tailgate SH&E meeting with NYARNG and CTS; reviewed scope of work, SSHP, AHAs, SH&E concerns, and COVID-19 precautions, and traffic control. - AECOM checked in at Range Control and received two radios for work in Range 1 (CS-MW004S) & Range 5 (CS-MW001S/D). - Monitoring well development was completed on CS-MW001S/D. - CS-MW002D was advanced to 140 feet bgs. Bedrock was not encountered. Groundwater was encountered at 41 feet bgs. A PFAS sample was taken at 39-41 feet bgs; a grain size analysis sample taken at 62-63 feet bgs in a clay seam. The team is in discussions to determine the appropriate screen interval (see issues).	- CS-MW002D was advanced to 140 feet bgs and bedrock was not encountered. The QAPP Addendum proposed that the boring would be advanced into the bedrock to assess potential impacts in the flow path between the potential release area (AOI 2) and downgradient potable Wells A and B. The target depth of the boring was the first instance of water-bearing fractures in competent rock. However, depth to bedrock is deeper than anticipated, and there is concern is that a well screen set at this depth or deeper may be too deep to capture the potential impacts in the flow path between AOI 2 and Wells A/B. An alternate well screen depth will be proposed to the project team for concurrence.	- Boring Locations: 3/8 - Monitoring Well Installation: 3/5 - Monitoring Well Development: 3/5 - Groundwater Samples: 1/5 - Soil Samples: 5/14 - IDW Solid Samples: 0/4 □	- Sean Martin, NYARNG - Ben Grim, CTS - Rob Maillet, CTS

Log of Daily Notice of Field Activity
Site Inspection
Camp Smith Training Site, Cortlandt Manor, New York

Date	AECOM Personnel	Weather	Summary Daily Activities	Issues	Progress to Date	Subcontractor(s)/ Visitors
7/22/2021	- John Shannon (SSHO) - Jim Christopher - Max Meadows	Partly cloudy in the morning, mostly cloudy in afternoon, winds NW at 5 to 10 mph, High 81°F, Low 62°F	- Upon arrival, AECOM checked in at the Main Gate with base personnel. - AECOM held a Tailgate SH&E meeting with NYARNG and CTS; reviewed scope of work, SSHP, AHAs, SH&E concerns, and COVID-19 precautions. - AECOM checked in at Range Control and received two radios for work in Range 1 (CS-MW004S) & Range 5 (CS-MW001S/D). - AECOM completed groundwater sampling at CS-MW004S. - AECOM completed the pump test from 25-30 feet bgs at CS-MW001S/D. Minimal drawdown was measured while pumping at ~1.75 gallons per minute and indicated the identified fracture set was suitable for future sampling. Two monitoring wells were installed: CS-MW001D was screened from 20-30 feet bgs (in bedrock) and CS-MW001S was screened from 7-17 feet bgs (in overburden). - An ERB was taken on the bladder pump after groundwater sampling and decontamination. - One cooler with soil and water samples was shipped to the analytical laboratory for overnight delivery via FedEx.	- None	- Boring Locations: 3/8 - Monitoring Well Installation: 3/5 - Monitoring Well Development: 1/5 - Groundwater Samples: 1/5 - Soil Samples: 4/14 - IDW Solid Samples: 0/4 □	- Sean Martin, NYARNG - Ben Grim, CTS - Rob Maillet, CTS
7/21/2021	- John Shannon (SSHO) - Jim Christopher - Max Meadows	Partly cloudy, winds NW at 5 to 10 mph, High 80°F, Low 65°F	- Upon arrival, AECOM checked in at the Main Gate with base personnel. - AECOM held a Tailgate SH&E meeting with NYARNG and CTS; reviewed scope of work, SSHP, AHAs, SH&E concerns, and COVID-19 precautions. - AECOM checked in at Range Control and received two radios for work in Range 1 (CS-MW004S) & Range 5 (CS-MW001S/D). - Monitoring well development was completed on CS-MW004S. - CS-MW001S/D was advanced to 30 feet bgs into fractured bedrock. The recovered core showed weathering and some iron staining, indicating water bearing fractures. AECOM will perform pump test tomorrow once the packer arrives onsite (see issues). - CTS started coring AOI2-SB2 but were unable to core into concrete (see issues).	- The drill rig experienced issues with the clamp pressure from 0800 until 1030. CTS repaired clamp issue and resumed drilling. - CTS did not have the required packer for the pump test at CS-MW001S/D. CTS will obtain a packer tonight and have it onsite tomorrow morning. - The CTS concrete corer was not able to drill through concrete at AOI 2 due to a dull bit; CTS will obtain a new bit overnight and have it onsite tomorrow morning.	- Boring Locations: 2/8 - Monitoring Well Installation: 1/5 - Monitoring Well Development: 1/5 - Groundwater Samples: 0/5 - Soil Samples: 4/14 - IDW Solid Samples: 0/4 □	- Sean Martin, NYARNG - Ben Grim, CTS - Rob Maillet, CTS
7/20/2021	- John Shannon (SSHO) - Jim Christopher - Max Meadows	Sunny, winds light and variable, High 88°F, Low 65°F	- Upon arrival, AECOM checked in at the Main Gate with base personnel. - AECOM held a Tailgate SH&E meeting with NYARNG and CTS; reviewed scope of work, SSHP, AHAs, SH&E concerns, and COVID-19 precautions. - AECOM checked in at Range Control and received two radios for work in Range 1 and Range 5. - CTS installed monitoring well CS-MW004S. (Development will occur no sooner than 24 hours.) - CTS mobilized rig to the CS-MW001S/D pair in AOI 1 and began drilling. AECOM collected soil samples for PFAS from 0-2 feet bgs and 8-10 feet bgs. The water table was encountered at 10 feet bgs. - CS-MW001S/D was drilled and cased down to 25 feet bgs by the end of the day.	- The drill rig was overheating from 1500-1520 while drilling. The rig stopped and allowed to cool before proceeding.	- Boring Locations: 2/8 - Monitoring Well Installation: 1/5 - Monitoring Well Development: 0/5 - Groundwater Samples: 0/5 - Soil Samples: 4/14 - IDW Solid Samples: 0/4 □	- Sean Martin, NYARNG - Ben Grim, CTS - Rob Maillet, CTS

Log of Daily Notice of Field Activity
Site Inspection
Camp Smith Training Site, Cortlandt Manor, New York

Date	AECOM Personnel	Weather	Summary Daily Activities	Issues	Progress to Date	Subcontractor(s)/ Visitors
7/19/2021	- John Shannon (SSHO) - Jim Christopher - Max Meadows	Cloudy skies early, then partly cloudy in the afternoon, winds NNW at 5 to 10 mph, High 81°F, Low 65°F	- Upon arrival, AECOM checked in at the Main Gate with base personnel. - AECOM held a Tailgate SH&E meeting with NYARNG and CTS; reviewed scope of work, SSHP, AHAs, and SH&E concerns. - AECOM checked in at Range Control and received one radio for communication while at CS-MW004S. - CTS unloaded equipment at the designated staging area and set-up a decon pad. - CTS completed drilling at CS-MW004S. AECOM collected soil samples for PFAS from 0-2 feet bgs and 7-9 feet bgs at CS-MW004S. The water table was encountered at 9 feet bgs; the well screen will be set from 7-17 feet bgs to straddle the water table in the overburden (construction will be completed tomorrow). - All personnel left the Range 1 area by 1615. Field supplies were returned to the conex box. - CTS left the site at 1630 and AECOM left the site by 1700.	- A pin-in clamp on the drill rig broke at about 1430. CTS was able to make a suitable repair and resumed removing rods from CS-MW004S at 1530.	- Boring Locations: 1/8 - Monitoring Well Installation: 0/5 - Monitoring Well Development: 0/5 - Groundwater Samples: 0/5 - Soil Samples: 2/14 - IDW Solid Samples: 0/4 □	- Sean Martin, NYARNG - Ben Grim, CTS - Rob Maillet, CTS
7/12/2021	- Jim Christopher	Cloudy in morning, Isolated thunderstorms in afternoon, High 78°F, Low 66°F	- Upon arrival, AECOM checked in at the Gate Guard and base personnel. - AECOM held a Tailgate SH&E meeting with NYARNG and ACS; reviewed scope of work, AHAs, SH&E concerns, and the SSHP. - Underground utility clearance was conducted and the exact placement of all sample locations/ wells was confirmed. - At AOI 1, CS-MW001S/D: no utilities were identified. An adjacent subsurface anomaly was identified that is likely a boulder considering position and local geology (glacial). - At AOI 2, AOI2-SB series: an unknown utility was identified in the general area, and the position of AOI2-SB4 moved 2 feet E. Other locations were shifted inches to avoid rebar. A concrete GPR unit was used to identify the precise location of rebar. The reinforcement appears to be wire mesh on a ~6" square grid. - At AOI 2, CS-MW002D: an electric line was present, and the position shifted ~14 feet SSW from the proposed location. - At AOI 3, CS-MW003D: multiple utilities were identified in the area, including a suspected electric duct bank, and the position was shifted ~13 feet SE of the proposed. - At AOI 3, CS-MW004S: an unknown utility was identified, likely a culvert discharge (growth too dense for further investigation), and the position shifted ~15 feet ENE of the proposed.	- None	- Boring Locations: 0/8 - Monitoring Well Installation: 0/5 - Monitoring Well Development: 0/5 - Groundwater Samples: 0/5 - Soil Samples: 0/14 - IDW Solid Samples: 0/4	- Sean Martin, NYARNG - Lorenzo Blanton, ACS Underground

Log of Daily Notice of Field Activity
Site Inspection
Camp Smith Training Site, Cortlandt Manor, New York

Date	AECOM Personnel	Weather	Summary Daily Activities	Issues	Progress to Date	Subcontractor(s)/ Visitors
7/8/2021	- Jim Christopher (SSHO)	Cloudy in morning, heavy rain in afternoon, High 79°F, Low 68°F	- Upon arrival, AECOM checked in at the Gate Guard and base personnel. - AECOM held a Tailgate SH&E meeting with NYARNG reviewed scope of work, AHAs, SH&E concerns, and the SSHP. - A site walk was conducted with AECOM and NYARNG to mark all sample/ well locations. - No changes were made to the designated sample locations except: 1) Location AOI 2-SB5 was shifted ~8 feet east to avoid working directly in a roadway; and 2) Location CS-MW002D was shifted ~4 feet S to avoid well placement at parking lot margin, where damage from plows is a greater potential. The adjusted sample locations meet the data quality objectives (DQOs). - At location CS-MW003D, multiple utilities were observed in the immediate work area: 3 water valve caps within 15 feet N; 1 storm drain ~50 feet SE; and 1 electrical utility manhole ~25 feet W. - Underground utility clearance will be conducted on Monday 7/12/21 and the exact placement of all sample locations/ wells will be confirmed at that time.	- Private utility clearance by ACS Underground was originally scheduled for 7/8/21 but was rescheduled to 7/12/21 due to inclement weather.	- Boring Locations: 0/9 - Monitoring Well Installation: 0/5 - Monitoring Well Development: 0/5 - Groundwater Samples: 0/5 - Soil Samples: 0/14 - IDW Solid Samples: 0/4	- Sean Martin, NYARNG - 1LT Steves Vanderpool, NYARNG

Log of Daily Notice of Field Activity
Site Inspection
Camp Smith Training Site, Cortlandt Manor, New York

Date	AECOM Personnel	Weather	Summary Daily Activities	Issues	Progress to Date	Subcontractor(s)/ Visitors
Mobilization 1						
12/12/2019	- Scott Kalemba (SS) - Robert Burns (SSHO)	Sunny, High 36°F, Low 23°F	- Upon arrival, AECOM, ARNG, and the NYSDEC checked in at the Gate Guard and base personnel. - AECOM held a Tailgate SH&E meeting with ARNG, and the NYSDEC. AECOM reviewed scope of work, AHAs, SH&E concerns, the SSHP, and daily PFAS sampling checklist. - Completed surface water/sediment sampling at CS-SD/SW01, CS-SD/SW02, CS-SD/SW03, CS-SD/SW04 and CS-SD/SW05. - Completed additional sediment sampling at CS-SD06, CS-SD07, and CS-SD08 as proposed as a solution to issues encountered on 12/10 and 12/11 regarding shallow groundwater and the inability to collect subsurface soil samples. ARNG and USACE approved this solution on 12/11. - The NYSDEC is collecting surface water samples concurrently with AECOM. - Location data were collected using a handheld GPS for the surface water and sediment sample locations. - AECOM surveyed the six boring locations. - One ERB was collected. - AECOM, the ARNG, and the NYSDEC demobilized from Camp Smith. -Two coolers of samples were packed and shipped to the analytical laboratory, GCAL, via FedEx for delivery on Friday 12/13/19.	- Groundwater was not encountered at AOI 2-SB1. As a result, the temporary well was abandoned per the SI QAPP and no additional monitoring wells were installed associated with this AOI, due to underlying shallow geology and hydrology at this location. This solution was approved by USACE.	- Boring Locations: 6/6 - Groundwater Samples: 5/6 - Soil Samples: 14/18 - Surface Water Samples: 5/5 - Sediment Samples: 5/5 (8/8) □	- Gerry Pratt, NYSDEC - Dan Lanners, NYSDEC - Sean Martin, NYARNG - Gregory Austin, NYARNG - Captain Pamela Hess, ARNG - Amanda Sullivan, ARNG
12/11/2019	- Scott Kalemba (SS) - Robert Burns (SSHO)	Snow early with periodic sun later, High 37°F, Low 19°F	- Upon arrival, AECOM, CTS, USACE, ARNG, and the NYSDEC checked in at the Gate Guard and base personnel. - AECOM held a Tailgate SH&E meeting with CTS, USACE, ARNG, and the NYSDEC. AECOM reviewed scope of work, AHAs, SH&E concerns, the SSHP, and daily PFAS sampling checklist. - Advanced soil borings and completed installing temporary wells at AOI 1-SB1, AOI 1-SB2, and AOI 1-SB3. - Completed groundwater sampling of temporary wells AOI 1-SB1, AOI 1-SB2, and AOI 1-SB3. - Completed surface water/sediment sampling at CS-SD/SW05. - The NYSDEC is collecting groundwater and surface water samples concurrently with AECOM. - Two ERBs were collected. - IDW was placed into 55-gallon steel drums. - Cascade broke down decontamination pad and demobilized from Camp Smith.	- Groundwater has not yet been encountered at AOI 2-SB1. The temporary well will be allowed to recharge for another 24 hours before sampling, though we understand that there is shallow underlying bedrock at this location, thus shallow groundwater likely does not occur here. In the case of no encountered groundwater on 12/12, the temporary well will be abandoned per the SI QAPP and no additional monitoring well will be installed associated with this AOI, due to underlying shallow geology and hydrology at this location. - Depth-to-water in soil boring AOI 1-SB3 was at 2.0 feet bgs. As a result, soil was sampled in two intervals (0.5-1 and 1-2 feet bgs) instead of three, as proposed in the SI QAPP. -Depth-to-water in soil boring AOI 1-SB2 was at 0.5 feet bgs. As a result, soil was sampled in one interval (0.5-1 feet bgs) instead of three, as proposed in the SI QAPP. As a result of these two issues at AOI 1, AECOM proposes that additional sediment samples will be taken at nearby surface water locations, upgradient and downgradient of AOI 1.	- Boring Locations: 6/6 - Groundwater Samples: 5/6 - Soil Samples: 14/18 - Surface Water Samples: 1/5 - Sediment Samples: 1/5	- Zachery Fordley, CTS - David Jaeger, CTS - Gerry Pratt, NYSDEC - Dan Lanners, NYSDEC - Sean Martin, NYARNG - Kim Berg, USACE - Captain Pamela Hess, ARNG - Amanda Sullivan, ARNG

Log of Daily Notice of Field Activity
Site Inspection
Camp Smith Training Site, Cortlandt Manor, New York

Date	AECOM Personnel	Weather	Summary Daily Activities	Issues	Progress to Date	Subcontractor(s)/ Visitors
12/10/2019	- Scott Kalemba (SS) - Robert Burns (SSHO)	Rain, High 55°F, Low 50°F	- CTS and NYSDEC personnel mobilized to Camp Smith Training Site for SI field work. - Upon arrival, AECOM, CTS, and the NYSDEC checked in at the Gate Guard and base personnel. - AECOM held a Tailgate SH&E meeting with CTS and the NYSDEC. AECOM reviewed scope of work, AHAs, SH&E concerns, the SSHP, and daily PFAS sampling checklist. - Cascade set up decontamination pad. - Advanced soil borings and completed installing temporary wells at AOI 2-SB1, AOI 3-SB1, and AOI 3-SB2. - Completed groundwater sampling of temporary wells AOI 3-SB1 and AOI 3-SB2. - The NYSDEC is collecting groundwater samples concurrently with AECOM. - One ERB was collected. - IDW was placed into 55-gallon steel drums.	- Refusal was encountered at AOI 2-SB1 at 26.50 feet bgs and groundwater has not yet been encountered. The temporary well was set at 26.50 feet bgs and will be allowed to recharge for 24 hours before sampling. - Depth-to-water in soil boring AOI 3-SB1 was at 2.5 feet bgs. As a result, soil was sampled in two intervals (0.5-1 and 1-2 feet bgs) instead of three, as proposed in the SI QAPP.	- Boring Locations: 3/6 - Groundwater Samples: 2/6 - Soil Samples: 8/18 - Surface Water Samples: 0/5 - Sediment Samples: 0/5	- Zachery Fordley, CTS - David Jaeger, CTS - Gerry Pratt, NYSDEC - Dan Lanners, NYSDEC - Sean Martin, NYARNG
12/9/2019	- Scott Kalemba (SS) - Robert Burns (SSHO)	Rain, High 46°F, Low 36°F	- AECOM and ACS personnel mobilized to Camp Smith Training Site for SI field work. - Upon arrival, AECOM checked in with the Gate Guard and base personnel. - AECOM held a Tailgate SH&E meeting with ACS. AECOM reviewed scope of work, AHAs, SH&E concerns, the SSHP, and daily PFAS sampling checklist. - Completed the private utility clearance for the six boring locations. - Performed site reconnaissance for the five SW/SD locations. - ACS personnel demobilized from the Site.	- None	- Boring Locations: 0/6 - Groundwater Samples: 0/6 - Soil Samples: 0/18 - Surface Water Samples: 0/5 - Sediment Samples: 0/5	- Robert Jackson, ACS

Log of Daily Notice of Field Activity
Site Inspection
Camp Smith Training Site, Cortlandt Manor, New York

Date	AECOM Personnel	Weather	Summary Daily Activities	Issues	Progress to Date	Subcontractor(s)/ Visitors

Notes
ACS = ACS Underground Solutions
AHA = activity hazard analysis
AOI = area of interest
ARNG = Army National Guard
bgs = below ground surface
CTS = Cascade Technical Services
DPT = direct push technology
E = east
ENE = east-northeast
ERB = equipment rinsate blank
FRB = field reagent blank
GPR = ground-penetrating radar
GPS = Global Positioning System
IDW = investigation-derived waste
N = north
NYSDEC = New York State Department of Environmental Conservation
PDT = Project Delivery Team
PFAS = per- and polyfluoroalkyl substances
PM = Project Manager
S = south
SE = southeast
SH&E = Safety, Health, and Environment
SS = Site Supervisor
SSHO = Site Safety and Health Officer
SSW = south-southwest
USACE = United States Army Corps of Engineers
W = west

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Appendix B2
Sampling Forms

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AECOM

Monitoring Well Sample Collection Form

LOCATION	Site: Camp Smith, NY	LocID: AOI 1-GW1	Date: 12/11/19
	Project Name: Camp Smith SI	Project Number: 60550172	Recorded By: SK Checked By:
EQUIPMENT	Sampling Equipment - Pump: Geopump Peristaltic	Controller: FA03009	Compressor: NA
	Water Level Indicator Type/ID#: WL-FA03140	Water Quality Meter Type: ~~YSI~~ Sonde ID: 19H102228	Handset ID: 19J103205
	PID Type/ID#: NA	Equipment Decon: Liquinox	
WELL & SAMPLING INFO	Description: 1" temp well	Screen Interval (BTOC): 15-20'	Initial Depth to Water (BTOC): 8.48
	Historic Pump Settings: NA		Pump Inlet Depth (BTOC): 17.50'
	Condition of Well/Comments: NA		Ambient PID (ppm): NA
	NOTE:		Well Head PID (ppm): NA

Date (MM/DD/YY)	Time (24 hr)	Depth to Water (BTOC)	Volume Removed (gallons)	Pumping Rate (Lpm)	Temp (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Pump Refill/ Discharge (seconds)	Pump Pressure (PSI)	Comment
12/11/19	1140	8.48	0.0	0.2	10.6	0.468	2.09	7.24	-461.2	>1100	—	—	Shake-test = -

Pumping Rate: ≤ 0.5L/min; **Measurements:** every 3 - 5 minutes; **Stabilization is defined as the following for three consecutive readings:** ± 3% Temp, ± 3% Conductivity; + 10% DO; ± 0.1 pH; ± 10mV ORP; 10% Turb

Sample ID Numbers and Sample Time	Container Count, Volume & Type	Preservative	Parameter(s)
AOI 1-GW1 collected @ 1130	2-125mL HDPE	None	PFAs by LCMSMS Table B-15.

Monitoring Well Sample Collection Form

LOCATION

Site: Camp Smith, NY
Project Name: Camp Smith SI
LocID: AOI 1-SB~~2~~ SK GW2
Project Number: 60552172
Date: 12/1/19
Recorded By: SK Checked By:

EQUIPMENT

Sampling Equipment - Pump: Geopump Peristaltic
Water Level Indicator Type/ID#: WL-FA03140
PID Type/ID#: NA
Controller: FA03009 Compressor: NA
Water Quality Meter Type: YSI Sonde ID: 19H102228 Handset ID: 19J103215
Equipment Decon: Liquinox

WELL & SAMPLING INFO

Description: 1" Temp Well
Screen Interval (BTOC): 0-5'
Initial Depth to Water (BTOC): 0.5'
Ambient PID (ppm): NA
Historic Pump Settings: NA
Pump Inlet Depth (BTOC): 2.50'
Well Head PID (ppm): NA
Condition of Well/Comments: NA
NOTE: MS/MSD Sample

Date (MM/DD/YY)	Time (24 hr)	Depth to Water (BTOC)	Volume Removed (gallons)	Pumping Rate (Lpm)	Temp (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Pump Refill/ Discharge (seconds)	Pump Pressure (PSI)	Comment
12/1/19	1235	~~0.0~~ NA 0.50'	0.0	0.2	7.4	0.270	8.98	7.74	217.0	>1100	<	—	ShakerTest = —

Pumping Rate: ≤ 0.5L/min; **Measurements:** every 3 - 5 minutes; **Stabilization is defined as the following for three consecutive readings:** ± 3% Temp, ± 3% Conductivity; + 10% DO; ± 0.1 pH; ± 10mV ORP; 10% Turb

Sample ID Numbers and Sample Time	Container Count, Volume & Type	Preservative	Parameter(s)
AOI 1-SB~~2~~ SK GW2 Collected @ 1225 AOI 1-SB~~2~~ SK GW2 MS/MSD	6-125mL HDPE	None	PFAS by LC/MS/MS Table B-15.

AECOM

Monitoring Well Sample Collection Form

LOCATION	Site: Camp Smith, NY	LocID: AOI 1-GW3	Date: 12/1/19	
	Project Name: Camp Smith, SI	Project Number: 60552172	Recorded By: SK	Checked By:
EQUIPMENT	Sampling Equipment - Pump: Geopump Peristaltic	Controller: FA03009	Compressor: NA	
	Water Level Indicator Type/ID#: Solinst FA03140	Water Quality Meter Type: YSI Sonde ID: 19H102228	Handset ID: 19J103215	
	PID Type/ID#: NA	Equipment Decon: Liquinox		
WELL & SAMPLING INFO	Description: 1" Temp Well	Screen Interval (BTOC): 0-5'	Initial Depth to Water (BTOC): 4.57	Ambient PID (ppm): NA
	Historic Pump Settings: NA		Pump Inlet Depth (BTOC): 5.00'	Well Head PID (ppm): NA
	Condition of Well/Comments: NA			
	NOTE:			

Date (MM/DD/YY)	Time (24 hr)	Depth to Water (BTOC)	Volume Removed (gallons)	Pumping Rate (Lpm)	Temp (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Pump Refill/ Discharge (seconds)	Pump Pressure (PSI)	Comment
12/1/19	0925	4.57	0.0	0.2	7.9	0.355	8.14	7.32	416.0	>1100	—	—	Shaker Test = —

Pumping Rate: ≤ 0.5L/min; **Measurements:** every 3 - 5 minutes; **Stabilization is defined as the following for three consecutive readings:** ± 3% Temp, ± 3% Conductivity; + 10% DO; ± 0.1 pH; ± 10mV ORP; 10% Turb

Sample ID Numbers and Sample Time	Container Count, Volume & Type	Preservative	Parameter(s)
AOI 1-GW3 Collected @ 0920	2-125mL HDPE	None	PFAs by Lemsas Table B-15.

AECOM

Monitoring Well Sample Collection Form

LOCATION

Site: Camp Smith, NY
LocID: AOI 3-GW1
Date: 12/10/19
Project Name: Camp Smith SI
Project Number: 60552172
Recorded By: SM Checked By:

EQUIPMENT

Sampling Equipment - Pump: Geopump Peristaltic
Controller: FA03009
Compressor: NA
Water Level Indicator Type/ID#: WL-FA03140
Water Quality Meter Type: YSI
Sonde ID: 19H102228
Handset ID: 19J103215
PID Type/ID#: NA
Equipment Decon: Liquinox

WELL & SAMPLING INFO

Description: 1" Temp Well
Screen Interval (BTOC): 0-5'
Initial Depth to Water (BTOC): 1.74
Ambient PID (ppm): NA
Historic Pump Settings: NA
Pump Inlet Depth (BTOC): 2.50'
Well Head PID (ppm): NA
Condition of Well/Comments: NA
NOTE: Duplicate Sample

Date (MM/DD/YY)	Time (24 hr)	Depth to Water (BTOC)	Volume Removed (gallons)	Pumping Rate (Lpm)	Temp (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Pump Refill/ Discharge (seconds)	Pump Pressure (PSI)	Comment
12/10/19	1500	1.74'	0.0	0.2	9.2	1.384	4.85	7.00	165.9	>1100	—	—	Shake Test: —

Pumping Rate: ≤ 0.5L/min; **Measurements:** every 3 - 5 minutes; **Stabilization is defined as the following for three consecutive readings:** ± 3% Temp, ± 3% Conductivity; + 10% DO; ± 0.1 pH; ± 10mV ORP; 10% Turb

Sample ID Numbers and Sample Time	Container Count, Volume & Type	Preservative	Parameter(s)
AOI 3-GW1 collected @ 1455 AOI 3-GW1DUP	4-125mL HDPE	None	PFAS by LCMSMS Table B-15

AECOM

Monitoring Well Sample Collection Form

LOCATION	Site: Camp Smith, NY	LocID: AOI 3-GW2		Date: 12/10/19	
	Project Name: Camp Smith SI	Project Number: 60552172		Recorded By: SK	Checked By:
EQUIPMENT	Sampling Equipment - Pump: Geopump Peristaltic		Controller: FA03009	Compressor: NA	
	Water Level Indicator Type/ID#: WL-FA03140	Water Quality Meter Type: YSI	Sonde ID: 19J103715	Handset ID: 19H102228	
	PID Type/ID#: NA	Equipment Decon: Liquinox			
WELL & SAMPLING INFO	Description: 1" Temp Well	Screen Interval (BTOC): 18-23	Initial Depth to Water (BTOC): 22.20'	Ambient PID (ppm): NA	
	Historic Pump Settings: NA		Pump Inlet Depth (BTOC): 23.00'	Well Head PID (ppm): NA	
	Condition of Well/Comments: NA				
	NOTE: Well ran dry. Took sample first, then geochem readings				

Date (MM/DD/YY)	Time (24 hr)	Depth to Water (BTOC)	Volume Removed (gallons)	Pumping Rate (Lpm)	Temp (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Pump Refill/ Discharge (seconds)	Pump Pressure (PSI)	Comment
12/10/19	1100	22.20'	0.0	0.2	12.7	0.184	8.10	7.36	122.4	>1100	—	—	Shaker Test =

Pumping Rate: ≤ 0.5L/min; **Measurements:** every 3 - 5 minutes; **Stabilization is defined as the following for three consecutive readings:** ± 3% Temp, ± 3% Conductivity; + 10% DO; ± 0.1 pH; ± 10mV ORP; 10% Turb

Sample ID Numbers and Sample Time	Container Count, Volume & Type	Preservative	Parameter(s)
AOI 3-GW2 Collected @ 1045	2-~~125~~ mL HDPE	None	PFAs by LCMS-MS Table B-15.

Surface Water and Sediment Sample Collection Form

Site: Camp Smith SI

Date: 12/12/19
Time: 0800
Staff: SK / RB

Loc ID: CS-SW/SD01
Northing:
Easting:

Site Conditions

Water depth (ft): 1'
Channel width (ft): Unknown
Flowing: (Yes) / No Slightly

Notes (not covered in Habitat Form):

Boggy location.

Field Data

Meter Type: YSI Pro DSS
Meter ID: FA04234

Water Quality Parameters:	Middle of Water Column
Measurement Depth (ft)	8"
Temperature (deg. C)	2.9
Sp. Conductance (uS/cm)	0.113
Dissolved Oxygen (mg/L)	7.53
Dissolved Oxygen (% sat)	~~2.89~~ 58.0
pH (S.U.)	~~5.84~~ 6.25
Turbidity	21.06
ORP	235.6

Surface water sample collection:

circle if collected: FD MS/MSD

Sample ID: CS-SW01
Sample Time: 0830
Type of Sample: (Grab) / Pump / Other
Sample depth (inches):
No. of samples collected: 1
No. of samples rejected: 0 Rationale:
Analyses Collected: PFAS by LCMSMS Table B-15

Sheen: Yes / (No) Odor: Yes / (No)

Notes (not covered in Habitat Form):

Sediment collection:

circle if collected: FD MS/MSD

Sample ID: CS-SD01-0-1
Sample Time: 0835
Core penetration depth (inches): 12"
Number of cores collected: 3
Number of cores rejected: 0 Rationale:
Analyses Collected: PFAS by LCMSMS Table B-15

Sheen: Yes / (No) Odor: (Yes) / No

Notes and material description (include sediment type, texture color, layering, entrained debris, biota):

Sandy Silt, Brown, Saturated, non-plastic, Very Soft, organics (roots, wood debris)

Decomposition odor

Surface Water and Sediment Sample Collection Form

Site: Camp Smith SI

Date: 12/12/19
Time: 0930
Staff: SK/RB

Loc ID: ~~AO~~ SK CS-SW/SD02
Northing:
Easting:

Site Conditions

Water depth (ft): 12" → 1'
Flowing: (Yes) / No
Channel width (ft): NA - Unknown
Notes (not covered in Habitat Form):

Field Data

Meter Type: YSI Pro DSS
Meter ID: FA04234

Water Quality Parameters:	Middle of Water Column
Measurement Depth (ft)	8"
Temperature (deg. C)	2.9
Sp. Conductance (uS/cm)	0.100
Dissolved Oxygen (mg/L)	100%
Dissolved Oxygen (% sat)	13.51
pH (S.U.)	6.61
Turbidity	9.17
ORP	326.9

Surface water sample collection:

circle if collected: FD MS/MSD

Sample ID: CS-SW02
Sample Time: 0940
Type of Sample: (Grab) / Pump / Other
Sample depth (inches): 8"
No. of samples collected: 1
No. of samples rejected: 0
Rationale:
Analyses Collected: PFAS by LCMSMS Table B-15.

Sheen: Yes / (No)
Odor: Yes / (No)
Notes (not covered in Habitat Form):

Fast moving stream/river.

Sediment collection:

circle if collected: FD MS/MSD

Sample ID: CS-SD02-0-1
Sample Time: 0945
Core penetration depth (inches): 12
Number of cores collected: 8
Number of cores rejected: 0
Rationale:
Analyses Collected: PFAS by LCMSMS Table B-15

Sheen: Yes / (No)
Odor: Yes / (No)
Notes and material description (include sediment type, texture color, layering, entrained debris, biota):

Silty Sand, some clay, Brown, Loose, Saturated, poorly-graded
Some organic debris (very wooded debris and leaves)

Surface Water and Sediment Sample Collection Form

Site: Camp Smith SI

Date: 12/12/19
Time: 1025
Staff: SR / RB

Loc ID: CS-SD/SW03
Northing:
Easting:

Site Conditions

Water depth (ft): 12" Flowing: (Yes) / No
Channel width (ft): Unknown
Notes (not covered in Habitat Form):

Field Data Meter Type: YSI Pro DSS Meter ID: E404234

Water Quality Parameters:	Middle of Water Column
Measurement Depth (ft)	8"
Temperature (deg. C)	1.0°C
Sp. Conductance (uS/cm)	0.034
Dissolved Oxygen (mg/L)	13.77
Dissolved Oxygen (% sat)	96.8%
pH (S.U.)	6.26
Turbidity	5.06
ORP	372.1

Surface water sample collection: circle if collected: FD MS/MSD

Sample ID: CS-SW03
Sample Time: 1040
Type of Sample (Grab) / Pump / Other
Sample depth (inches): 8"
No. of samples collected: 1
No. of samples rejected: 0 Rationale:
Analyses Collected: PFAS by LCMSMS Table B-15

Sheen Yes / (No) Odor Yes / (No)
Notes (not covered in Habitat Form):

Sediment collection: circle if collected: FD MS/MSD

Sample ID: CS-SD03-0-1
Sample Time: 1050
Core penetration depth (inches): 12"
Number of cores collected: 4
Number of cores rejected: 0 Rationale:
Analyses Collected: PFAS by LCMSMS Table B-15.

Sheen Yes / (No) Odor Yes / (No)
Notes and material description (include sediment type, texture color, layering, entrained debris, biota):
Silt, yellowish orange, non-plastic, soft, saturated, trace sand and clay, few organics.

Surface Water and Sediment Sample Collection Form

Site: Camp Smith SI

Date: 12/12/19
Time: 1110
Staff: SM / RB

Loc ID: CS-SW/SD04
Northing:
Easting:

Site Conditions

Water depth (ft): 12"
Flowing: (Yes) / No
Channel width (ft): Unknown
Notes (not covered in Habitat Form):

Field Data

Meter Type: YSI Pro DSS
Meter ID: FA 04234

Water Quality Parameters:	Middle of Water Column
Measurement Depth (ft)	8"
Temperature (deg. C)	9.8
Sp. Conductance (uS/cm)	0.083
Dissolved Oxygen (mg/L)	13.14
Dissolved Oxygen (% sat)	~~91.8~~ 97.1
pH (S.U.)	6.66
Turbidity	4.34
ORP	364.2

Surface water sample collection:

circle if collected: FD MS/MSD

Sample ID: CS-SW04
Sample Time: 1130
Type of Sample: (Grab) / Pump / Other
Sample depth (inches): 8"
No. of samples collected: 1
No. of samples rejected: 0
Rationale:
Analyses Collected: PFAS by LCMSMS Table B-15.

Sheen: Yes / (No)
Odor: Yes / (No)
Notes (not covered in Habitat Form):

Fast moving stream/river.

Sediment collection:

circle if collected: FD MS/MSD

Sample ID: CS-SD04-0-1
Sample Time: 1130
Core penetration depth (inches): 12"
Number of cores collected: 10
Number of cores rejected: 0
Rationale:
Analyses Collected: PFAS by LCMSMS Table B-15.

Sheen: Yes / (No)
Odor: Yes / (No)
Notes and material description (include sediment type, texture color, layering, entrained debris, biota):

Sandy Silt, trace clay, Lt. Gray, Saturated, non-plastic
Organic Debris (wooded debris

Surface Water and Sediment Sample Collection Form

Site: Camp Smith SI

Date: 12/11/19
Time: 1510
Staff: SK/RB

Loc ID: ~~AOI~~ SK CS-SD/SW05
Northing:
Easting:

Site Conditions

Water depth (ft): 12" (1')
Flowing: Yes / No
Channel width (ft): Unknown
Notes (not covered in Habitat Form):

Steep valley walls.

Field Data

Meter Type: YSI Pro DSS
Meter ID: FA04234

Water Quality Parameters:	Middle of Water Column
Measurement Depth (ft)	8"
Temperature (deg. C)	4.0
Sp. Conductance (uS/cm)	0.107
Dissolved Oxygen (mg/L)	13.02
Dissolved Oxygen (% sat)	99.4
pH (S.U.)	7.63
Turbidity	42.96
ORP	259.7

Surface water sample collection:

circle if collected: FD MS/MSD

Sample ID: CS-SW05
Sample Time: 1525
Type of Sample: Grab / Pump / Other
Sample depth (inches): 8"
No. of samples collected: 1
No. of samples rejected: 0
Rationale:
Analyses Collected: PFAS by LCMSMS Table B-15.

Sheen: Yes / No
Odor: Yes / No
Notes (not covered in Habitat Form):

Fast moving river/stream

Sediment collection:

circle if collected: FD MS/MSD

Sample ID: CS-SD05-0-1
Sample Time: 1540
Core penetration depth (inches): ~~3"~~ 12"
Number of cores collected: 10
Number of cores rejected: 0
Rationale:
Analyses Collected: PFAS by LCMSMS Table B-15.

Sheen: Yes / No
Odor: Yes / No
Notes and material description (include sediment type, texture color, layering, entrained debris, biota):

Silty Sand, Brown, organic debris (roots, Leaves, wooded debris) Gravel/Cobble/Boulders sitting on top.

Surface Water and Sediment Sample Collection Form

Site: Camp Smith SI

Date: 12/12/19
Time: 1210
Staff: SK / RB

Loc ID: CS-SD06
Northing:
Easting:

Site Conditions

Water depth (ft): 12"
Flowing: (Yes) / No
Channel width (ft): Unknown
Notes (not covered in Habitat Form):

Field Data

Meter Type: Meter ID:

Water Quality Parameters:	Middle of Water Column
Measurement Depth (ft)	
Temperature (deg. C)	
Sp. Conductance (uS/cm)	
Dissolved Oxygen (mg/L)	
Dissolved Oxygen (% sat)	
pH (S.U.)	
Turbidity	
ORP	

Surface water sample collection:

circle if collected: FD MS/MSD

Sample ID:
Sample Time:
Type of Sample: Grab / Pump / Other
Sample depth (inches):
No. of samples collected:
No. of samples rejected: Rationale:
Analyses Collected:

Sheen: Yes / No Odor: Yes / No
Notes (not covered in Habitat Form):

Soil Only Sample. Taken adjacent to AOI 1-SB3.

Sediment collection:

circle if collected: FD MS/MSD

Sample ID: CS-SD06-0-1
Sample Time: 1215
Core penetration depth (inches): 12"
Number of cores collected: 5
Number of cores rejected: 0 Rationale:
Analyses Collected: PFAS by LCMSMS Table B-15.

Sheen: Yes / (No) Odor: Yes / (No)
Notes and material description (include sediment type, texture color, layering, entrained debris, biota):

Gravelly Sand, Trace Silt, Coarse, Very loose, Lt. Brown, Saturated

Surface Water and Sediment Sample Collection Form

Site: Camp Smith SI

Date: 12/12/19
Time: 1230
Staff: SK / RB

Loc ID: CS-SD07
Northing:
Easting:

Site Conditions

Water depth (ft): 12"
Flowing: (Yes) / No
Channel width (ft): UnKnown
Notes (not covered in Habitat Form):

Field Data

Meter Type: Meter ID:

Water Quality Parameters:	Middle of Water Column
Measurement Depth (ft)	
Temperature (deg. C)	
Sp. Conductance (uS/cm)	
Dissolved Oxygen (mg/L)	
Dissolved Oxygen (% sat)	
pH (S.U.)	
Turbidity	
ORP	

Surface water sample collection: circle if collected: FD MS/MSD

Sample ID:
Sample Time:
Type of Sample: Grab / Pump / Other
Sample depth (inches):
No. of samples collected:
No. of samples rejected: Rationale:
Analyses Collected:

Sheen: Yes / No Odor: Yes / No
Notes (not covered in Habitat Form):

Soil Sampling Only. Taken adjacent to AOI 1-SB2

Sediment collection: circle if collected: FD MS/MSD

Sample ID: CS-SD07-01
Sample Time: 1235
Core penetration depth (inches): 12"
Number of cores collected: 3
Number of cores rejected: 0 Rationale:
Analyses Collected: PFAS by Isotope Table B-15.

Sheen: Yes / (No) Odor: Yes / (No)
Notes and material description (include sediment type, texture color, layering, entrained debris, biota):

Sandy Silt, non-plastic, Lt. Brown, Saturated, very soft
Plenty of organics (roots, wooded debris)

Surface Water and Sediment Sample Collection Form

Site: Camp Smith SI

Date: 12/12/19
Time: 1300
Staff: SK / RB

Loc ID: CS-SD08
Northing:
Easting:

Site Conditions

Water depth (ft): 12"
Flowing: (Yes) / No
Channel width (ft): Unknown
Notes (not covered in Habitat Form):

Field Data

Meter Type: _____ Meter ID: _____

Water Quality Parameters:	Middle of Water Column
Measurement Depth (ft)	
Temperature (deg. C)	
Sp. Conductance (uS/cm)	
Dissolved Oxygen (mg/L)	
Dissolved Oxygen (% sat)	
pH (S.U.)	
Turbidity	
ORP	

Surface water sample collection: circle if collected: FD MS/MSD

Sample ID:
Sample Time:
Type of Sample: Grab / Pump / Other
Sample depth (inches):
No. of samples collected:
No. of samples rejected: Rationale:
Analyses Collected:

Sheen: Yes / No Odor: Yes / No
Notes (not covered in Habitat Form):

Soil Sample Only. Taken Adjacent to AOI 3-SB1

Sediment collection: circle if collected: FD MS/MSD

Sample ID: CS-SD08-0-1
Sample Time: 1320
Core penetration depth (inches): 12"
Number of cores collected: 4
Number of cores rejected: 0 Rationale:
Analyses Collected: PFAs by LCMSMS Table B-15.

Sheen: Yes / (No) Odor: (Yes) / No
Notes and material description (include sediment type, texture color, layering, entrained debris, biota):

Sandy Silt, Black, Very Soft, non-Plastic, saturated, decomposition odor
Organic debris (roots, wooded debris)

AECOM

Monitoring Well Sample Collection Form

LOCATION	Site: Camp Smith	LocID: CS-MW0045	Date: 7/22/21
	Project Name: ARNG PFAS Camp Smith, NY 55	Project Number: 60552172/006-SI8	Recorded By: mm Checked By: mm
EQUIPMENT	Sampling Equipment - Pump: Sample Pro QED	Controller: QED MP50	Compressor: QED MP50
	Water Level Indicator Type/ID#: Heron Skinny Dipper	Water Quality Meter Type: YSI Cox Sonde ID: 25503	Handset ID: 8975
	PID Type/ID#: —	Equipment Decon: ASTM Type II + Alconox	
WELL & SAMPLING INFO	Description: Bladder Pump Sampling	Screen Interval (BTOC): 10.00-20.00	Initial Depth to Water (BTOC): 8.50 Ambient PID (ppm): —
	Historic Pump Settings: 4 cpm, 3 sec discharge, 12 sec refill, 15 psi		Pump Inlet Depth (BTOC): 17.00 Well Head PID (ppm): —
	Condition of Well/Comments: Landscaped		Height of stick-up (ft): ~3.0
	NOTE: MS/MSD. Sampled @ 1350. Final turbidity 133 NTU Foam test: Negative		

Date (MM/DD/YY)	Time (24 hr)	Depth to Water (BTOC)	Volume Removed (gallons)	Pumping Rate (Lpm)	Temp (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Pump Refill/ Discharge (seconds)	Pump Pressure (PSI)	Comment
7/22/21	1320	8.50		0.150	15.62	0.650	5.33	7.95	91.3	673	3/12	15	Drawdown major
	1325	9.25		0.070	16.55	0.617	5.61	7.94	87.1	436			concern. parameters
	1330	9.94		"	17.09	0.604	5.74	7.85	91.9	281			stable (besides
	1335	10.50		"	17.80	0.604	5.75	7.79	96.8	208			turbidity)
	1340	10.78		"	18.10	0.603	5.71	7.75	99.9	177			
	1345	11.20		"	18.47	0.603	5.73	7.71	99.8	145			~~Finish~~ Finish

Pumping Rate: ≤ 0.5L/min; **Measurements:** every 3 - 5 minutes; **Stabilization is defined as the following for three consecutive readings:** ± 3% Temp, ± 3% Conductivity; + 10% DO; ± 0.1 pH; ± 10mV ORP; 10% Turb

Sample ID Numbers and Sample Time	Container Count, Volume & Type	Preservative	Parameter(s)
CS-MW0045-GW CS-MW0045-GW-MS @1350 CS-MW0045-GW-MSD	2 x 125 mL HDPE	—	PFAS
	"	—	"
		—	

AECOM

Monitoring Well Sample Collection Form

LOCATION	Site: Camp Smith	LocID: CS-MW0015	Date: 7/24/21
	Project Name: ARNG PFAS Camp Smith, NY SSI	Project Number: 60552172 / ODC II-8	Recorded By: MM Checked By: MM
EQUIPMENT	Sampling Equipment - Pump: Sample Pro QED	Controller: QED MP50	Compressor: QED MP50
	Water Level Indicator Type/ID#: Heron Skinny Dipper	Water Quality Meter Type: YSI Pro Sonde ID: 25503	Handset ID: 8975
	PID Type/ID#: —	Equipment Decon: ASTM Type II + Alconox	
WELL & SAMPLING INFO	Description: Bladder pump sampling	Screen Interval (BTOC): 19.85-9.85	Initial Depth to Water (BTOC): 10.90
	Historic Pump Settings: 4 CPM, 3 sec Discharge, 12 sec refill, 18 PSI		Pump Inlet Depth (BTOC): 14.85
	Condition of Well/Comments: Uneven ground		Height of stick-up (ft): ~ 3 ft
	NOTE: Duplicate sample collected Foam Test: Negative		Ambient PID (ppm): — Well Head PID (ppm): —

Date (MM/DD/YY)	Time (24 hr)	Depth to Water (BTOC)	Volume Removed (gallons)	Pumping Rate (Lpm)	Temp (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Pump Refill/ Discharge (seconds)	Pump Pressure (PSI)	Comment
7/24/21	0920	10.91		0.200	15.35	0.186	4.32	5.61	6.2	230	12/3	18	
	0925	10.91			15.22	0.181	4.01	5.57	6.4	195			
	0930	10.91			15.18	0.178	3.87	5.54	6.9	160			
	0935	10.91			15.14	0.176	3.77	5.54	7.7	147			
	0940	10.91			15.11	0.174	3.71	5.54	8.6	123			
	0945	10.91			15.13	0.172	3.61	5.55	10.5	99.1			
	0950	10.91			15.13	0.170	3.55	5.55	10.8	71.6			
	0955	10.91			15.11	0.169	3.56	5.56	11.5	44.8			
	1000	10.91			15.17	0.168	3.56	5.55	12.0	38.7			
	1005	10.91			15.14	0.168	3.46	5.56	12.2	32.9			
	1010	10.91			15.11	0.168	3.45	5.56	12.7	24.9			

Pumping Rate: ≤ 0.5L/min; **Measurements:** every 3 - 5 minutes; **Stabilization is defined as the following for three consecutive readings:** ± 3% Temp, ± 3% Conductivity; + 10% DO; ± 0.1 pH; ± 10mV ORP; 10% Turb

Sample ID Numbers and Sample Time	Container Count, Volume & Type	Preservative	Parameter(s)
CS-MW0015-GW @1045	2 x 125 mL HDPE	—	PFAS
CS-MW0015-GW-D @1045	〃	—	〃

AECOM

Monitoring Well Sample Collection Form

LOCATION	Site: Camp Smith	LocID: CS-MW00 15	Date: 7/24/21
	Project Name: ARNG PFAS Camp Smith NY 05[illegible]	Project Number: 60552172/000 SI-8	Recorded By: MMM Checked By: MM

Date (MM/DD/YY)	Time (24 hr)	Depth to Water (BTOC)	Volume Removed (gallons)	Pumping Rate (Lpm)	Temp (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Pump Refill/ Discharge (seconds)	Pump Pressure (PSI)	Comment
7/24/21	1015	10.91		0.200	15.12	0.168	3.45	5.57	13.4	22.6	12/3	18	
	1020	10.91			15.14	0.167	3.40	5.57	15.3	19.8			
	1025	10.91			15.23	0.166	3.40	5.57	15.9	17.7			
	1030	10.91			15.32	0.166	3.40	5.57	16.3	15.0			
	1035	10.91			15.32	0.166	3.37	5.57	17.1	13.0			
	1040	10.91			15.30	0.165	3.33	5.58	17.7	10.6			
	1045	10.91	~4.75		15.33	0.165	3.35	5.57	17.9	8.43			

Pumping Rate: ≤ 0.5L/min; **Measurements:** every 3 - 5 minutes; **Stabilization is defined as the following for three consecutive readings:** ± 3% Temp, + 3% Conductivity; + 10% DO; + 0.1 pH; + 10mV ORP; 10% Turb

Monitoring Well Sample Collection Form

AECOM

LOCATION	Site: Camp Smith	LocID: CS-MW001D	Date: 7/24/21	
	Project Name: ARNG-PFAS Camp Smith NY 551	Project Number: 60552172/00C-SI 8	Recorded By: MM	Checked By: MM
EQUIPMENT	Sampling Equipment - Pump: Sample Pro QED	Controller: QED MP50	Compressor: QED MP50	
	Water Level Indicator Type/ID#: Heron Skinny Dipper	Water Quality Meter Type: YSI 600XL Sonde ID: 25503	Handset ID: 8975	
	PID Type/ID#: -	Equipment Decon: ASTM Type II + ~~EX~~ Alconox		
WELL & SAMPLING INFO	Description: Bladder Pump Sampling	Screen Interval (BTOC): 32-22	Initial Depth to Water (BTOC): 10.91	Ambient PID (ppm): -
	Historic Pump Settings: 4 CPM, 3 sec discharge, 12 sec refill		Pump Inlet Depth (BTOC): 27.00	Well Head PID (ppm): -
	Condition of Well/Comments: uneven ground		Height of stick-up (ft): ~3 ft	
	NOTE: Foam test: Negative. No drawdown on shallow well while pumping deep well			

Date (MM/DD/YY)	Time (24 hr)	Depth to Water (BTOC)	Volume Removed (gallons)	Pumping Rate (Lpm)	Temp (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Pump Refill/ Discharge (seconds)	Pump Pressure (PSI)	Comment
7/24/21	1120	10.91		0.200	15.45	0.407	7.36	6.36	-64.5	805	12/3	20	
	1125	10.97			15.32	0.413	5.67	6.53	-94.3	504			
	1130	10.97			15.29	0.415	4.87	6.66	-111.4	659			
	1135	10.97			15.41	0.415	4.44	6.75	-121.3	575			
	1140	10.97			15.37	0.412	4.19	6.79	-127.8	511			
	1145	10.97			15.34	0.411	3.58	6.83	-132.9	473			
	1150	10.97			15.32	0.407	3.62	6.86	-137.6	405			
	1155	10.97			15.28	0.405	3.71	6.86	-136.5	312			
	1200	10.97			15.37	0.400	3.45	6.86	-137.1	284			
	1205	10.97			15.41	0.392	3.46	6.84	-135.1	207			
	1210	10.97			15.29	0.381	3.52	6.82	-133.4	188			

Pumping Rate: ≤ 0.5L/min; **Measurements:** every 3 - 5 minutes; **Stabilization is defined as the following for three consecutive readings:** ± 3% Temp, ± 3% Conductivity; + 10% DO; ± 0.1 pH; ± 10mV ORP; 10% Turb

Sample ID Numbers and Sample Time	Container Count, Volume & Type	Preservative	Parameter(s)
CS-MW001D-GW @ 1320	2 x 125 mL HDPE	-	PFAS

AECOM

Monitoring Well Sample Collection Form

LOCATION	Site: Camp Smith	LocID: CS-MW001D	Date: 7/24/21
	Project Name: ARNG-DFAS Camp Smith, NS SSI	Project Number: 60552172/000-SI 8	Recorded By: NLL Checked By: ANW

Date (MM/DD/YY)	Time (24 hr)	Depth to Water (BTOC)	Volume Removed (gallons)	Pumping Rate (Lpm)	Temp (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Pump Refill/ Discharge (seconds)	Pump Pressure (PSI)	Comment
7/24/21	1215	10.97		0.200	15.27	0.372	3.49	6.80	-131.1	96.8	12/3	20	
	1220	10.97			15.12	0.361	3.58	6.77	-130.0	72.1			
	1225	10.97			15.02	0.367	3.68	6.76	-128.9	58.6			
	1230	10.97			15.00	0.346	3.77	6.74	-126.7	39.9			
	1235	10.97			14.98	0.337	3.95	6.73	-125.0	34.0			
	1240	10.97			15.02	0.327	4.15	6.72	-122.3	29.2			
	1245	10.97			14.95	0.321	4.33	6.71	-120.5	24.6			
	1250	10.97			14.95	0.314	4.82	6.70	-118.0	22.6			
	1255	10.97			14.95	0.306	4.99	6.69	-115.6	20.3			
	1300	10.97			14.94	0.303	5.21	6.68	-113.2	18.5			
	1305	10.97			14.91	0.299	5.18	6.66	-110.3	16.9			
	1310	10.97			14.91	0.294	5.39	6.66	-107.7	15.4			
	1315	10.97			14.88	0.291	5.58	6.65	-105.3	111.2			
	1320	10.97	~4.5		14.85	0.288	5.66	6.64	-104.7	13.6			

Pumping Rate: ≤ 0.5L/min; **Measurements:** every 3 - 5 minutes; **Stabilization is defined as the following for three consecutive readings:** ± 3% Temp, + 3% Conductivity; + 10% DO; + 0.1 pH; + 10mV ORP; 10% Turb

Monitoring Well Sample Collection Form

AECOM

LOCATION	Site: Camp Smith	LocID: CS-MW0035	Date: 7/27/24
	Project Name: ARNG PFAS Camp Smith, NY SSI	Project Number: 60552172/0065-8	Recorded By: MM Checked By: MM
EQUIPMENT	Sampling Equipment - Pump: QED Micropurge	Controller: QED MP50	Compressor: QED MP50
	Water Level Indicator Type/ID#: Heron Skinny Dipper	Water Quality Meter Type: YSI 600XL Sonde ID: 25503	Handset ID: 8975
	PID Type/ID#: —	Equipment Decon: ASTM Type II + Alconox	
WELL & SAMPLING INFO	Description: Bladder Pump sampling	Screen Interval (BTOC): 40 - 50	Initial Depth to Water (BTOC): 38.11
	Historic Pump Settings: 4 CPM, 8 sec refill, 7 sec recharge, 75 psi	Pump Inlet Depth (BTOC): 44	Ambient PID (ppm): —
	Condition of Well/Comments: Flush Mount	Height of stick-up (ft): —	Well Head PID (ppm): —
	NOTE: Foam test: negative		

Date (MM/DD/YY)	Time (24 hr)	Depth to Water (BTOC)	Volume Removed (gallons)	Pumping Rate (Lpm)	Temp (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Pump Refill/ Discharge (seconds)	Pump Pressure (PSI)	Comment
7/27/24	1110	38.24		0.350	19.21	1.549	49.22	6.26	238.5	1.82	8/7	75	
	1115	38.55			18.00	1.577	14.77	6.78	217.4	1.68			
	1120	38.55			17.94	1.598	14.22	6.92	206.9	1.88			
	1125	38.55			18.25	1.618	13.99	7.00	202.1	1.28			
	1130	38.55			18.25	1.627	13.78	7.05	197.8	1.09			
	1135	38.55			18.20	1.630	13.71	7.08	193.1	0.98			
	1140	38.55	~4.5		18.32	1.631	13.69	7.09	185.7	0.96			

Pumping Rate: ≤ 0.5L/min; **Measurements:** every 3 - 5 minutes; **Stabilization is defined as the following for three consecutive readings:** ± 3% Temp, ± 3% Conductivity; + 10% DO; ± 0.1 pH; ± 10mV ORP; 10% Turb

Sample ID Numbers and Sample Time	Container Count, Volume & Type	Preservative	Parameter(s)
CS-MW0035-GW @ 1145	2 x 125 mL HDPE	—	PFAS

AECOM

Monitoring Well Sample Collection Form

LOCATION	Site: Camp Smith	LocID: CS-MW002D	Date: 7/28/21
	Project Name: ARNG PFAS Camp Smith	Project Number: 60552172/006 SI-8	Recorded By: JC Checked By:
EQUIPMENT	Sampling Equipment - Pump: Whale Pump, HDPE Tubing	Controller: QED MP50	Compressor: QED MP50
	Water Level Indicator Type/ID#: Heron Skinny Dipper	Water Quality Meter Type: YSI 600XL Sonde ID:	Handset ID: 25503
	PID Type/ID#: —	Equipment Decon: ASTM Type I + Alconox	
WELL & SAMPLING INFO	Description: Flush mount	Screen Interval (BTOC): 90 - 110	Initial Depth to Water (BTOC): 79.54
	Historic Pump Settings: NA		Pump Inlet Depth (BTOC): 100
	Condition of Well/Comments: Flush Mount		Height of stick-up (ft): —
	NOTE: Foam Test: Negative		

Date (MM/DD/YY)	Time (24 hr)	Depth to Water (BTOC)	Volume Removed (gallons)	Pumping Rate (Lpm)	Temp (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Pump Refill/ Discharge (seconds)	Pump Pressure (PSI)	Comment
07/28/21	830	79.54	<	150	20.51	0.560	22.54	8.28	46.3	OR	8/7	~~≥~~ 60	
07/28/21	835	79.54	—	~~150~~ 50	20.54	0.551	22.22	7.56	65.6	681	8/7	60	Huge drop in discharge
07/28/21	840	79.54	—	200	21.74	0.535	23.59	7.74	69.9	239	18/12	60	
07/28/21	845	79.54	—	200	19.78	0.510	25.29	7.22	72.7	234	18/12	60	
07/28/21	850	79.54	—	200	19.16	0.496	24.05	7.12	76.9	145	18/12	60	
07/28/21	855	79.54	—	200	19.26	0.492	22.83	7.06	79.0	130	18/12	60	
07/28/21	900	79.54	—	200	19.57	0.488	21.02	7.03	80.7	90.5	18/12	60	
07/28/21	905	79.54	—	200	20.16	0.485	18.01	6.99	82.1	68.3	18/12	60	
07/28/21	910	79.54	—	200	20.38	0.484	18.10	6.99	82.0	55.5	18/12	60	
07/28/21	915	79.54	—	200	20.41	0.483	18.08	6.98	82.1	55.1	18/12	60	
07/28/21	920	79.54	3	200	20.48	0.480	18.14	6.96	82.3	50.1	18/12	60	

Pumping Rate: ≤ 0.5L/min; Measurements: every 3 - 5 minutes; Stabilization is defined as the following for three consecutive readings: ± 3% Temp, ± 3% Conductivity; + 10% DO; ± 0.1 pH; ± 10mV ORP; 10% Turb

Sample ID Numbers and Sample Time	Container Count, Volume & Type	Preservative	Parameter(s)
CS-MW002D-GW @ 930	2x 125 mL HDPE	—	PFAS
Post sample turbidity: 49.1 NTU			

Appendix B3
Field Change Request Forms

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Date: 16 December 2019

AECOM Technical Services Inc.
Field Change Request Form

Report Number: FCR001-004 **Location:** Camp Smith - Cortlandt, NY

Document Title: Camp Smith SI QAPP Addendum, Final **Contract Number:** W912DR-12-D-0014 DO: W912DR17F0192

FCR 001	*Description of Field Change:*	Depth-to-water in soil boring AOI 3-SB1 was at 2.5 ft bgs. As a result, soil was sampled in two intervals (0.5-1 and 1-2 ft bgs) instead of three intervals, as proposed in the SI QAPP.
	Proposed Disposition:	An additional sediment sample will be taken at a nearby surface water location, downgradient of AOI 3.
FCR 002	*Description of Field Change:*	Depth-to-water in soil boring AOI 1-SB2 was at 0.5 ft bgs. As a result, soil was sampled in one interval (0.5-1 ft bgs) instead of three intervals, as proposed in the SI QAPP.
	Proposed Disposition:	An additional sediment sample will be taken at a nearby surface water location, downgradient of AOI 1.
FCR 003	*Description of Field Change:*	Depth-to-water in soil boring AOI 1-SB3 was at 2.0 ft bgs. As a result, soil was sampled in two intervals (0.5-1 and 1-2 ft bgs) instead of three intervals, as proposed in the SI QAPP.

Date: 16 December 2019

	Proposed Disposition:	An additional sediment sample will be taken at a nearby surface water location, upgradient of AOI 1.
FCR 004	*Description of Field Change:*	The temporary monitoring well installed at AOI 2-SB1 was dry at refusal depth (26.5 ft bgs).
	Proposed Disposition:	Let the well set for a total of 48 hours to see if there is any groundwater recharge over that time. If not, abandon the temporary well. The understanding is that there is shallow underlying bedrock at this location, thus shallow groundwater likely does not occur here. No additional monitoring well was installed associated with this AOI, due to underlying shallow geology and hydrology at this location.

Submitted by: Brooke Perrigo **Date:** 12/16/2019

Approved by (Project Manager): Rosa Gwinn

Completed by: Brooke Perrigo **Date:** 12/16/2019

Verified by (SI Task Manager): Brooke Perrigo **Date:** 12/16/2019

Date: 24 July 2021

AECOM Technical Services Inc.
Field Change Request Form

Report Number: FCR-01 **Location:** Camp Smith, New York

Document Title: SI Mobilization 2 QAPP Addendum, Final **Contract Number:** W912DR-12-D-0014 DO: W912DR17F0192

Description of Field Change:	This FCR is regarding the well screen intervals for CS-MW002D and CS-MW003D (now CS-MW003S). The QAPP Addendum proposed that the borings would be advanced into the bedrock to assess potential impacts in the flow path between the potential release areas at AOI 2/ AOI 3 and downgradient potable Wells A and B. The target depths of the borings were the first instance of water-bearing fractures in competent rock. However, CS-MW002D was advanced to 140 feet bgs and bedrock was not encountered. Given the apparent thick overburden aquifer in this area, the team did not want to set the well screens too deep to capture the potential impacts in the flow path between AOI 2/ AOI 3 and Wells A/B.
Proposed Disposition:	Based on this new information, the CSM was reviewed to determine the appropriate screen intervals. Potable wells A and B are located on the edge of the wetlands area in the southern portion of Camp Smith (see attached figure). Well A is 80 feet deep, with a screen installed between 65 and 80 feet bgs, and Well B is 100 feet deep, with a screen installed between 82 and 100 feet bgs. The ground surface elevation at Wells A and B is approximately 90 feet below the ground surface elevation at CS-MW002D. To capture the approximate pathway between AOI 2 and the screen intervals at Wells A/B, the screen interval for CS-MW002D will be set from 90-110 feet bgs (within overburden). A 20-foot screen interval will be used, rather than a 10-foot screen interval, to increase the likelihood of capturing the potential migration pathway. The attached cross section A-A' roughly depicts the linear path from AOI 2 to the downgradient potable wells, with CS-MW002D location approximately at the mid-point. The attached figure shows an aerial view of the A-A' cross section transect location. Given apparent thick overburden aquifer in the vicinity, CS-MW003D (now CS-MW003S) will target the top of the shallow groundwater table. A 10-foot screen will be used to capture the groundwater interface and match the construction of the other shallow wells. Using different screen intervals between the two wells will provide more vertical coverage in the area.

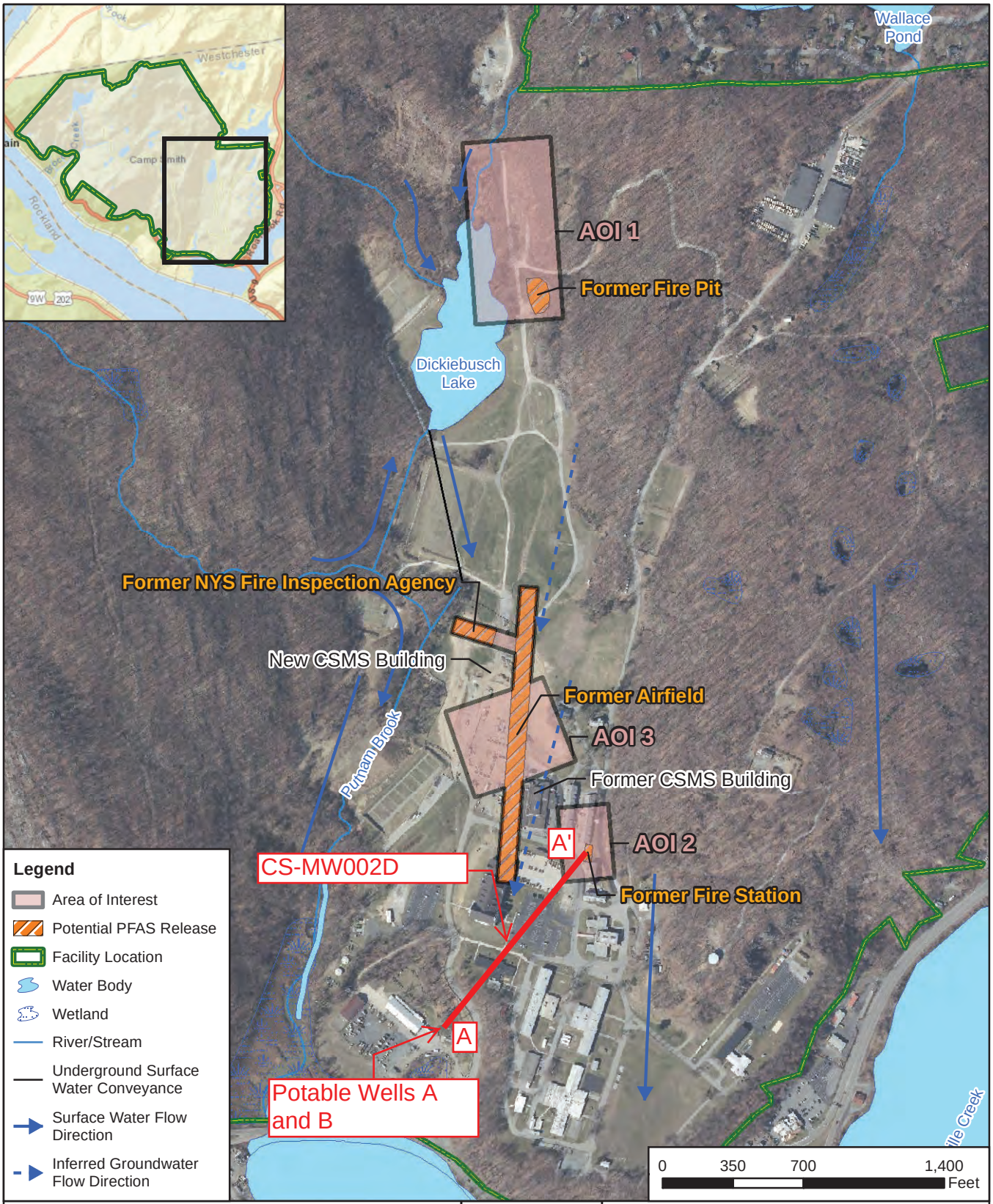
Date: 24 July 2021

Submitted by: Amanda Martin **Date:** 24 July 2021

Approved by (Project Manager): 

Completed by: John Shannon **Date:** 24 July 2021

Verified by (SI Task Manager): Amanda Martin **Date:** 24 July 2021



CLIENT	ARNG			
NOTES	Site Inspection for PFAS at Camp Smith, NY			
REVISED	1/7/2021	GIS BY	MS	1/7/2021
SCALE	1:8,400	CHK BY	BP	1/7/2021
Base Map: NYS Digital Ortho-imagery Program (NYSDOP), 2016		PM	RG	1/7/2021

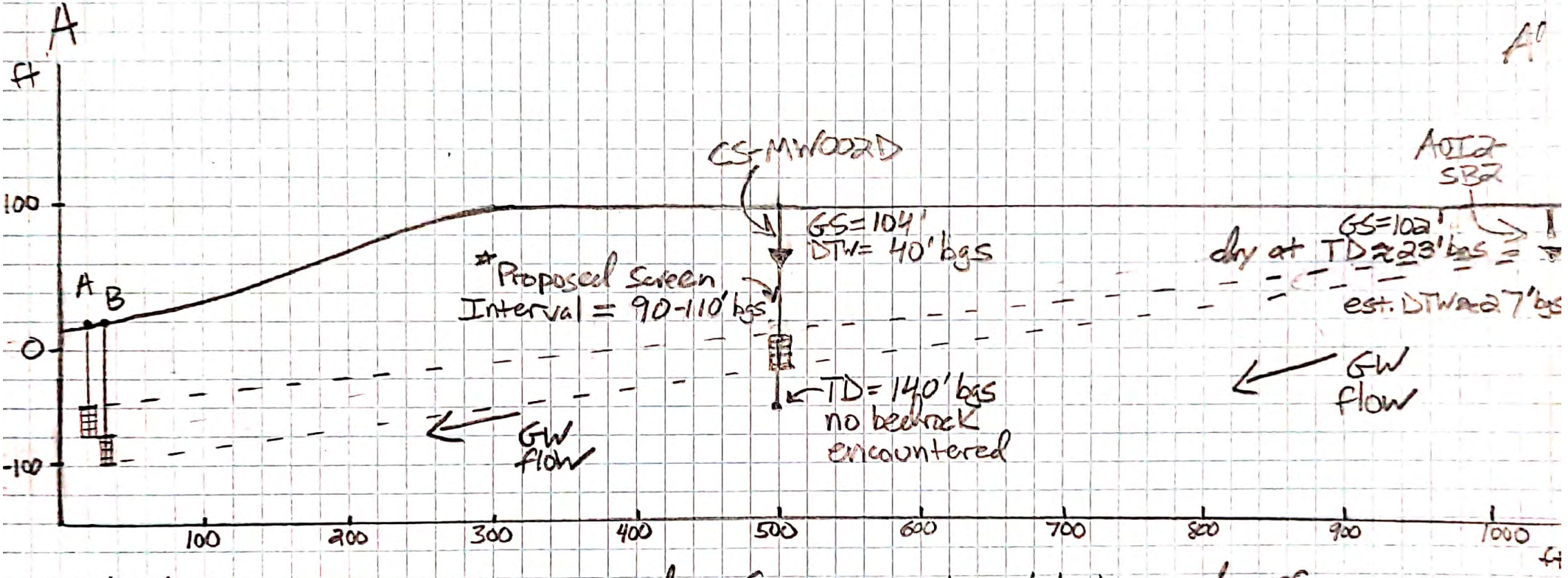
Cross Section A-A' Transect Location

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

FCR-01

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Camp Smith SI Mob 2
CS-MW002D
Cross-section A-A'



Well A
screen 65-80 ft bgs
Well B
screen 82-100 ft bgs

GS= ground surface
DTW= depth to water
TD= total depth

bgs= below ground surface

* Dashed lines represent approximate linear pathway between PFAS release area at AOI 2 and screen interval at downgradient potable well A and B. Proposed screen interval of CS-MW002D intersects this approximate pathway.

Scanned with CamScanner

Appendix B4
Survey Data

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AECOM

Army National Guard
Camp Smith, New York

01/08/2020

Monitoring Well Locations

Universal Transverse Mercator (UTM) Projection with WGS 84 Ellipsoid

M/W I.D.	Northing	Easting	Inner Elev.	Outer Elev.	Ground Elev.	Lat	Long	Permit #	Date
AOI2-SB1A/GW1	4572873.637	588766.909	n/a	n/a	103.284	41°18'8.7768"	-73°56'22.823"	n/a	12/12/2019
AOI2-SB1B	4572869.021	588767.631	n/a	n/a	103.42	41°18'8.6292"	-73°56'22.794"	n/a	12/12/2019
AOI2-SB1C	4572865.359	588768.882	n/a	n/a	103.167	41°18'8.5104"	-73°56'22.744"	n/a	12/12/2019
AOI2-SB1D	4572873.738	588767.637	n/a	n/a	104.264	41°18'8.7804"	-73°56'22.79"	n/a	12/12/2019
AOI3-SB2/GW2	4572900.155	588532.848	n/a	n/a	98.103	41°18'9.7308"	-73°56'32.874"	n/a	12/12/2019
AOI3-SB1/GW1	4573078.327	588574.996	n/a	n/a	77.485	41°18'15.4908"	-73°56'30.966"	n/a	12/12/2019
AOI1-SB2/GW2	4573680.157	588683.95	n/a	n/a	83.038	41°18'34.9596"	-73°56'25.966"	n/a	12/12/2019
AOI1-SB1/GW1	4573738.416	588710.941	n/a	n/a	93.746	41°18'36.8388"	-73°56'24.774"	n/a	12/12/2019
AOI1-SB3/GW3	4573953.852	588671.158	n/a	n/a	91.166	41°18'43.8408"	-73°56'26.372"	n/a	12/12/2019

NOTES

1. SURVEY WORK PERFORMED BY AECOM - NEWARK, DELAWARE ON 12/12/2019
2. ALL HORIZONTAL DATA RELATES TO UTM ZONE 18N WITH A WGS84 ELLIPSOID AND UNITES ARE IN METERS.
3. ALL VERTICAL DATA RELATES TO NAVD88 AND UNITS ARE IN FEET.
4. COORDINATES ESTABLISHED BY: TRIMBLE R6-VRS RTK GPS SYSTEM OPERATING VIA KEYNET.
5. INNER CASING ELEVATION LEVELED TO BLACK MARK OR NOTCH.
6. OUTER CASING ELEVATION TAKEN WITH LID ON.

AECOM

Army National Guard
Camp Smith, New York

08/10/2021

Universal Transverse Mercator (UTM) Projection with WGS 84 Ellipsoid

Monitoring Well Locations

Well I.D.	Northing (M)	Easting (M)	Latitude	Longitude	T.O.C. El. (Ft)	T.I.C. El. (Ft)	Ground El. (Ft)	Surveyed
CS-MW001S	4573984.29005	588673.02387	41° 18' 44.79"	-73° 56' 26.27"	96.36'	96.09'	93.37'	8/2/2021
CS-MW001D	4573984.29005	588673.02387	41° 18' 44.79"	-73° 56' 26.27"	96.36'	96.07'	93.37'	8/2/2021
CS-MW002D	4572766.88118	588685.70624	41° 18' 05.32"	-73° 56' 26.36"	105.15'	104.76'	105.15'	8/2/2021
CS-MW003S	4572789.57672	588611.12527	41° 18' 06.08"	-73° 56' 29.56"	102.31'	101.90'	102.31'	8/2/2021
CS-MW004S	4573078.69426	588555.98201	41° 18' 15.48"	-73° 56' 31.78"	76.93'	76.71'	73.97'	8/2/2021

Boring Locations

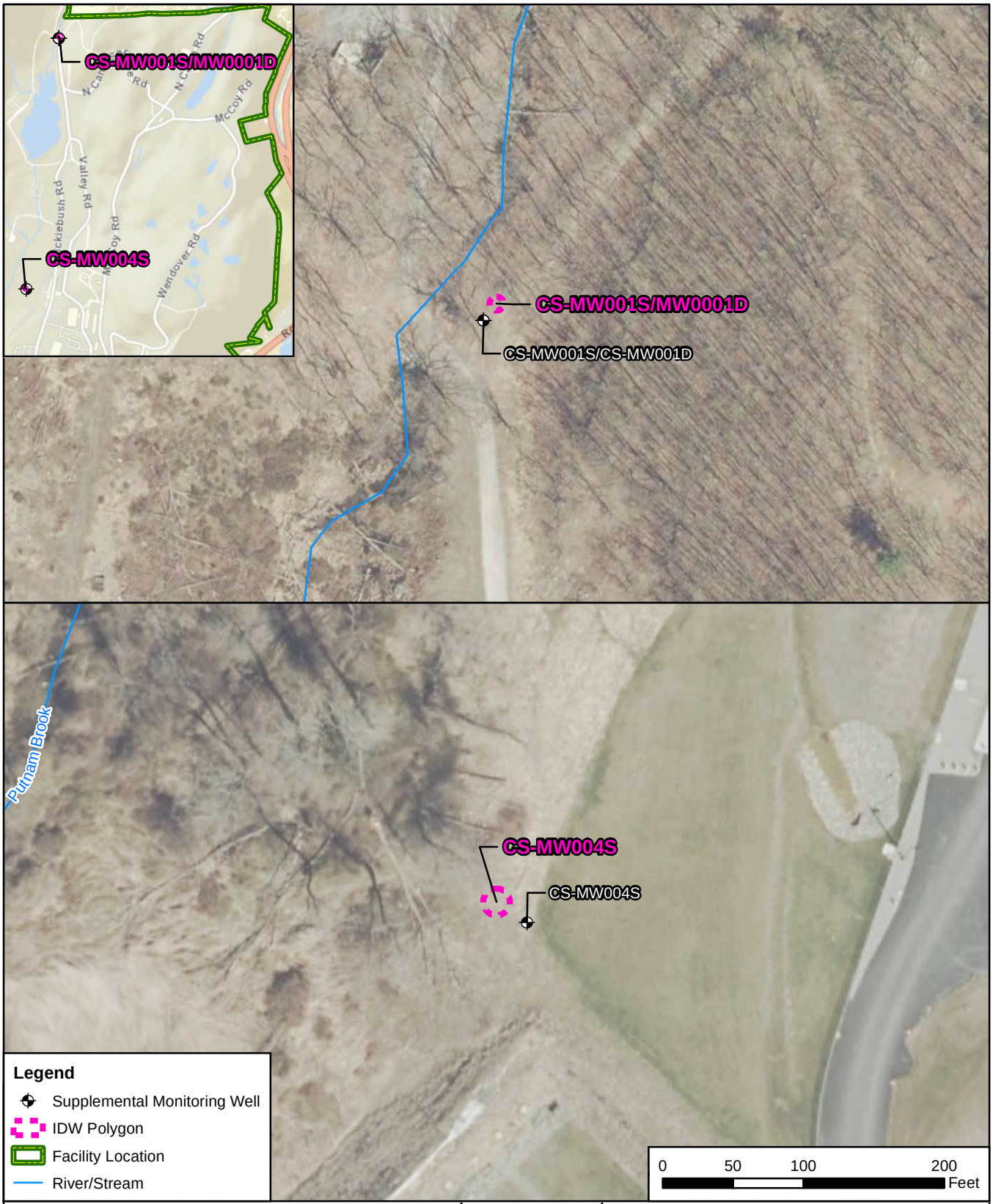
BH I.D.	Northing	Easting	Latitude	Longitude	T.O.C. El.	T.I.C. El.	Ground El.	Surveyed
AOI2-SB2	4572912.44656	588787.73149	41° 18' 10.00"	-73° 56' 21.90"	N/A	N/A	101.55'	8/2/2021
AOI2-SB3	4572906.37568	588787.74300	41° 18' 09.80"	-73° 56' 21.90"	N/A	N/A	101.63'	8/2/2021
AOI2-SB4	4572900.34330	588786.92510	41° 18' 09.60"	-73° 56' 21.94"	N/A	N/A	101.63'	8/2/2021
AOI2-SB5	4572895.36414	588789.50441	41° 18' 09.44"	-73° 56' 21.83"	N/A	N/A	101.91'	8/2/2021

Notes:

1. SURVEY WORK PERFORMED BY AECOM - NEWARK, DELAWARE ON 08/02/2021.
2. ALL HORIZONTAL DATA RELATES TO UTM ZONE 18N WITH A WGS84 ELLIPSOID AND UNITS ARE IN METERS.
3. ALL VERTICAL DATA RELATES TO NAVD88 AND UNITS ARE IN U.S. SURVEY FEET.
4. COORDINATES ESTABLISHED BY: TRIMBLE R6-VRS RTK GPS SYSTEM OPERATING VIA KEYNET.
5. INNER CASING (T.I.C.) ELEVATION LEVELED TO BLACK MARK OR NOTCH.
6. OUTER CASING (T.O.C.) ELEVATION TAKEN WITH LID OFF.

Appendix B5
IDW Polygons

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CLIENT	ARNG			
NOTES	Site Inspection for PFAS at Camp Smith, NY			
REVISED	10/22/2021	GIS BY	MS	10/22/2021
SCALE	1:20,000	CHK BY	AB	10/22/2021
Base Map: NYS Digital Ortho-imagery Program (NYSDOP), 2016		PM	CM	10/22/2021

IDW Polygons

AECOM
12420 Milestone Center Drive
Germantown, MD 20876

Figure

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Appendix C
Photographic Log

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Appendix C - Photographic Log

Site Inspection for PFAS	Camp Smith	Cortlandt, New York

Photograph No. 1

Date 12/9/2019

Time 12:06

Description:
View of AOI 1 - The Former Fire Pit; AOI1-SB1/GW1 was advanced in this area.



Orientation:
East

Photograph No. 2

Date 12/9/2019

Time 13:18

Description:
Flag denoting the drilling location for AOI1-SB2/GW2 and eastern side of Dickiebusch Lake.



Orientation:
West

Appendix C - Photographic Log

Site Inspection for PFAS	Camp Smith	Cortlandt, New York

Photograph No. 3

Date 12/9/2019

Time 12:57

Description:
Flag denoting drilling location for AOI1-SB3/GW3.

Orientation:
Northeast



Photograph No. 4

Date 12/9/2019

Time 10:25

Description:
Utility markout around the proposed location for AOI2-SB1



Orientation:
North

Appendix C - Photographic Log

Site Inspection for PFAS	Camp Smith	Cortlandt, New York

Photograph No. 5

Date 12/10/2019
Time 13:56

Description:
Step-out attempt locations at AOI2-SB1. Original AOI2-SB1 boring location hit refusal at 26.5 ft bgs without detecting groundwater, 2 additional step-out attempts are marked here.

Orientation:
Northwest



Photograph No. 6

Date 12/10/2019
Time 15:58

Description:
AOI2-SB1 was left for 48 hours to attempt groundwater recharge. After the recharge period, the well was still dry and abandoned.

Orientation:
West



Appendix C - Photographic Log

Site Inspection for PFAS	Camp Smith	Cortlandt, New York

Photograph No. 7

Date 12/9/2019
Time 11:35

Description:
Flag denoting AOI3-SB1/GW1 drilling location.

Orientation:
Southwest



Photograph No. 8

Date 12/9/2019
Time 11:19

Description:
Flag denoting AOI3-SB2/GW2 drilling location.

Orientation:
West



Appendix C - Photographic Log

Site Inspection for PFAS	Camp Smith	Cortlandt, New York

Photograph No. 9

Date 12/10/2019

Time 9:33

Description:
Drilling activities performed by Cascade at AOI3-SB2/GW2.

Orientation:
South-Southwest



Photograph No. 10

Date 12/12/2019

Time 8:09

Description:
Northeastern portion of Dickiebusch Lake; location of CS-SW/SD01.

Orientation:
West



Appendix C - Photographic Log

Site Inspection for PFAS	Camp Smith	Cortlandt, New York

Photograph No. 11

Date 12/9/2019

Time 11:23

Description:
Tributary flowing southeast into the northwestern portion of Dickiebusch Lake. Location of CS-SW/SD02.

Orientation:
Northwest



Photograph No. 12

Date 12/9/2019

Time 11:39

Description:
Tributary flowing northeast into the southwestern portion of Dickiebusch Lake. Location of CS-SW/SD03.

Orientation:
Northeast



Appendix C - Photographic Log

Site Inspection for PFAS	Camp Smith	Cortlandt, New York

Photograph No. 13

Date 12/12/219

Time 11:35

Description:
Underground surface water conveyance from Dickiebusch Lake discharging into Putnam Brook. Location of CS-SW/SD04.

Orientation:
North



Photograph No. 14

Date 12/11/2019

Time 15:58

Description:
Surface water flowing south in Putnam Brook. Location of CS-SW/SD05.

Orientation:
South



Appendix C - Photographic Log

Site Inspection for PFAS	Camp Smith	Cortlandt, New York

Photograph No. 15

Date 12/11/2019
Time 13:36

Description:
Solid IDW: 55-gallon drum containing soil cuttings from boring locations at AOIs 1, 2, and 3.

Orientation:
NA

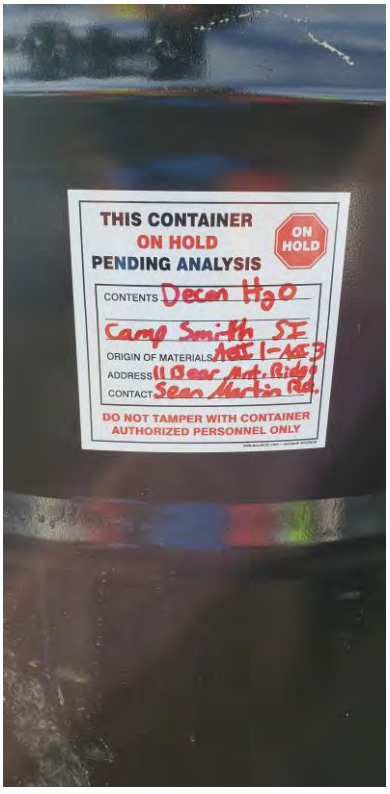


Photograph No. 16

Date 12/11/2019
Time 13:36

Description:
Liquid IDW: 55-gallon drum containing decontamination water from temporary wells at AOIs 1 and 3.

Orientation:
NA



APPENDIX C – Photographic Log

Site Inspection for PFAS	Camp Smith	Cortlandt, New York

Photograph No. 1 **Date: 21 July 2021** **Time: 0826** **Description:** CS-MW001S/D well installation. **Orientation:** SE	

Photograph No. 2 **Date: 21 July 2021** **Time: 0809** **Description:** CS-MW001S/D well installation. Vacuum device to remove any drilling fluids. **Orientation:** SE	

APPENDIX C – Photographic Log – Site Photos

Site Inspection for PFAS	Camp Smith	Cortlandt, New York

Photograph No. 3 **Date: 22 July 2021** **Time: 0818** **Description:** CS-MW001S/D well completion. The two monitoring wells were nested in the one borehole. **Orientation:** SE	

Photograph No. 4 **Date: 23 July 2021** **Time: 1343** **Description:** CS-MW001S/D well development activities. **Orientation:** SE	

APPENDIX C – Photographic Log

Site Inspection for PFAS	Camp Smith	Cortlandt, New York

Photograph No. 5 **Date: 24 July 2021** **Time: 1348** **Description:** CS-MW001S/D low flow sampling activities **Orientation: South**	

Photograph No. 6 **Date: 23 July 2021** **Time: 0817** **Description:** CS-MW001S/D turbidity during development. **Orientation:** N/A	

APPENDIX C – Photographic Log

Site Inspection for PFAS	Camp Smith	Cortlandt, New York

Photograph No. 7 **Date: 25 July 2021** **Time: 0818** **Description:** CS-MW003S well completion. **Orientation:** NE NE	

Photograph No. 8 **Date: 19 July 2021** **Time: 0816** **Description:** CS-MW004S well completion. **Orientation:** West	

Appendix D
TPP Meeting Minutes

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Meeting Minutes
Camp Smith – Site Inspection (SI)
Technical Project Planning (TPP) – Meeting 3
Preliminary Assessments and Site Inspections (PA/SIs) for Perfluorooctanesulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA) Impacted Sites
Contract No. W912DR-12-D-0014, DO W912DR17F0192
Thursday, 7 January 2021
1100-1230

Participants			
Name	**Affiliation***	**Phone**	**E-Mail**
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** Notes: ARNG-G9 - Army National Guard-G9; USACE- United States Army Corps of Engineers; NYARNG- New York Army National Guard; NYSDEC- New York State Department of Environmental Conservation; NYSDOH- New York State Department of Health*

Ms. Amanda Martin (AECOM) welcomed participants to the virtual Technical Project Planning (TPP) 3 meeting and reviewed the purpose of the meeting, outlined the agenda, and led a roundtable of introductions. The purpose of the TPP 3 meeting was to discuss the Army National Guard (ARNG) Per- and Polyfluoroalkyl Substance (PFAS) Preliminary Assessment (PA)/ Site Inspection (SI) program, the results of the SI Mobilization 1 at Camp Smith, and the proposed approach for the SI Mobilization 2.

Presentation slides were provided to participants prior to the meeting and are included in **Attachment A**. Key points that supplement the presentation are summarized below.

A safety moment that covered the safety procedures established in the United States Army Corps of Engineers (USACE) Engineering Manual (EM) 385-1-1 was provided to the participants. A Programmatic Accident Prevention Plan (APP) and Site Safety and Health Plan (SSHP) have been prepared in accordance with EM 385-1-1. The site-specific SSHP was developed concurrently with the Uniform Federal Policy-Quality Assurance Project Plan (UFP-QAPP), so that as risks related to the proposed sampling approach were identified, mitigation strategies were developed and documented in the SSHP.

Additionally, pandemic awareness and safety protocols have been incorporated into the SSHP to address field work being completed during the Coronavirus Disease 2019 (COVID-19) pandemic. Mr. Jim Freehart (New York ARNG [NYARNG]) indicated that all NYARNG facilities require contractors to wear a mask, get their temperature taken at the gate, and answer several questions regarding their recent travel and potential exposure to COVID-19 prior to entering a facility.

TPP Meeting Goals (Slides 5):

- Ms. Martin briefly reviewed the meeting goals of each TPP Meeting, including those in the ARNG PA/SI program. The TPP process is intended to be an opportunity for collaboration between the involved stakeholders, and ARNG intends to use this process to maximize the effectiveness of planning and implementation for the project.
- A combined TPP 1&2 was held in July 2019, prior to the Mobilization 1 field effort. The goals of that meeting were to provide an overview of the ARNG PA/SI program, discuss the PA findings for Camp Smith, and present the objectives for the SI data collection during Mobilization 1.
- The goals of TPP 3 were to discuss the SI Mobilization 1 findings and the proposed SI Mobilization 2 sampling approach.

- TPP 4 will be scheduled after the field work, once the Draft Final SI Report has been provided to the stakeholders, to discuss the overall SI findings.
- Participants for the previous combined TPP 1&2 and TPP 3 included ARNG, USACE, NYARNG, New York State Department of Environmental Conservation (NYSDEC), New York State Department of Health (NYSDOH), and AECOM; participants for the future TPP 4 meeting will include the addition of other local stakeholders to be determined once the SI reporting phase has begun.

Summary of PA Findings (Slides 6-8):

- The PA findings for the Camp Smith were previously presented during TPP 1&2; however, a brief review of the PA findings was provided during TPP 3. Four potential PFAS release areas were identified during the PA at Camp Smith and were grouped into three Areas of Interest (AOIs): AOI 1 – the Former Fire Pit; AOI 2 – the Former Fire Station; and AOI 3 – the Former Airfield/ Former New York State Fire Inspection Agency. The potential PFAS releases at these AOIs were attributed to firefighting training exercises, storage of materials, and washing of firefighting equipment.
- Additionally, two potable wells, Wells A/1 and B/2, are located in the southern portion of cantonment area (downgradient of the AOIs). Well A is screened 65-80 feet below ground surface (bgs), and Well B is screened 82-100 feet bgs. Borings from a previous NYARNG study indicated that there is a thick clay confining unit that separates surface water from the confined aquifer. Wells A and B draw water from the confined aquifer; however, the full extent of the clay layer is not known. The wells have been sampled for PFAS, and there has been one exceedance of the United States Environmental Protection Agency (USEPA) lifetime Health Advisory (HA) level in Well A/1 in March of 2020.
- Mr. Sean Martin (NYARNG) indicated that filters have been added to the potable water taps/sources around the post, and that the filtered water is tested periodically for PFAS. Results indicated that PFAS concentrations have been reduced to non-detect levels.

SI Mobilization 1 Summary of Approach (Slides 9-12):

- The general approach for the SI Mobilization 1 was presented.
    - Direct-push borings were conducted to the top of the groundwater table, or until bedrock refusal, whichever was encountered first. Up to three soil samples were collected from each location – generally one from the surface soil, another above the water table, and the third from the mid-point of the boring. Groundwater was encountered from 0.5 to 22 feet bgs across the site; three soil samples were not collected in the borings where very shallow groundwater was encountered. Temporary monitoring wells were installed at each boring location to collect a grab groundwater sample; however, groundwater could not be obtained at AOI 2 because bedrock refusal was encountered before reaching groundwater.
    - The total number of samples collected during the SI Mobilization 1 included 14 soil samples from 6 boring locations, 5 grab groundwater samples from temporary wells, 8 sediment samples, and 5 surface water samples (which were co-located with 5 of the sediment samples).
- An overview of the screening levels for the ARNG PA/SI program was also provided.
    - The Department of Defense (DoD) has adopted a policy to retain facilities in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process based on risk-based screening levels (SLs) for soil and groundwater, as described in a memorandum from the Office of the Secretary of Defense (OSD) dated 15 October 2019. The ARNG program under which this SI will be performed follows this DoD policy. Should the maximum concentration for sampled media exceed the SLs established in the OSD memorandum, the AOI will proceed to the next phase under CERCLA. The SLs established in the OSD memorandum apply to three compounds: perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA), and perfluorobutanesulfonic acid (PFBS).
    - Additionally, the USEPA HAs for PFOA and PFOS will also be used as SLs for groundwater samples collected at the facility because downgradient groundwater may potentially be used as drinking water.

- Per DoD policy, a full analysis of Applicable or Relevant and Appropriate Requirements (ARARs) will be done after the Remedial Investigation (RI), during the Feasibility Study, when ARNG will evaluate state screening values and other published state PFAS values.

SI Mobilization 1 Summary of Findings (Slides 13-19):

- The results of the SI Mobilization 1 at Camp Smith were presented.
  - In groundwater, PFOA, PFOS, PFBS detected at AOI 1 and AOI 3. At location AOI1-GW3, PFOA was detected at 58.4 nanograms per liter (ng/L), which exceeded the OSD SL of 40 ng/L. Additionally, the combined value of PFOA and PFOS at the same location was 70.9 ng/L, which exceeded the USEPA HA of 70 ng/L.
  - In soil, PFOS and PFOA were detected at concentrations several orders of magnitude below SLs, but PFBS not detected.
  - In sediment, PFOS and PFOA were detected, but PFBS not detected.
  - In surface water, neither PFOA, PFOS, nor PFBS were detected.
- NYSDEC collected split samples with AECOM during the SI Mobilization 1. The data were previously provided by NYSDEC to ARNG G9. Mr. Dan Lanners (NYSDEC) asked whether AECOM had evaluated discrepancies between the ARNG data and NYSDEC data collected at AOI1-SB1/GW1. The NYSDEC sample had a total PFOA+PFOS concentration of 63.4 ng/L. Ms. Martin indicated that the total PFOA+PFOS concentration from the ARNG data at that location was 66.8 ng/L, which was close to the NYSDEC detection. The group acknowledged that there was a greater difference in the groundwater results from location AOI3-SB1/GW1 (NYSDEC result: PFOA+PFOS of 82 ng/L, ARNG result: PFOS+PFOA of 50.8 ng/L). AECOM has reviewed the field records and laboratory records, but the source of the discrepancy could not be determined. Therefore, a well will be installed adjacent to this location during Mobilization 2 to confirm the results.
- Based on the exceedance of the SLs in groundwater at AOI 1, AOI 1 will proceed to the RI phase of the CERCLA process. However, uncertainties remained after the SI Mobilization 1 regarding the sources of the exceedances in groundwater at AOI 1 and at the downgradient potable Well A. Therefore, ARNG decided to collect additional data during SI Mobilization 2 to help understand the sources of the exceedances and to prepare for the sampling design for the RI.

SI Mobilization 2 Summary of Approach and Schedule (Slides 20-25):

- The proposed scope of work for the SI Mobilization 2 was presented.
  - At AOI 1, two permanent monitoring wells, one shallow and one deep, are proposed upgradient of the location of the exceedance during Mobilization 1 (AOI1-GW3). The target screen interval of the shallow well is in overburden at the top of groundwater. The target depth for deep well is the first instance of water-bearing fractures in competent rock. The target depths were selected to evaluate the potential vertical distribution of PFAS impacts from an unidentified upgradient source. Additionally, soil samples would be collected from the boring.
  - At AOI 2, four hand auger locations are proposed in the parking lot area adjacent to the Former Fire Station. The target depth of each location is 4 feet bgs (below asphalt/concrete). The sample locations will be adjusted in the field to target low-lying areas where fluids from firetrucks and equipment washing activities would have been suspected to accumulate. Additionally, the parking lot and road in this area is suspected to consist of 10-inch thick concrete containing rebar with an asphalt coating. If the presence of rebar interferes with the utility clearance, the sample locations will be adjusted to the closest location that can be cleared for utilities without interference.
  - At AOI 3, one shallow permanent well proposed near the potential release area, adjacent to Mobilization 1 location AOI3-GW1. The target depth of the boring is the overburden at the top of groundwater. Soil samples will also be collected form the boring.
  - Downgradient of AOIs 2 and 3, two deep permanent wells to evaluate the bedrock aquifer flow path between potential release areas at AOI 2/ AOI 3 and downgradient potable Wells A and B. The target depths of the borings are first instance of water-bearing fractures in competent rock.

- NYSDEC provided clarification on a comment made on the Draft Final SI QAPP Addendum regarding adjustments to the proposed locations of the wells at AOI 1, CS-MW001S, and CS-MW001D; their suggestion was to position one set of wells on the Camp Smith property to the west of Wallace Pond (on-facility), along the tributary running north-south. The NYSDEC recommended a second pair of wells location further to the northwest at the intersection of the access road and the tributary flowing onsite the facility from the north.
    - Mr. Martin indicated that, due to thick vegetation and bedrock outcrops, there were access limitations along the facility boundary to the west of Wallace Pond.
    - Additionally, due to contract limitations, no additional borings could be included in the SI Mobilization 2; however, the locations suggested by NYSDEC would be considered during the RI.
    - During this conversation, AECOM reiterated that no surface water or sediment sampling will be performed during the Mobilization 2. These media will be considered during the RI.
- The PFAS analyte list, which includes 18 PFAS compounds, was presented. Analysis will be completed by a DoD-Environmental Laboratory Accreditation (ELAP)/National Environmental Laboratory Accreditation Program (NELAP)-certified laboratory. A Level IV deliverable will be received from the laboratory, and data will undergo Stage 2b data validation as defined in the DoD General Data Validation Guidelines.
- A general outline of the schedule was presented. The Draft Final UFP-QAPP was provided to the NYSDEC and NYSDOH in November 2020; comments were provided by NYSDEC and NYSDOH in December 2020. A backcheck version of the document will be provided with the responses to NYSDEC/NYSDOH comments in January 2021. The field investigation is tentatively planned for February 2021, pending finalization of the UFP-QAPP and weather-permitting.
- Under normal circumstances, the team would field verify the proposed locations during a site reconnaissance walk conducted after the TPP 3 meeting; however, that is not possible given the current travel restrictions due to the COVID-19 pandemic. Instead, the site walk will be performed during the mark-out and utility clearing.
- Mr. Lanners indicated that he was unsure whether NYSDEC would be onsite during the site walk or field sampling during SI Mobilization 2 due to COVID-19 travel restrictions; he will have a more definitive answer once the date of the field effort is finalized. ARNG will provide NYSDEC updates on the schedule as planning progresses. Additionally, NYSDEC confirmed that they will not be collecting split samples during the SI Mobilization 2.

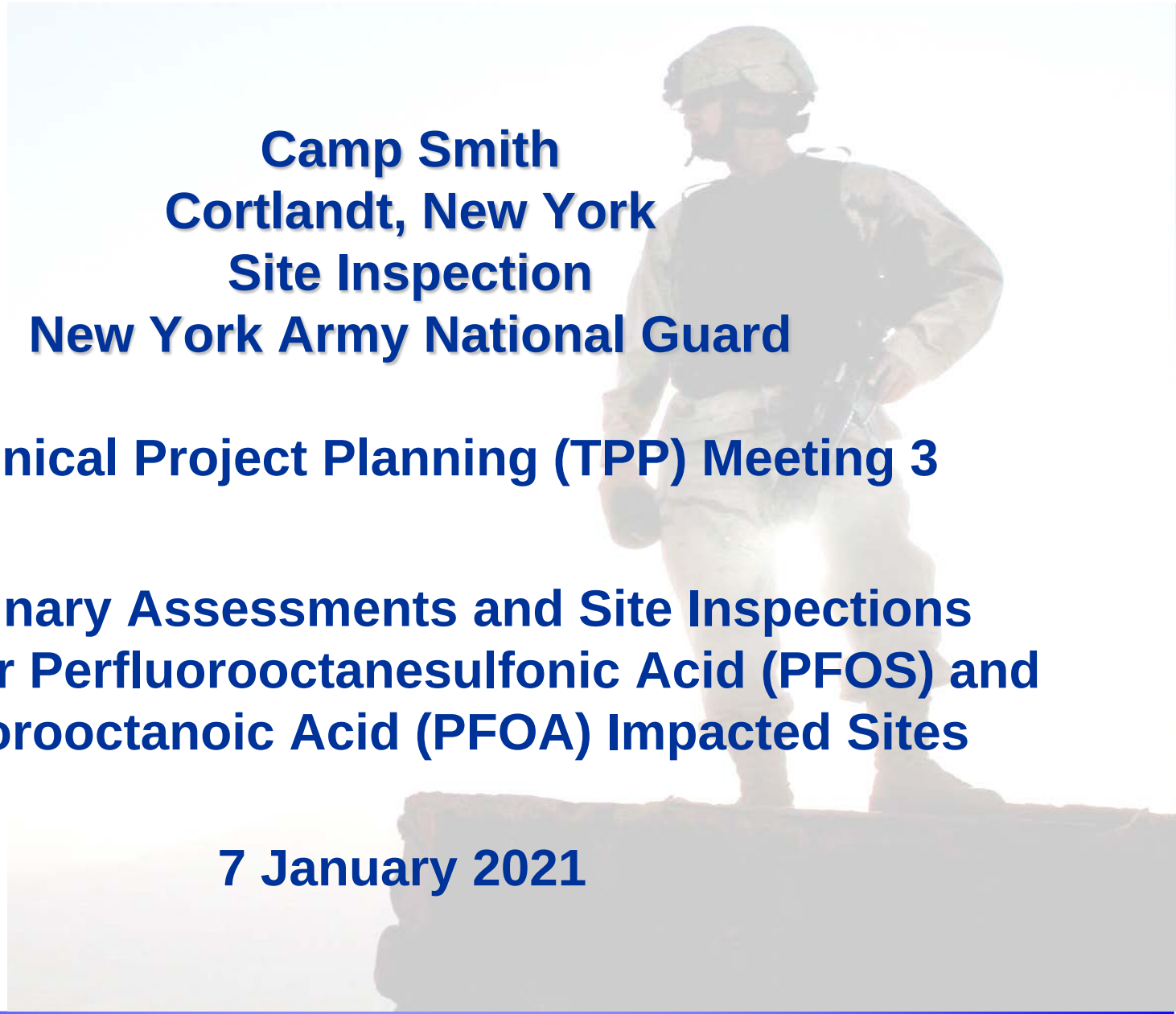
Open Discussion (Slide 26):

- The project team discussed the management of investigation-derived waste (IDW). A significant amount of solid and liquid IDW will be generated during the SI Mobilization 2 due to the nature of sonic/bedrock drilling. To avoid potential burden on the facility due to storing drums, ARNG is attempting to establish a creative solution for managing the IDW and will provide an update to the group once the path forward is established.
- Mr. Martin asked to please coordinate directly with him as fieldwork planning begins because the range schedule is busy. AECOM asked that NYARNG inform the team if there are particular weeks to avoid scheduling fieldwork due to range activities. Ms. Amanda Sullivan (ARNG G9) mentioned that the AECOM team may only need access to the range areas for a few days and not the entire 5-day period. Ms. Martin further clarified that the team will likely have to go back to these locations multiple times (for drilling, development, and sampling).
- The project team also discussed the utility markout and clearance process. A private utility locator will be used to complete the utility clearance; however, a New York Dig Safe ticket will still be placed in advance of the intrusive activities in accordance with New York State law.
    - Ms. Sullivan asked how long the utility clearance and the drilling is expected to take. AECOM indicated that the utility clearing would be performed over the course of 1 day prior to the drillers mobilizing to the site. At that time, a site walk would be performed to place the proposed locations and adjust as necessary due to physical obstructions or subsurface utilities discovered during the utility clearing. AECOM will confirm the anticipated time to complete the drilling but estimated it could take up to 5 days to complete.

  - Mr. Martin asked whether preclearing will be performed at all locations using an air knife or hand auger. AECOM confirmed that after the utility clearing is done, all locations will be pre-cleared to 5 feet bgs using hand tools. The surface soil locations will be cleared by the utility survey contractor, cored by the drillers (due to the thick concrete and rebar), and collected during hand tools (since the sample intervals are less than 5 feet bgs).
- Ms. Wendy Kuehner (NYSDOH) asked whether ARNG would consider using the NYSDEC PFAS screening levels if they were approved for use at other DoD facilities (both ARNG facilities or those under jurisdiction of other DoD entities). For example, she indicated the NYSDEC PFAS screening levels are being used at the DoD facility in Newburgh, New York. Ms. Kuehner indicated she was under the impression the DoD was trying to approach screening levels consistently across all DoD entities. Ms. Sullivan indicated that her understanding was that, per the directive given to the ARNG, the ARNG will follow the OSD SLs until the FS phase, when ARARs are discussed and considered. Ms. Sullivan indicated she would double check with her chain of command regarding Ms. Kuehner's inquiry.

The presentation ended at 1230, and the phone line was closed.

Attachment A - TPP 3 Briefing Slides



Camp Smith
Cortlandt, New York
Site Inspection
New York Army National Guard

Technical Project Planning (TPP) Meeting 3

Preliminary Assessments and Site Inspections (PA/SI) for Perfluorooctanesulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA) Impacted Sites

7 January 2021

Agenda

- Introductions
- Safety Moment
- TPP Meeting Goals
- Camp Smith SI Mobilization 1 Results
- Camp Smith SI Mobilization 2 Overview
- Stakeholder Involvement
- Questions and Open Discussion

Introductions

- Army National Guard (ARNG) G9
  - Dave Connolly, PFAS Program Manager
  - Bonnie Packer, Nationwide Project Manager
  - Amanda Sullivan, Project Manager
- United States Army Corps of Engineers (USACE)
  - Tim Peck, Nationwide Program Manager
  - Kimberly Berg, Baltimore District
- New York Army National Guard (NYARNG)
  - 2LT Steves Vanderpool, Environmental Protection Specialist
  - James Freehart, Acting Branch Chief
  - Greg Austin, Senior Environmental Analyst
  - Sean Martin, Facility Environmental Manager
- New York State Department of Environmental Conservation (NYSDEC)
  - Dan Lanners
  - John Swartwout
  - Amen Omorogbe
- New York State Department of Health (NYSDOH)
  - Wendy Kuehner
  - Daniel Tucholski
  - Maureen Schuck
- AECOM Technical Services, Inc.
  - Amanda Martin, SI Task Manager
  - Andrew Borden, Geologist
  - Claire Mitchell, Project Manager

Safety Moment
Site Safety Procedures

- SI will follow USACE Engineering Manual (EM) 385-1-1 requirements:
  - Accident Prevention Plan addresses all component plans for EM 385-1-1, including Construction Support during drilling operations
  - Site Safety and Health Plan (SSHP) addresses project participants, training, and hazard identification and mitigation
- Health and safety documents prepared during SI planning phase
  - SSHP has been revised to incorporate COVID-19 updates and protective measures

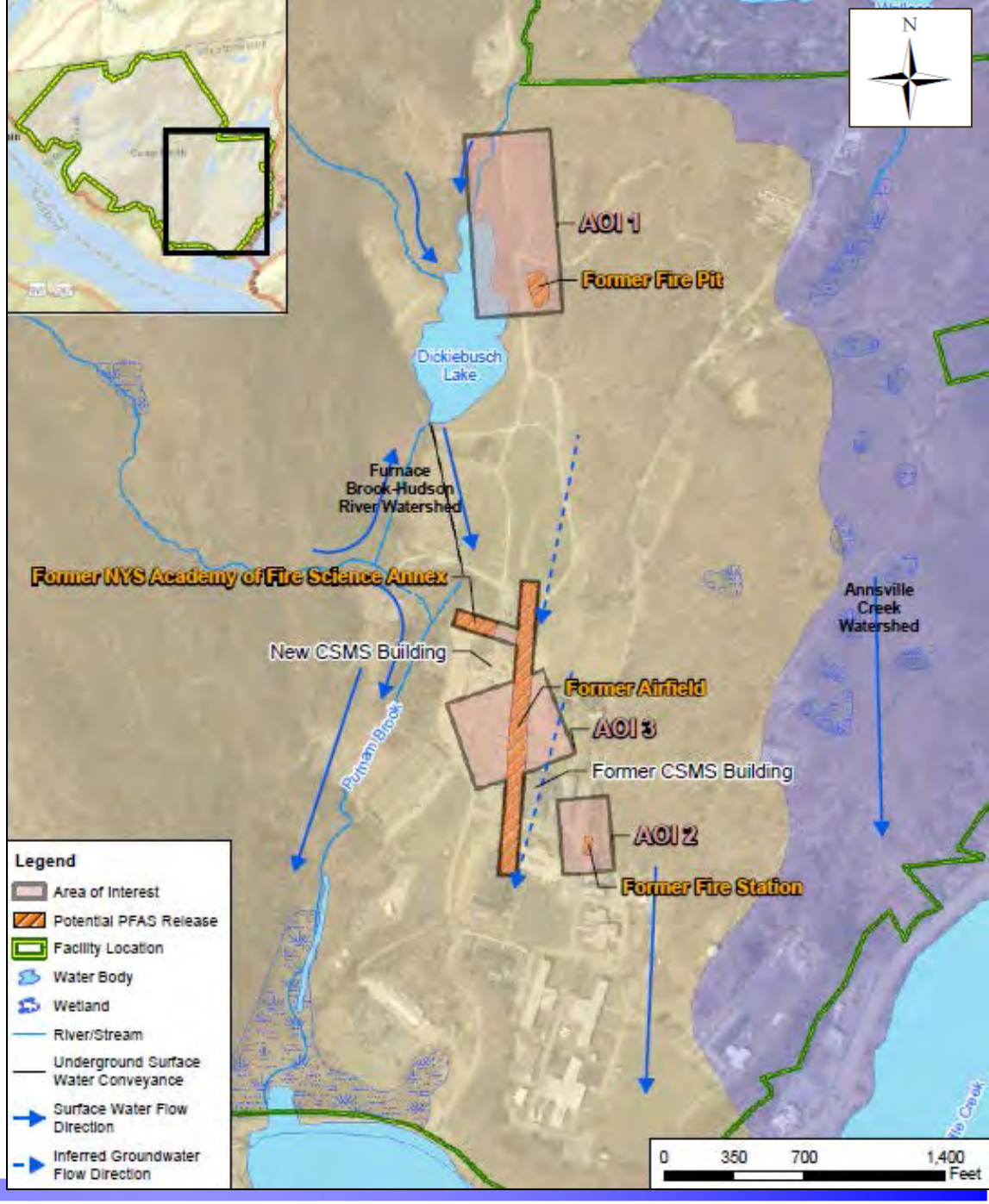
TPP Meeting Goals

- TPP 1 & 2 (July 2019): Provided overview of the ARNG PA/SI Program, discussed PA Findings, define objectives and approach for SI Mobilization 1
- TPP 3: Discuss SI Mobilization 1 findings and proposed SI Mobilization 2 approach
- TPP 4: Discuss SI findings
- Participants:
  - TPP 1, 2, & 3: ARNG G9, NYARNG, USACE, NYSDEC, NYSDOH, AECOM
  - TPP 4: ARNG G9, USACE, NYARNG, NYSDEC, NYSDOH, AECOM, other local stakeholders

PA – Summary of Findings

- Potential PFAS release areas: four potential PFAS release areas identified during the PA and placed in three Areas of Interest (AOIs)
  - AOI 1 – Former Fire Pit
  - AOI 2 – Former Fire Station
  - AOI 3 – Former Airfield/ Former NYS Fire Inspection Agency
- PFAS releases attributed to firefighting training exercises, storage of materials, and washing of firefighting equipment

PA – Summary of Findings



PA – Summary of Findings

- Potable Wells A and B in southern portion of cantonment area (downgradient of AOIs)
  - Exceedance of USEPA lifetime Health Advisory (HA) in Well A
  - Well A screen 65-80 feet below ground surface (ft bgs)
  - Well B screen 82-100 ft bgs
  - Draw from confined aquifer

SI – Mobilization 1
Summary of Approach

- Approach
  - Soil samples from each location: surface soil (0.5 to 1 ft bgs), above water table (0.5 to 22.2 ft bgs), and at mid-point, where practicable
  - Temporary monitoring wells for groundwater (GW) grab samples (ranging from 5 to 20ft bgs)
- Total Samples
  - 14 soil samples from 6 locations (soil borings and hand auger)
  - 5 GW grab samples from temporary wells
  - 8 sediment samples
  - 5 surface water samples (co-located with 5 of the sediment samples)

SI – Mobilization 1

Summary of Approach



SI – Mobilization 1
Summary of Approach

- Data compared to Office of the Secretary of Defense (OSD) Screening Levels (SLs) for soil and groundwater
  - Memorandum from the OSD dated 15 October 2019; OSD SLs adopted for ARNG PFAS program in June 2019, 7 months after finalization of Uniform Federal Policy-Quality Assurance Project Plan (UFP-QAPP) Addendum
  - Soil from 0-2 ft compared to Residential SL, 2-15 ft compared to Industrial SL, >15 ft not compared to either SL
  - Groundwater also compared to USEPA HAs since downgradient groundwater used as drinking water

SI – Mobilization 1

Summary of Approach

Analyte	Residential (Soil) (µg/kg)[a,b] 0-2 feet bgs	Industrial/ Commercial Composite Worker (Soil) (µg/kg)[a,b]	Tap Water (Groundwater) (ng/L)[a,b]	USEPA HA (Groundwater representative of Drinking Water) (ng/L)[d,e]
Perfluorooctanesulfonic acid (PFOS)	130	1,600	40	70[d]
Perfluorooctanoic acid (PFOA)	130	1,600	40	70[d]
Perfluorobutanesulfonic acid (PFBS)	130,000	1,600,000	40,000	-

Notes:

a.) Assistant Secretary of Defense, 2019. Risk Based Screening Levels Calculated for PFOS, PFOA, PFBS in Groundwater and Soil using USEPA's Regional Screening Level Calculator. HQ=0.1. 15 October 2019.

b.) The SL for surface soil (0 to 2 feet bgs) is based on incidental ingestion of soil (residential scenario); the SL for subsurface soil (industrial/commercial worker scenarios) and therefore will only be applied to the soil intervals reasonably anticipated to be encountered in these scenarios (2 to 15 feet bgs).

c.) If only one PFAS is present, a Hazard Quotient (HQ) of 1 applies and the values presented would increase by a factor of x10.

d.) USEPA. 2016a. Drinking Water HA for Perfluorooctanoic Acid (PFOA). Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. USEPA Document Number: 822-R-16-005. May 2016. / USEPA. 2016b. Drinking Water HA for Perfluorooctane Sulfonate (PFOS). Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. USEPA Document Number: 822-R-16-004. May 2016.

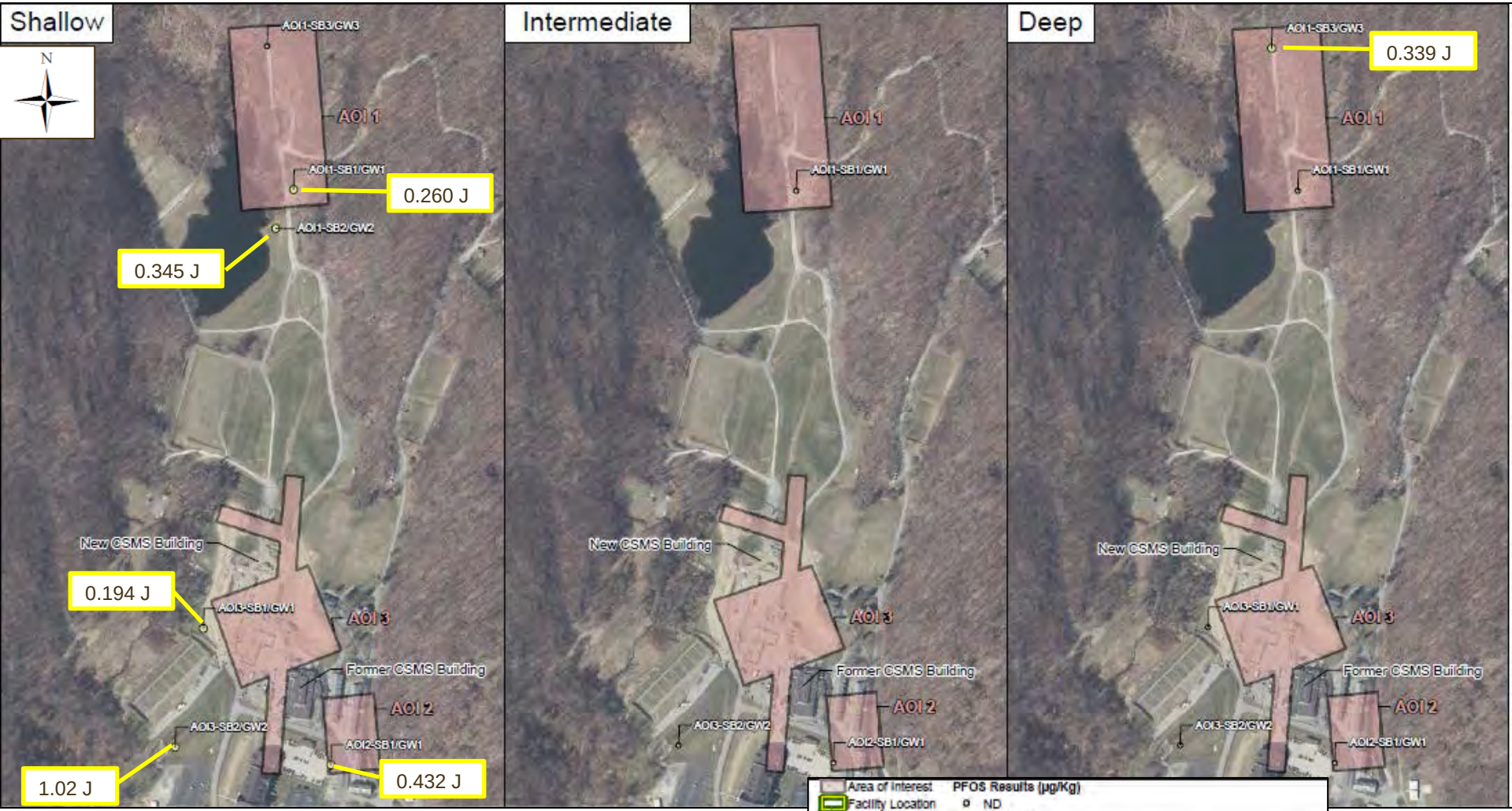
e.) USEPA HAs apply to the PFOS and PFOA concentrations individually or combined.

SI – Mobilization 1
Summary of Findings

- Groundwater – PFOA, PFOS, perfluorobutanesulfonic acid (PFBS) detected at AOI 1 and AOI 3
  - PFOA at AOI1-GW3 (58.4 ng/L) > OSD SL (40 ng/L)
  - PFOA+PFOS at AOI1-GW3 (70.9 ng/L) > USEPA HA (70 ng/L)
  - No groundwater obtained at AOI 2
- Soil – PFOS & PFOA detected at concentrations several orders of magnitude below SLs; PFBS not detected
- Sediment – PFOA & PFOS detected; PFBS not detected
- Surface Water – PFOA, PFOS, PFBS not detected

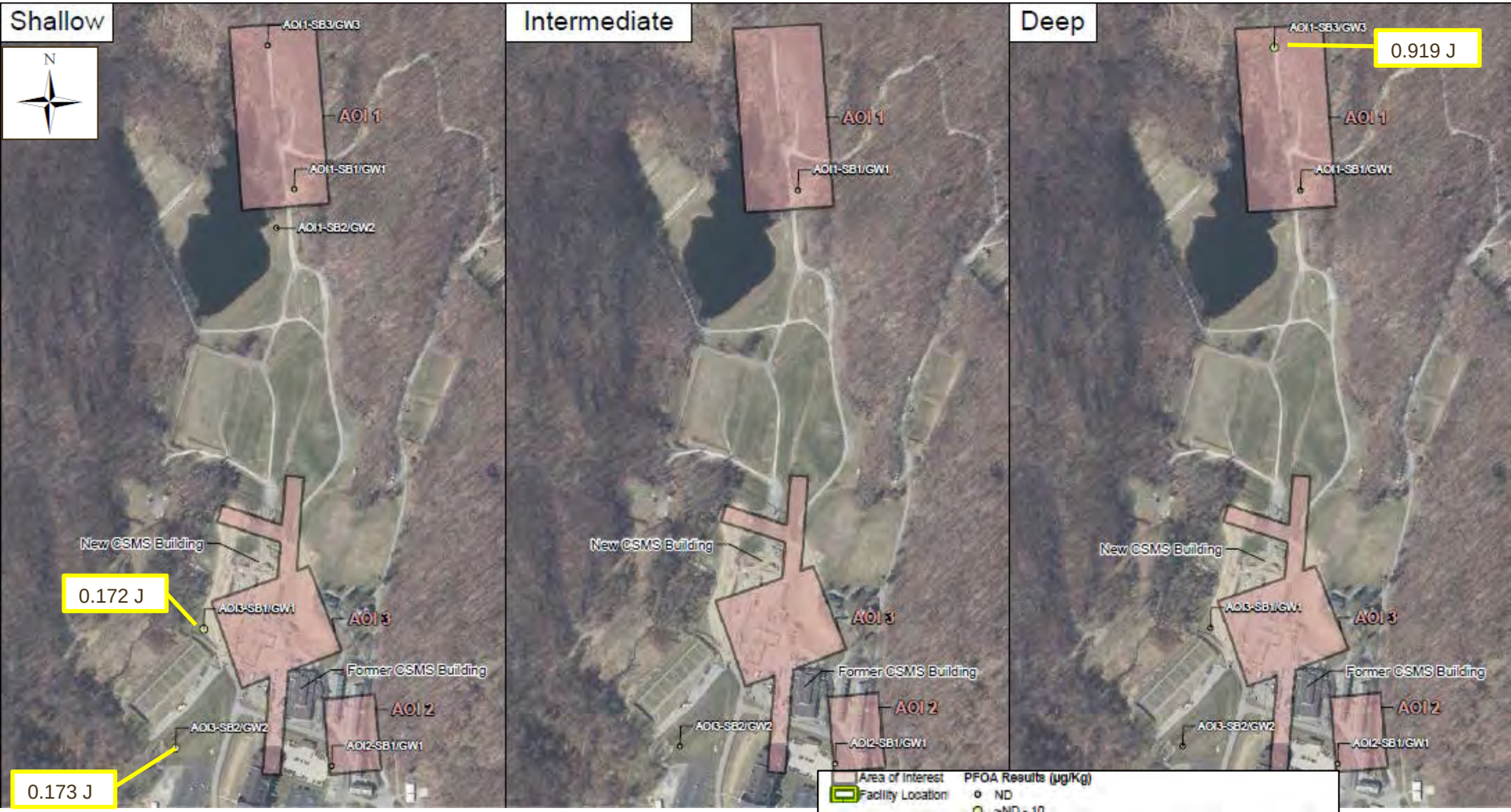
SI – Mobilization 1

Summary of Findings, PFOS in Soil



SI – Mobilization 1

Summary of Findings, PFOA in Soil



SI – Mobilization 1

Summary of Findings, PFOA and PFOS in Groundwater

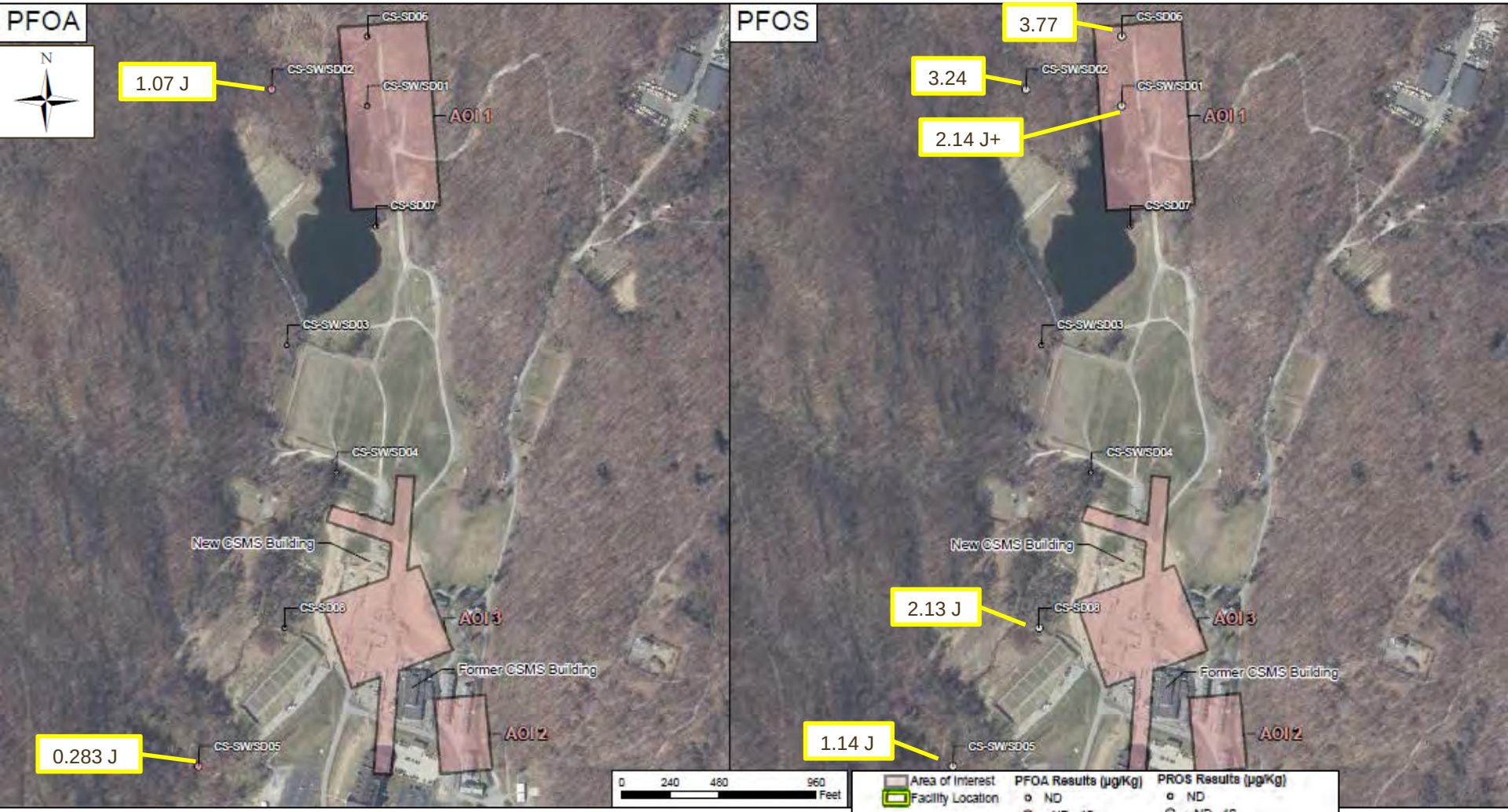






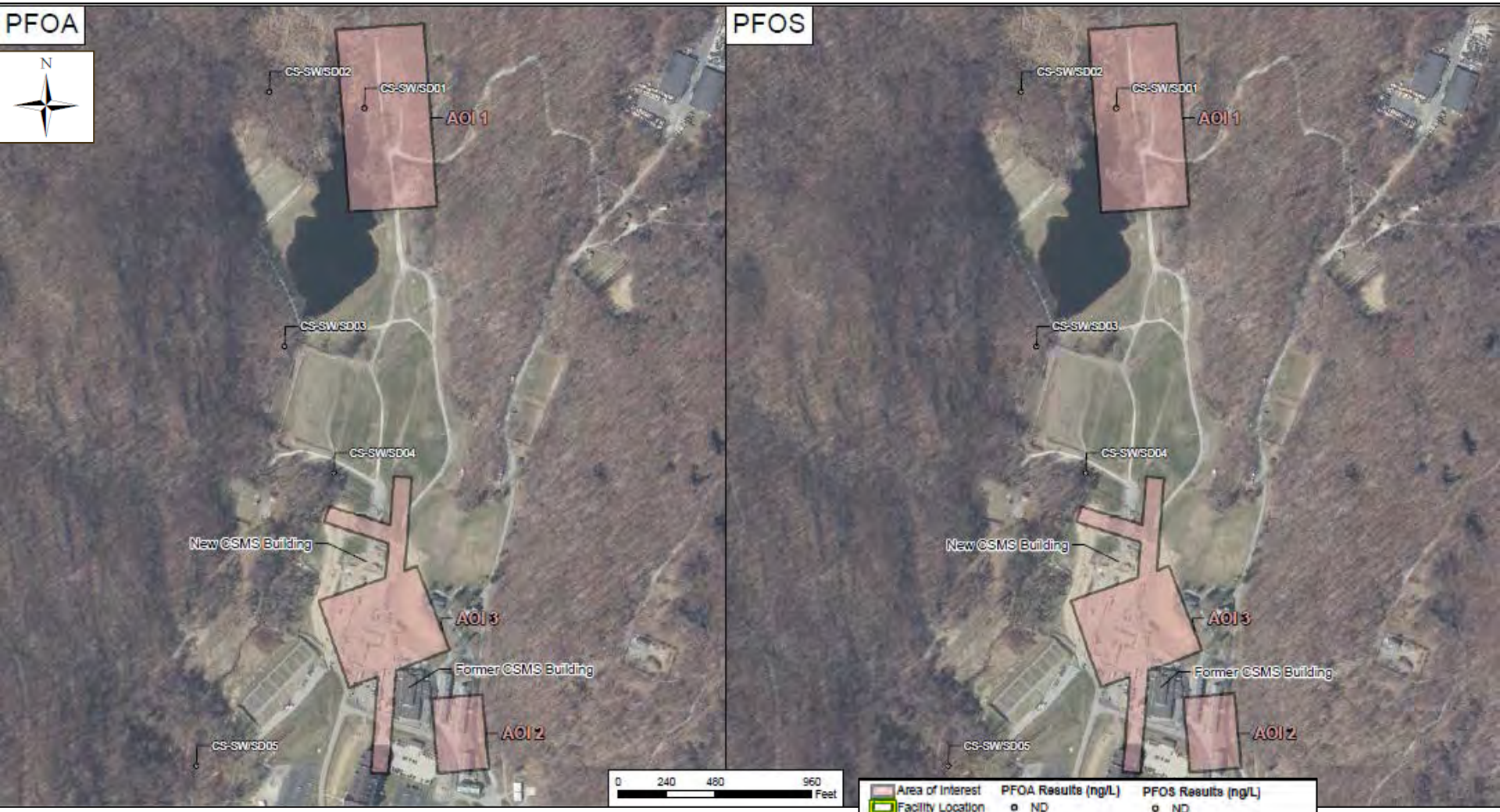
SI – Mobilization 1

Summary of Findings, PFOA and PFOS in Sediment



SI – Mobilization 1

Summary of Findings, PFOA and PFOS in Surface Water



SI – Mobilization 1

Summary of Findings

AOI	Potential PFAS Release Area	Soil – Source Area	Groundwater – Source Area	Groundwater – Facility Boundary
1	Former Fire Pit	◐	●	NA
2	Former Fire Station	◐	◐	NA
3	Former Airfield	◐	◐	NA
3	Former NYS AFSA	◐	◐	NA

Legend:

NYS = New York State

AFSA = Academy of Fire Science Annex

AOI = Area of Interest

NA = not applicable

● = detected exceedance of screening levels

◐ = detected; no exceedance of screening levels

○ = not detected

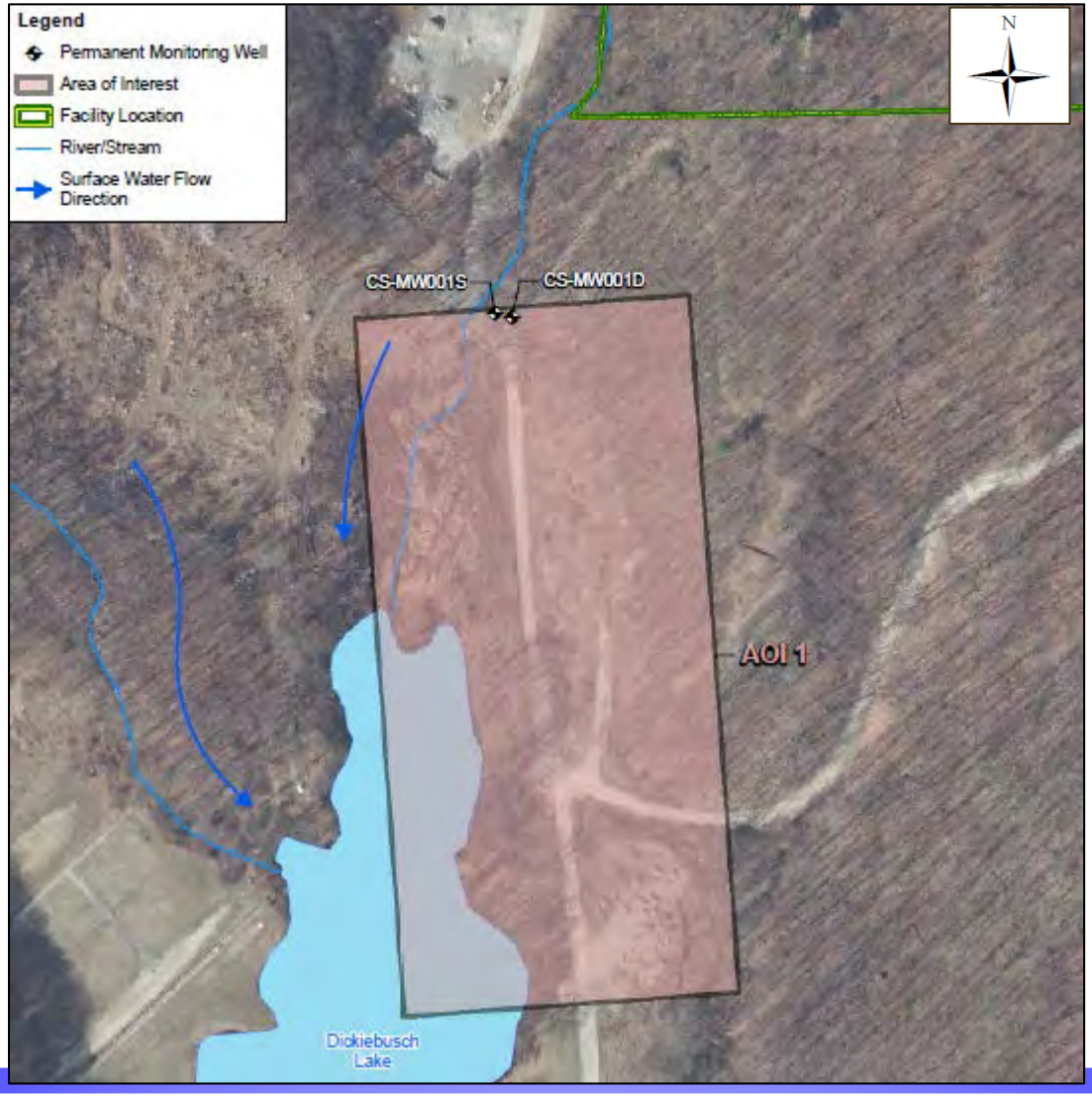
- Uncertainties
  - Source upgradient of SL exceedance at AOI1-GW3
  - Source of USEPA HA exceedance at potable Well A/1 (March 2020; downgradient of AOIs)

SI – Mobilization 2
Summary of Approach

- AOI 1 –
  - 2 permanent wells north (upgradient) of AOI1-GW3: shallow (overburden) and deep (bedrock)
  - Soil samples collected at surface and above water table
- AOI 2 –
  - Soil samples to 4 ft under concrete/asphalt; target low-lying areas where fluids from firetrucks and equipment washing suspected to accumulate
- AOI 3 –
  - 1 shallow permanent well near the potential release area
  - Soil samples collected at surface and above water table
- Downgradient of AOI 2 & 3 –
  - 2 deep permanent wells to evaluate the bedrock aquifer flow path between potential release areas at AOI 2 & 3 and Wells A and B
  - Soil samples collected above water table

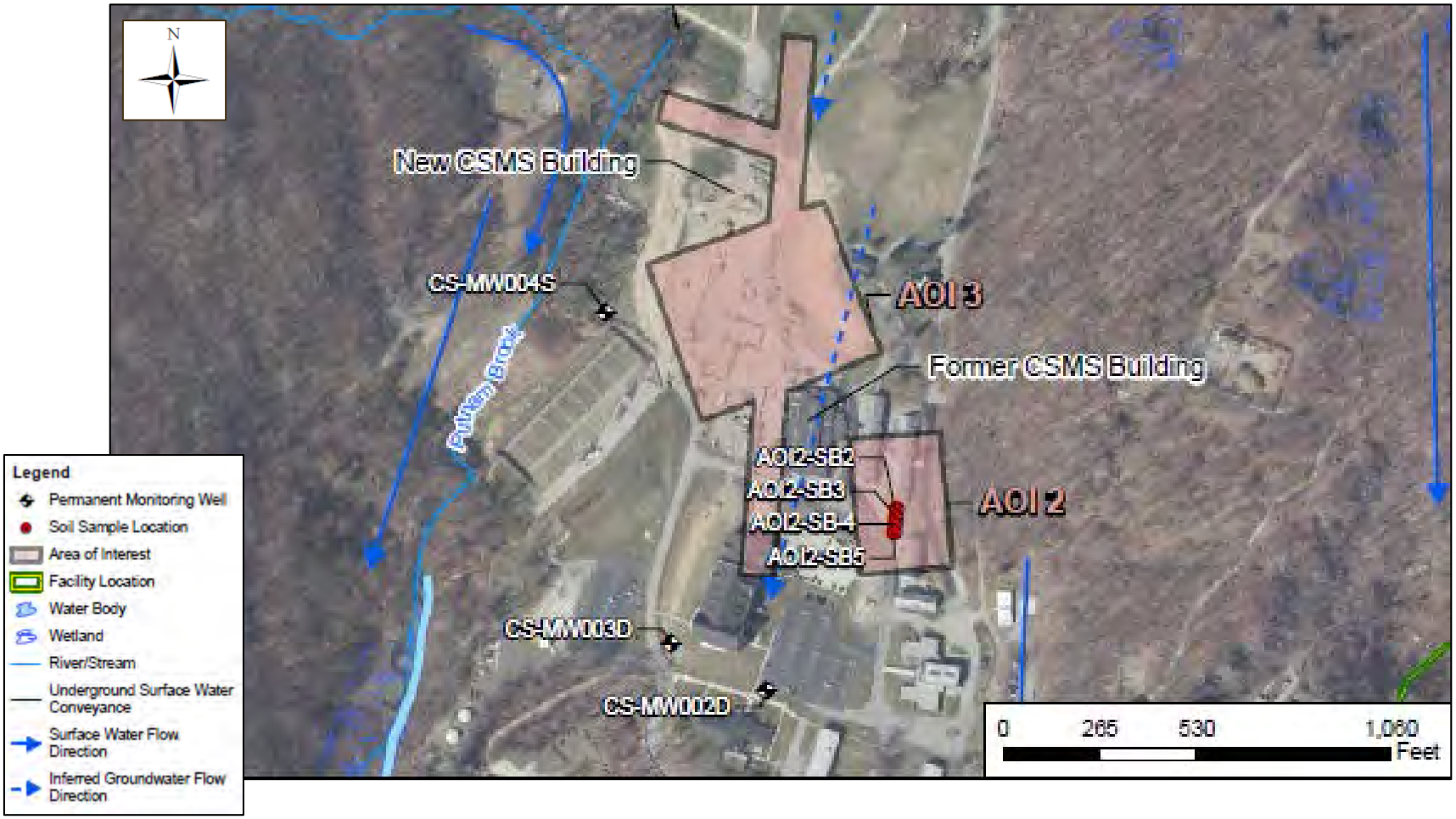
SI – Mobilization 2

Summary of Approach, AOI 1



SI – Mobilization 2

Summary of Approach, AOI 2 and AOI 3



SI – Mobilization 2
Sample Summary

AOI	Potential PFAS Release Area	# of Sonic Borings	# of HA Locations	Approximate Depth (feet bgs)	Groundwater Samples	Soil Samples
1	Former Fire Pit	1 (2 wells)	0	Shallow: 20 Deep: 50-80 (anticipated)	2	2
2	Former Fire Station	0	4	0-2 and 2-4	0	8
2 and 3	Former Fire Station and Former Airfield/ Former NYS Fire Inspection Agency	2	0	50-80 (anticipated)	2	2
3	Former Airfield/ Former NYS Fire Inspection Agency	1	0	20	1	2
Total (not including QC)		4	4	--	5	14

- Sample locations will be refined in the field
  - Confirm placement is accessible and will meet DQOs prior to the utility mark-out and locate

SI – Analytical Parameters

Perfluorooctanesulfonic acid (PFOS)	Perfluoroheptanoic acid (PFHpA)
Perfluorohexanesulfonic acid (PFHxS)	Perfluorononanoic acid (PFNA)
Perfluorooctanoic acid (PFOA)	Perfluorobutanesulfonic acid (PFBS)
Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)
Perfluorodecanoic acid (PFDA)	Perfluorotetradecanoic acid (PFTeDA)
Perfluorododecanoic acid (PFDoA)	Perfluorohexanoic acid (PFHxA)
Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUdA)
6:2 Fluorotelomer sulfonate (6:2 FTS)	8:2 Fluorotelomer sulfonate (8:2 FTS)

- Analysis completed by DoD-ELAP/NELAP-certified laboratory
- Level IV deliverable will be received from the laboratory
- Data will undergo Stage 2b data validation as defined in the DoD General Data Validation Guidelines

SI – Mobilization 2 Schedule

- Finalize SSI UFP-QAPP Addendum
  - Draft Final submitted: 2 November 2020
  - Document review time for NYSDEC and other stakeholders
  - Address comments and issue Final: January 2021
  - Field Investigation: February 2021 (weather permitting)

Questions and Open Discussion

- Coordination
  - Utility mark-out and clearance process
  - Investigation-derived waste (IDW) Handling
  - Site Walk
- Schedule

Acronyms

- AFFF – aqueous film forming foam
- AOI – areas of interest
- ARNG – Army National Guard
- bgs – below ground surface
- CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
- COVID-19 – Coronavirus Disease 2019
- CSM – conceptual site model
- DOH – Department of Health
- DQO – data quality objective
- ELAP – Environmental Laboratory Accreditation Program
- EM – Engineering Manual
- HA – Health Advisory
- IDW – investigation-derived waste
- NYARNG – New York Army National Guard
- NYSDEC – New York State Department of Environmental Conservation
- NYSDOH – New York State Department of Health
- NELAP – National Environmental Laboratory Accreditation Program
- OSD – Office of the Secretary of Defense
- PA – Preliminary Assessment
- PFAS – per- and polyfluoroalkyl substances
- PFBS – perfluorobutanesulfonic acid
- PFOS – perfluorooctanesulfonic acid
- PFOA – perfluorooctanoic acid
- SI – Site Inspection
- SSHP – Site Safety and Health Plan
- TPP – Technical Project Planning
- UFP-QAPP – Uniform Federal Policy-Quality Assurance Project Plan
- USACE – United States Army Corps of Engineers

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Appendix E
Boring Logs and Well Construction Forms

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WELL NUMBER CS-MW001D

AECOM AECOM

TOTAL DEPTH 30 FT BGS
PAGE 1 OF 2

CLIENT ARNG, USACE Baltimore District
PROJECT NAME ARNG PFAS - Camp Smith
PROJECT NUMBER 60552172
SITE NAME Camp Smith
DATE STARTED 7/20/21 **COMPLETED** 7/22/21
EASTING 15006510.62 **NORTHING** 1931342.004
DRILLING CONTRACTOR Cascade
GROUND ELEVATION 93.37 ft **HOLE SIZE** 7 inches
DRILLING EQUIPMENT Boart Longyear ProSonic T600
GROUND WATER LEVELS:
DRILLING METHOD Roto Sonic
▽ **AT TIME OF DRILLING** 10.00 ft / Elev 83.37 ft
LOGGED BY J. Christopher **CHECKED BY** J. Hollingsworth
AT TIME OF SAMPLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION		ENVIRONMENTAL DATA	WELL DIAGRAM
0									
5	GMAC	100	ML		0.0	GRAVELLY SILT WITH COBBLES, moist, light brown, moderately tight with some (30-45%) fine to coarse gravel, little (15-25%) fine- to medium-grained sand, trace fine cobbles, and trace clay. Little vegetation present.	93.4	CS-MW001S-00-02	Annular Seal Type: Bentonite Medium Chip Top: 2 ft bgs Bottom: 5 ft bgs Filter Pack Type: #0 Filter Sand Top: 5 ft bgs Bottom: 18 ft bgs
10	GMAC	100	SP		5.5	SILTY SAND, moist, brown (10YR 4/3), fine-grained, moderately loose with little (15-25%) silt. Fine cobble present at 5.5 feet bgs.	87.9		
			ML		6.5	SILT WITH SAND, moist, brown with 15-25% fine-grained sand.	86.9	CS-MW001D-08-10	Well Casing Type: Schedule 40 PVC Diameter: 2 in Top: 0 ft bgs Bottom: 20 ft bgs
15	GMAC	86	SP		10.5	SILTY SAND, wet, brown (10YR 4/3), fine-grained, loose with little (15-25%) silt.	82.9		
20	GMAC	100			13.5	POORLY GRADED SAND WITH GRAVEL AND COBBLES, wet, brown (10YR 4/3), coarse-grained with >15% gravel and trace cobbles and silt.	79.9		Annular Seal Type: Bentonite Medium Chip Top: 18 ft bgs Bottom: 19 ft bgs
25	GMAC	36			18.0	BEDROCK, wet, grayish brown (10YR 5/2), hard, pulverized.	75.4	CS-MW001D-GW	Filter Pack Type: #0 Filter Sand Top: 19 ft bgs Bottom: 30 ft bgs Well Screen Type: Schedule 40 PVC Slot Size: 0.01 in Top: 20 ft bgs Bottom: 30 ft bgs
30	GMAC	53							
	GMAC	75							

Bottom of borehole at 30.0 feet

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ARNG SMART LOG 8.5X11 - CINTAS LAUREL.GPJ - 10/8/21 13:31 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

WELL NUMBER CS-MW001D

AECOM AECOM

TOTAL DEPTH 30 FT BGS

CLIENT ARNG, USACE Baltimore District **PROJECT NAME** ARNG PFAS - Camp Smith

PROJECT NUMBER 60552172 **SITE NAME** Camp Smith

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM

Notes:
1. Headspace screening values represent total volatile organic vapors (referenced to an isobutylene standard) measured with a Photoionization Detector (PID) with 10.6 eV lamp.
2. Coordinates and elevation data in NAVD88 for vertical datum and UTM Zone 18N with WGS 84 Ellipsoid for horizontal datum.
3. CS-MW001S and CS-MW001D are a nested well pair.

ARNG SMART LOG 8.5X11 - CINTAS LAUREL.GPJ - 10/8/21 13:31 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

WELL NUMBER CS-MW001S

AECOM

TOTAL DEPTH 20 FT BGS
PAGE 1 OF 1

CLIENT ARNG, USACE Baltimore District
PROJECT NAME ARNG PFAS - Camp Smith
PROJECT NUMBER 60552172
SITE NAME Camp Smith
DATE STARTED 7/20/21 **COMPLETED** 7/22/21
EASTING 15006510.62 **NORTHING** 1931342.004
DRILLING CONTRACTOR Cascade
GROUND ELEVATION 93.37 ft **HOLE SIZE** 7 inches
DRILLING EQUIPMENT Boart Longyear ProSonic T600
GROUND WATER LEVELS:
DRILLING METHOD Roto Sonic
▽ **AT TIME OF DRILLING** 10.00 ft / Elev 83.37 ft
LOGGED BY J. Christopher **CHECKED BY** J. Hollingsworth
AT TIME OF SAMPLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
0	GMAC	100	ML		0.0 GRAVELLY SILT WITH COBBLES, moist, light brown, moderately tight with some (30-45%) fine to coarse gravel, little (15-25%) fine- to medium-grained sand, trace fine cobbles, and trace clay. Little vegetation present. 93.4	CS-MW001S-00-02
5			SP		5.5 SILTY SAND, moist, brown (10YR 4/3), fine-grained, moderately loose with little (15-25%) silt. Fine cobble present at 5.5 feet bgs. 87.9	
	GMAC	100	ML		6.5 SILT WITH SAND, moist, brown with 15-25% fine-grained sand. 86.9	CS-MW001D-08-10
10				▽		
	GMAC	86	SP		10.5 SILTY SAND, wet, brown (10YR 4/3), fine-grained, loose with little (15-25%) silt. 82.9	CS-MW001S-GW
15					13.5 POORLY GRADED SAND WITH GRAVEL AND COBBLES, wet, brown (10YR 4/3), coarse-grained with >15% gravel and trace cobbles and silt. 79.9	
	GMAC	100			18.0 BEDROCK, wet, grayish brown (10YR 5/2), hard, pulverized. 75.4	
20					Bottom of borehole at 20.0 feet.	

WELL DIAGRAM

Annular Seal
Type: Bentonite Medium Chip
Top: 2 ft bgs
Bottom: 5 ft bgs

Well Casing
Type: Schedule 40 PVC
Diameter: 2 in
Top: 0 ft bgs
Bottom: 7 ft bgs

Filter Pack
Type: #0 Filter Sand
Top: 5 ft bgs
Bottom: 18 ft bgs

Well Screen
Type: Schedule 40 PVC
Slot Size: 0.01 in
Top: 7 ft bgs
Bottom: 17 ft bgs

Annular Seal
Type: Bentonite Medium Chip
Top: 18 ft bgs
Bottom: 19 ft bgs

Filter Pack
Type: #0 Filter Sand
Top: 19 ft bgs
Bottom: 20 ft bgs

Notes:
1. Headspace screening values represent total volatile organic vapors (referenced to an isobutylene standard) measured with a Photoionization Detector (PID) with 10.6 eV lamp.
2. Coordinates and elevation data in NAVD88 for vertical datum and UTM Zone 18N with WGS 84 Ellipsoid for horizontal datum.
3. CS-MW001S and CS-MW001D are a nested well pair. See CS-MW001D boring log for full lithology.

ARNG SMART LOG 8.5X11 - CINTAS LAUREL.GPJ - 10/8/21 13:31 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

WELL NUMBER CS-MW002D

AECOM AECOM

TOTAL DEPTH 140 FT BGS

CLIENT ARNG, USACE Baltimore District
PROJECT NAME ARNG PFAS - Camp Smith
PROJECT NUMBER 60552172
SITE NAME Camp Smith
DATE STARTED 7/23/21 **COMPLETED** 7/24/21
EASTING 15002516.49 **NORTHING** 1931383.612
DRILLING CONTRACTOR Cascade
GROUND ELEVATION 105.15 ft **HOLE SIZE** 6 inches
DRILLING EQUIPMENT Boart Longyear ProSonic T600
GROUND WATER LEVELS:
DRILLING METHOD Roto Sonic
▽ **AT TIME OF DRILLING** 40.00 ft / Elev 65.15 ft
LOGGED BY J. Christopher **CHECKED BY** J. Hollingsworth
AT TIME OF SAMPLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION		ENVIRONMENTAL DATA	WELL DIAGRAM
0					0.0	TOPSOIL.	105.2		
5	GMAC	100	SM		2.0	SILTY SAND WITH GRAVEL, moist, brown (7.5YR 4/4), fine-grained, moderately tight with some (30-45%) fine to medium gravel and >15% silt.	103.2		
10	GMAC	100	SW		7.5	WELL-GRADED SAND WITH GRAVEL, moist, brown (7.5YR 4/4), fine- to medium-grained, loose with little (15-25%) fine gravel and trace silt.	97.7		
			ML		9.0	SANDY SILT, moist, brown (7.5YR 4/4), moderately tight with some (30-45%) fine-grained sand.	96.2		
15	GMAC	30	SW		11.0	WELL-GRADED SAND WITH GRAVEL, moist, brown (7.5YR 4/4), fine- to medium-grained, loose with little (15-25%) fine gravel and trace silt.	94.2		
20	GMAC	100			18.5	Changes to dry.	86.7		
25	GMAC	30	SM		21.0	SILTY SAND WITH GRAVEL, moist, brown (7.5YR 4/4), fine-grained, moderately loose with little (15-25%) fine to medium gravel and >15% silt.	84.2		
30	GMAC	96	SW		25.5	WELL-GRADED SAND, moist, brown (7.5YR 4/4), fine- to medium-grained, loose with trace fine gravel and trace silt.	79.7		
			SM		28.0	SILTY SAND, moist, light brown, fine-grained, loose with some (30-45%) silt.	77.2		

Annular Seal
Type: Bentonite Medium Chip
Top: 5 ft bgs
Bottom: 88 ft bgs

Well Casing
Type: Schedule 40 PVC
Diameter: 2 in
Top: 0 ft bgs
Bottom: 90 ft bgs

ARNG SMART LOG 8.5X11 - CINTAS LAUREL.GPJ - 10/8/21 13:31 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

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WELL NUMBER CS-MW002D

AECOM AECOM

TOTAL DEPTH 140 FT BGS

CLIENT ARNG, USACE Baltimore District **PROJECT NAME** ARNG PFAS - Camp Smith

PROJECT NUMBER 60552172 **SITE NAME** Camp Smith

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		ENVIRONMENTAL DATA	WELL DIAGRAM
30			SM		28.0 SILTY SAND, moist, light brown, fine-grained, loose with some (30-45%) silt. *(continued)*	77.2		
					33.0 Changes to brown (7.5YR 4/4), moderately loose.	72.2		
35	GMAC	50			35.5 Changes to dry, pink (7.5YR 7/3), loose with little (15-25%) silt and trace fine gravel.	69.7		
40				▽			CS-MW002D-SB-39-41	
	GMAC	94			40.5 Changes to wet.	64.7		
45					45.5 Changes to brown (7.5YR 4/4), moderately dense with trace fine-grained sand.	59.7		**Well Casing** Type: Schedule 40 PVC Diameter: 2 in Top: 0 ft bgs Bottom: 90 ft bgs
	GMAC	70	ML		48.0 SILT, wet, brown (7.5YR 4/4), moderately tight with trace fine-grained sand and clay.	57.2		
50			SM		50.5 SILTY SAND, wet, brown, moderately loose, fine-grained with some (30-45%) silt.	54.7		
	GMAC	96	ML		53.0 SILT, wet, brown (7.5YR 4/4), moderately soft with trace fine-grained sand.	52.2		
55			SM		54.0 SILTY SAND, wet, brown, moderately loose, fine-grained with some (30-45%) silt.	51.2		
	GMAC	100			56.0 Changes to moderately dense.	49.2		
60					59.0 SILT, wet, brown, moderately tight with trace clay.	46.2		
	GMAC	100			62.5 Clay lens present.	42.7	CS-MW002D-SB-62-63	

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ARNG SMART LOG 8.5X11 - CINTAS LAUREL.GPJ - 10/8/21 13:31 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

WELL NUMBER CS-MW002D

AECOM AECOM

TOTAL DEPTH 140 FT BGS

CLIENT ARNG, USACE Baltimore District **PROJECT NAME** ARNG PFAS - Camp Smith

PROJECT NUMBER 60552172 **SITE NAME** Camp Smith

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		ENVIRONMENTAL DATA	WELL DIAGRAM
65					59.0 SILT, wet, brown, moderately tight with trace clay. *(continued)*	46.2		
	GMAC	94			65.5 SANDY SILT, wet, brown (7.5YR 4/4), moderately dense with some (30-45%) fine-grained sand.	39.7		
					68.5 Clay lens present.	36.7		
70					69.5 Clay lens present.	35.7		
	GMAC	92			70.0 SILT, wet, moderately tight, varved.	35.2		
					71.5 Fine-grained sand lens.	33.7		
75					74.0 Clay lens present.	31.2		
	GMAC	86			76.5 Clay lens present.	28.7		**Well Casing** Type: Schedule 40 PVC Diameter: 2 in Top: 0 ft bgs Bottom: 90 ft bgs
80					80.5 Changes to dark grayish brown (2.5Y 4/2) with trace clay.	24.7		
	GMAC	100						
85								
	GMAC	100			86.5 Clay lens present.	18.7		**Filter Pack** Type: #0 Filter Sand Top: 88 ft bgs Bottom: 115 ft bgs
					88.0 Clay lens present.	17.2		
90					88.5 Changes to light brown with trace clay and fine-grained sand.	16.7		
	GMAC	100	SM		91.0 SILTY SAND WITH GRAVEL, wet, dark reddish brown (5YR 3/2), loose, fine- to coarse-grained with some (30-45%) fine to coarse gravel and little (15-25%) silt.	14.2		**Well Screen** Type: Schedule 40 PVC Slot Size: 0.01 in Top: 90 ft bgs Bottom: 110 ft bgs
95								
	GMAC	56						

ARNG SMART LOG 8.5X11 - CINTAS LAUREL.GPJ - 10/8/21 13:31 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

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WELL NUMBER CS-MW002D

AECOM AECOM

TOTAL DEPTH 140 FT BGS

CLIENT ARNG, USACE Baltimore District **PROJECT NAME** ARNG PFAS - Camp Smith

PROJECT NUMBER 60552172 **SITE NAME** Camp Smith

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		ENVIRONMENTAL DATA	WELL DIAGRAM
100			SM		91.0	14.2		
					100.0 NO RECOVERY.	5.2	CS-MW002D	
105	GMAC	0						**Well Screen** Type: Schedule 40 PVC Slot Size: 0.01 in Top: 90 ft bgs Bottom: 110 ft bgs
110	GMAC	0						
115	GMAC	100	SW		110.0 WELL-GRADED SAND WITH GRAVEL, wet, brown, loose, fine- to coarse-grained sand with fine to coarse gravel and trace silt.	-4.8		**Backfill** Top: 115 ft bgs Bottom: 140 ft bgs
120	GMAC	100	SM		117.5 SILTY SAND, wet, grayish brown (2.5Y 5/2), moderately loose, fine-grained with >15% silt.	-12.4		
125	GMAC	44			121.0 Trace medium gravel present.	-15.9		
130	GMAC	82			126.5 Changes to little (15-25%) silt with no gravel present.	-21.4		
	GMAC	90			130.5 Trace medium gravel present from 130.5 to 136.5 feet bgs.	-25.4		

ARNG SMART LOG 8.5X11 - CINTAS LAUREL.GPJ - 10/8/21 13:31 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

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WELL NUMBER CS-MW002D

AECOM AECOM

TOTAL DEPTH 140 FT BGS

CLIENT ARNG, USACE Baltimore District **PROJECT NAME** ARNG PFAS - Camp Smith

PROJECT NUMBER 60552172 **SITE NAME** Camp Smith

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION		ENVIRONMENTAL DATA	WELL DIAGRAM
135			SM		117.5	SILTY SAND, wet, grayish brown (2.5Y 5/2), moderately loose, fine-grained with >15% silt. *(continued)*	-12.4		
140	GMAC	82							

Bottom of borehole at 140.0 feet.

Notes:

1. Headspace screening values represent total volatile organic vapors (referenced to an isobutylene standard) measured with a Photoionization Detector (PID) with 10.6 eV lamp.
2. Coordinates and elevation data in NAVD88 for vertical datum and UTM Zone 18N with WGS 84 Ellipsoid for horizontal datum.

ARNG SMART LOG 8.5X11 - CINTAS LAUREL.GPJ - 10/8/21 13:31 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

WELL NUMBER CS-MW003S

AECOM AECOM

TOTAL DEPTH 50 FT BGS

CLIENT ARNG, USACE Baltimore District
PROJECT NAME ARNG PFAS - Camp Smith
PROJECT NUMBER 60552172
SITE NAME Camp Smith
DATE STARTED 7/25/21 **COMPLETED** 7/25/21
EASTING 15002590.95 **NORTHING** 1931138.924
DRILLING CONTRACTOR Cascade
GROUND ELEVATION 102.31 ft **HOLE SIZE** 6 inches
DRILLING EQUIPMENT Boart Longyear ProSonic T600
GROUND WATER LEVELS:
DRILLING METHOD Roto Sonic
▽ **AT TIME OF DRILLING** 44.00 ft / Elev 58.31 ft
LOGGED BY J. Christopher **CHECKED BY** J. Hollingsworth
AT TIME OF SAMPLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION		ENVIRONMENTAL DATA
0					0.0	TOPSOIL, dark reddish gray (5YR 4/2).	102.3	
5	GMAC	100	SM		1.5	SILTY SAND WITH GRAVEL, moist, light brown, moderately tight, fine- to coarse-grained with little (15-25%) silt and little (15-25%) fine to medium gravel.	100.8	
10	GMAC	100						
15	GMAC	56						
20	GMAC	100			19.0	Changes to dry, dark reddish gray (5YR 4/2).	83.3	
25	GMAC	50			22.5	Changes to moist, dark reddish gray (5YR 4/2), moderately loose.	79.8	
30					29.0	Changes to wet.	73.3	

Annular Seal
Type: Bentonite Medium Chip
Top: 5 ft bgs
Bottom: 38 ft bgs

Well Casing
Type: Schedule 40 PVC
Diameter: 2 in
Top: 0 ft bgs
Bottom: 40 ft bgs

ARNG SMART LOG 8.5X11 - CINTAS LAUREL.GPJ - 10/8/21 13:31 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

(Continued Next Page)

WELL NUMBER CS-MW003S

AECOM

TOTAL DEPTH 50 FT BGS

CLIENT ARNG, USACE Baltimore District **PROJECT NAME** ARNG PFAS - Camp Smith

PROJECT NUMBER 60552172 **SITE NAME** Camp Smith

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION		ENVIRONMENTAL DATA	WELL DIAGRAM
30					22.5	Changes to moist, dark reddish gray (5YR 4/2), moderately loose. *(continued)*	79.8		
	GMAC	80	ML		32.0	SILT, moist, strong brown (7.5YR 5/6), moderately tight.	70.3		
			SM		33.5	SILTY SAND, moist, dark yellowish brown (10YR 4/6), moderately loose, fine-grained with little (15-25%) silt.	68.8		**Well Casing** Type: Schedule 40 PVC Diameter: 2 in Top: 0 ft bgs Bottom: 40 ft bgs
35									
	GMAC	100							**Filter Pack** Type: #0 Filter Sand Top: 38 ft bgs Bottom: 50 ft bgs
40					39.0	Silt content increases to some (30-45%).	63.3		
	GMAC	100			41.0	Changes to moderately tight.	61.3	CS-MW003S-SB-40-42	
			ML		44.0	SILT, wet, brown (7.5YR 5/4), moderately tight.	58.3	CS-MW003S	**Well Screen** Type: Schedule 40 PVC Slot Size: 0.01 in Top: 40 ft bgs Bottom: 50 ft bgs
45									
	GMAC	100			47.0	Fine-grained sand lens present.	55.3		
50					49.5	Changes to moist.	52.8		

Bottom of borehole at 50.0 feet.

Notes:
1. Headspace screening values represent total volatile organic vapors (referenced to an isobutylene standard) measured with a Photoionization Detector (PID) with 10.6 eV lamp.
2. Coordinates and elevation data in NAVD88 for vertical datum and UTM Zone 18N with WGS 84 Ellipsoid for horizontal datum.

ARNG SMART LOG 8.5X11 - CINTAS LAUREL.GPJ - 10/8/21 13:31 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

WELL NUMBER CS-MW004S

AECOM AECOM

TOTAL DEPTH 55 FT BGS

CLIENT ARNG, USACE Baltimore District
PROJECT NAME ARNG PFAS - Camp Smith
PROJECT NUMBER 60552172
SITE NAME Camp Smith
DATE STARTED 7/19/21 **COMPLETED** 7/20/21
EASTING 15003539.5 **NORTHING** 1930958.008
DRILLING CONTRACTOR Cascade
GROUND ELEVATION 73.97 ft **HOLE SIZE** 6 inches
DRILLING EQUIPMENT Boart Longyear ProSonic T600
GROUND WATER LEVELS:
DRILLING METHOD Roto Sonic
▽ **AT TIME OF DRILLING** 9.00 ft / Elev 64.97 ft
LOGGED BY J. Christopher **CHECKED BY** J. Hollingsworth
AT TIME OF SAMPLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION		ENVIRONMENTAL DATA
0			SM		0.0	SILTY SAND WITH GRAVEL, dry, brown (7.5YR 4/2), moderately tight, fine- to medium-grained with some (30-45%) silt and little (15-25%) fine to coarse gravel. Trace vegetation.	74.0	CS-MW004S-SB-00-02
	GMAC	100	ML		2.0	SILT, dry, olive brown (2.5Y 4/3), tight with some (30-45%) clay and trace fine-grained sand.	72.0	
5					4.0	Changes to moist, blue gray.	70.0	
	GMAC	44	CL		6.5	CLAY, moist, light brown and gray laminae (10YR 6/2), tight with silt.	67.5	CS-MW004S-SB-07-09
10					9.0	▽ Changes to dark brown (7.5YR 3/2) and gray with fine-grained sand.	65.0	
	GMAC	66	ML		10.5	SILT, wet, light gray, moderately loose with little (15-25%) clay.	63.5	CS-MW004S-GW
15								
	GMAC	90			16.0	Clay lens present.	58.0	
					16.5	Clay lens present.	57.5	
					18.0	Clay lens present.	56.0	
20					19.5	Clay lens present.	54.5	
	GMAC	56			20.0	Changes to moderately loose to loose.	54.0	
					22.0	Clay lens present.	52.0	
					23.0	Clay lens present.	51.0	
25					24.5	Clay lens present.	49.5	
	GMAC	96			25.0	Clay lens present.	49.0	
					25.5	Clay lens present.	48.5	
					26.5	Clay lens present.	47.5	
					27.0	Clay lens present.	47.0	
					27.5	Clay lens present.	46.5	
					28.0	SILT, wet, light brown, moderately tight, silt-clay-fine sand varves.	46.0	
30			SP		29.5		44.5	

WELL DIAGRAM

Annular Seal
Type: Bentonite Medium Chip
Top: 2 ft bgs
Bottom: 5 ft bgs

Well Casing
Type: Schedule 40 PVC
Diameter: 2 in
Top: 0 ft bgs
Bottom: 7 ft bgs

Filter Pack
Type: #0 Filter Sand
Top: 5 ft bgs
Bottom: 22 ft bgs

Well Screen
Type: Schedule 40 PVC
Slot Size: 0.01 in
Top: 7 ft bgs
Bottom: 17 ft bgs

Backfill
Top: 22 ft bgs
Bottom: 55 ft bgs

ARNG SMART LOG 8.5X11 - CINTAS LAUREL.GPJ - 10/8/21 13:31 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

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WELL NUMBER CS-MW004S

AECOM AECOM

TOTAL DEPTH 55 FT BGS
PAGE 2 OF 2

CLIENT ARNG, USACE Baltimore District **PROJECT NAME** ARNG PFAS - Camp Smith

PROJECT NUMBER 60552172 **SITE NAME** Camp Smith

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION		ENVIRONMENTAL DATA	WELL DIAGRAM
30			SP		29.5	POORLY GRADED SAND, wet, yellowish brown (10YR 5/4), moderately loose, fine-grained. *(continued)*	44.5		
35	GMAC	60							
40	GMAC	98			37.0	Silt/clay lens present.	37.0		
	GMAC	94	SM		40.5	SILTY SAND, wet, yellowish brown (10YR 5/4), moderately loose, fine-grained with little (15-25%) silt.	33.5		
45			SW		43.0	WELL-GRADED SAND, wet, yellowish brown (10YR 5/4), moderately loose, fine-grained with little (15-25%) medium-grained sand.	31.0		
	GMAC	84	GC		46.5	Silt/clay lens present.	27.5		
50					47.0	TILL sampled as CLAYEY GRAVEL WITH SAND, moist, reddish gray, moderately tight, fine to coarse with some (30-45%) clay and silt, and little (15-25%) medium- to coarse-grained sand.	27.0		
	GMAC	74							
55					54.0	GNEISS.	20.0		

Bottom of borehole at 55.0 feet.

Notes:
1. Headspace screening values represent total volatile organic vapors (referenced to an isobutylene standard) measured with a Photoionization Detector (PID) with 10.6 eV lamp.
2. Coordinates and elevation data in NAVD88 for vertical datum and UTM Zone 18N with WGS 84 Ellipsoid for horizontal datum.

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WELL NUMBER AOI1-SB1

AECOM

TOTAL DEPTH 20 FT BGS

CLIENT ARNG, USACE Baltimore District
PROJECT NAME Camp Smith SI
PROJECT NUMBER 60552172
SITE NAME AOI 1
DATE STARTED 12/11/19 **COMPLETED** 12/11/19
EASTING N/A **NORTHING** N/A
DRILLING CONTRACTOR Cascade
GROUND ELEVATION N/A **HOLE SIZE** 2.25 inches
DRILLING EQUIPMENT Geoprobe
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▽ **AT TIME OF DRILLING** 14.00 ft
LOGGED BY S. Kalemba **CHECKED BY** J. Hollingsworth
AT END OF DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0.0			SC		0.0 CLAYEY SAND, moist, brown, medium-grained, poorly sorted, loose with >15% clay.	AOI1-SB1-0.5-1	
		100					
2.5		75					
		40			3.0 Trace amounts of gravel present.		
			ML		4.0 SANDY SILT, dry, yellowish orange, non-plastic, medium stiffness with >30% sand.		
5.0		40				AOI1-SB1-6-8	**Well Casing** Diameter: 1 in Top: 0 ft bgs Bottom: 15 ft bgs
7.5							
		100	SM		9.0 SILTY SAND, wet, brown, medium-grained, poorly graded, moderately dense with 30-45% silt.		
10.0			CL		10.0 LEAN CLAY, moist, yellowish orange, medium plasticity, soft with <50% silt.		
		100	SM		11.0 SILTY SAND, moist, yellowish orange, coarse-grained, poorly graded, dense with >30% silt.		
12.5						AOI1-SB1-12-14	
		100			▽		
15.0			SW		14.5 WELL-GRADED SAND WITH GRAVEL, wet, brown, coarse-grained, dense with >15% gravel and trace amounts of silt.		

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ARNG SMART LOG 8.5X11_V1 - GRAYLING-CANTONEMENT_L MARGRETHE.GPJ - 1/15/20 11:55 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

WELL NUMBER AOI1-SB1

AECOM

TOTAL DEPTH 20 FT BGS

CLIENT ARNG, USACE Baltimore District **PROJECT NAME** Camp Smith SI

PROJECT NUMBER 60552172 **SITE NAME** AOI 1

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
15.0			SW		14.5 WELL-GRADED SAND WITH GRAVEL, wet, brown, coarse-grained, dense with >15% gravel and trace amounts of silt. *(continued)*		
17.5		80				AOI1-GW1	**Well Screen** Top: 15 ft bgs Bottom: 20 ft bgs
20.0					Bottom of borehole at 20.0 feet.		

Notes:
1. Headspace screening values represent total volatile organic vapors (referenced to an isobutylene standard) measured with a Photoionization Detector (PID) with 10.6 eV lamp.
2. Coordinates and elevation data in NAVD88 for vertical datum and NAD83/91 for horizontal datum in New York State Plane.

ARNG SMART LOG 8.5X11_V1 - GRAYLING-CANTONEMENT_L MARGRETHE.GPJ - 1/15/20 11:55 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

WELL NUMBER AOI1-SB2

AECOM

TOTAL DEPTH 5 FT BGS
PAGE 1 OF 1

CLIENT ARNG, USACE Baltimore District
PROJECT NAME Camp Smith SI
PROJECT NUMBER 60552172
SITE NAME AOI 1
DATE STARTED 12/11/19 **COMPLETED** 12/11/19
EASTING N/A **NORTHING** N/A
DRILLING CONTRACTOR Cascade
GROUND ELEVATION N/A **HOLE SIZE** 2.25 inches
DRILLING EQUIPMENT Geoprobe
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▽ **AT TIME OF DRILLING** 0.50 ft
LOGGED BY S. Kalemba **CHECKED BY** J. Hollingsworth
AT END OF DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0.0		100			0.0 TOPSOIL.		
			CL		0.5 LEAN CLAY, wet, light gray, medium plasticity and stiffness with <50% silt and trace amounts of sand.	AOI1-SB2-0.5-1	
2.5		100				AOI1-GW2	**Well Screen** Top: 0 ft bgs Bottom: 5 ft bgs
5.0					Bottom of borehole at 5.0 feet.		

Notes:
1. Headspace screening values represent total volatile organic vapors (referenced to an isobutylene standard) measured with a Photoionization Detector (PID) with 10.6 eV lamp.
2. Coordinates and elevation data in NAVD88 for vertical datum and NAD83/91 for horizontal datum in New York State Plane.

ARNG SMART LOG 8.5X11_V1 - GRAYLING-CANTONEMENT_L MARGRETHE.GPJ - 1/15/20 11:55 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

WELL NUMBER AOI1-SB3

AECOM

TOTAL DEPTH 5 FT BGS
PAGE 1 OF 1

CLIENT ARNG, USACE Baltimore District
PROJECT NAME Camp Smith SI
PROJECT NUMBER 60552172
SITE NAME AOI 1
DATE STARTED 12/11/19 **COMPLETED** 12/11/19
EASTING N/A **NORTHING** N/A
DRILLING CONTRACTOR Cascade
GROUND ELEVATION N/A **HOLE SIZE** 2.25 inches
DRILLING EQUIPMENT Geoprobe
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▽ **AT TIME OF DRILLING** 2.00 ft
LOGGED BY S. Kalemba **CHECKED BY** J. Hollingsworth
AT END OF DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0.0		100	SW		0.0 WELL-GRADED SAND WITH GRAVEL, moist, light gray, coarse-grained, moderately dense with >15% gravel and trace amounts of silt.	AOI1-SB3-0.5-1 AOI1-SB3-1-2	
2.5		40	GW		2.0 ▽ WELL-GRADED GRAVEL WITH SAND, wet, light gray, coarse-grained, moderately dense with >15% sand and trace amounts of silt.		**Well Screen** Top: 0 ft bgs Bottom: 5 ft bgs
		40	CL		3.0 SANDY LEAN CLAY, wet, yellowish orange, low plasticity, soft with 30% sand.		
5.0					Bottom of borehole at 5.0 feet.	AOI1-GW3	

Notes:
1. Headspace screening values represent total volatile organic vapors (referenced to an isobutylene standard) measured with a Photoionization Detector (PID) with 10.6 eV lamp.
2. Coordinates and elevation data in NAVD88 for vertical datum and NAD83/91 for horizontal datum in New York State Plane.

ARNG SMART LOG 8.5X11_V1 - GRAYLING-CANTONEMENT_L MARGRETHE.GPJ - 1/15/20 11:55 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

BORING NUMBER AOI2-SB1

AECOM AECOM

TOTAL DEPTH 26.5 FT BGS

CLIENT ARNG, USACE Baltimore District
PROJECT NAME Camp Smith SI
PROJECT NUMBER 60552172
SITE NAME AOI 2
DATE STARTED 12/10/19 **COMPLETED** 12/10/19
EASTING N/A **NORTHING** N/A
DRILLING CONTRACTOR Cascade
GROUND ELEVATION N/A **HOLE SIZE** 2.25 inches
DRILLING EQUIPMENT Geoprobe
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY S. Kalemba **CHECKED BY** J. Hollingsworth
AT END OF DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
0.0					0.0 TOPSOIL.	
			SM		0.5 SILTY SAND, moist, yellowish orange, fine-grained, poorly graded, moderately dense with 30-45% silt.	AOI2-SB1-0.5-1
2.5		100				
5.0						
7.5			SW		7.0 WELL-GRADED SAND WITH GRAVEL, moist, light brown, coarse-grained, moderately dense with >15% gravel.	
10.0		50				
12.5			SM		12.0 SILTY SAND, moist, light brown, fine-grained, poorly graded, moderately dense with >30% silt.	AOI2-SB1-11-13
		100				
15.0						

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ARNG SMART LOG 8.5X11_V1 - GRAYLING-CANTONEMENT_L MARGRETHE.GPJ - 1/15/20 11:55 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

BORING NUMBER AOI2-SB1

AECOM

TOTAL DEPTH 26.5 FT BGS

CLIENT ARNG, USACE Baltimore District **PROJECT NAME** Camp Smith SI

PROJECT NUMBER 60552172 **SITE NAME** AOI 2

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA
15.0			CL		15.0 LEAN CLAY, moist, yellowish orange, low plasticity, soft with <50% silt.	
17.5		85				
20.0			SP		20.0 POORLY GRADED SAND, moist, yellowish orange, medium-grained, moderately dense with trace amounts of silt.	AOI2-SB1-21-23
22.5		75	ML		22.5 SILT, damp, yellowish orange, low plasticity, medium stiffness with <50% clay.	
					23.0 NO RECOVERY, refusal.	
25.0						

Bottom of borehole at 26.5 feet.

Notes:
1. Headspace screening values represent total volatile organic vapors (referenced to an isobutylene standard) measured with a Photoionization Detector (PID) with 10.6 eV lamp.
2. Coordinates and elevation data in NAVD88 for vertical datum and NAD83/91 for horizontal datum in New York State Plane.

ARNG SMART LOG 8.5X11_V1 - GRAYLING-CANTONEMENT_L MARGRETHE.GPJ - 1/15/20 11:55 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

WELL NUMBER AOI3-SB1

AECOM

TOTAL DEPTH 5 FT BGS
PAGE 1 OF 1

CLIENT ARNG, USACE Baltimore District
PROJECT NAME Camp Smith SI
PROJECT NUMBER 60552172
SITE NAME AOI 3
DATE STARTED 12/10/19 **COMPLETED** 12/10/19
EASTING N/A **NORTHING** N/A
DRILLING CONTRACTOR Cascade
GROUND ELEVATION N/A **HOLE SIZE** 2.25 inches
DRILLING EQUIPMENT Geoprobe
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▽ **AT TIME OF DRILLING** 2.50 ft
LOGGED BY S. Kalemba **CHECKED BY** J. Hollingsworth
AT END OF DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0.0					0.0 TOPSOIL.		
			SC		0.5 CLAYEY SAND, moist, light brown, fine-grained, moderately dense with >15% clay and trace amounts of silt.	AOI3-SB1-0.5-1	
			CL		1.5 LEAN CLAY, moist, brown, medium plasticity, soft with trace amounts of sand.	AOI3-SB1-1-2	
2.5		100			▽ 2.5 Changes to wet.	AOI3-GW1	**Well Screen** Top: 0 ft bgs Bottom: 5 ft bgs
			SC		3.0 CLAYEY SAND, wet, brown, medium grained, moderately dense with >15% clay and trace amounts of silt.		
5.0							

Bottom of borehole at 5.0 feet.

Notes:
1. Headspace screening values represent total volatile organic vapors (referenced to an isobutylene standard) measured with a Photoionization Detector (PID) with 10.6 eV lamp.
2. Coordinates and elevation data in NAVD88 for vertical datum and NAD83/91 for horizontal datum in New York State Plane.

ARNG SMART LOG 8.5X11_V1 - GRAYLING-CANTONEMENT_L MARGRETHE.GPJ - 1/15/20 11:55 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

WELL NUMBER AOI3-SB2

AECOM

TOTAL DEPTH 25 FT BGS

CLIENT ARNG, USACE Baltimore District
PROJECT NAME Camp Smith SI
PROJECT NUMBER 60552172
SITE NAME AOI 3
DATE STARTED 12/10/19 **COMPLETED** 12/10/19
EASTING N/A **NORTHING** N/A
DRILLING CONTRACTOR Cascade
GROUND ELEVATION N/A **HOLE SIZE** 2.25 inches
DRILLING EQUIPMENT Geoprobe
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING 18.00 ft
LOGGED BY S. Kalemba **CHECKED BY** J. Hollingsworth
AT END OF DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0.0					0.0 TOPSOIL.		
			SW		0.5 WELL-GRADED SAND WITH GRAVEL, moist, light brown, medium- to coarse-grained, loose with >15% gravel.	AOI3-SB2-0.5-1	
2.5		100					
5.0					5.0 Changes to yellowish orange.		
7.5		65				AOI3-SB2-7-9	**Well Casing** Diameter: 1 in Top: 0 ft bgs Bottom: 18 ft bgs
10.0							
12.5		75			12.0 Gravel content decreasing with depth.		
15.0							

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ARNG SMART LOG 8.5X11_V1 - GRAYLING-CANTONEMENT_L MARGRETHE.GPJ - 1/15/20 11:55 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

WELL NUMBER AOI3-SB2

AECOM

TOTAL DEPTH 25 FT BGS
PAGE 2 OF 2

CLIENT ARNG, USACE Baltimore District **PROJECT NAME** Camp Smith SI

PROJECT NUMBER 60552172 **SITE NAME** AOI 3

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
15.0					5.0 Changes to yellowish orange. *(continued)*	AOI3-SB2-15-17	**Well Casing** Diameter: 1 in Top: 0 ft bgs Bottom: 18 ft bgs
17.5		60	SM		18.0 SILTY SAND, wet, yellowish orange, fine-grained, poorly graded, moderately dense with >15% silt.		
20.0			ML		20.0 SILT, wet, greenish gray, low plasticity, medium stiffness with <50% clay.		**Well Screen** Top: 18 ft bgs Bottom: 23 ft bgs
22.5		100				AOI3-GW2	
25.0					Bottom of borehole at 25.0 feet.		

Notes:
1. Headspace screening values represent total volatile organic vapors (referenced to an isobutylene standard) measured with a Photoionization Detector (PID) with 10.6 eV lamp.
2. Coordinates and elevation data in NAVD88 for vertical datum and NAD83/91 for horizontal datum in New York State Plane.

ARNG SMART LOG 8.5X11_V1 - GRAYLING-CANTONEMENT_L MARGRETHE.GPJ - 1/15/20 11:55 - C:\USERS\JACK.HOLLINGSWORTH\DOCUMENTS\GINT\ARNG\CAMP SMITH\CAMP SMITH.GPJ

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Appendix F
Analytical Results

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Appendix F Laboratory Data
Decontamination Water and Quality Control Samples
Site Inspection Report, Camp Smith

Area of Interest	DECON SOURCE																FIELD QC											
Sample ID	CS-DECON WATER				CASCADE-DECONWATER 11/21				CS-DECON-040521				CS-DECON-072521				ERB-121019CS				ERB-121119HA				ERB-121119WL			
Sample Date	07/10/2019				11/21/2019				04/05/2021				07/25/2021				12/10/2019				12/11/2019				12/11/2019			
Analyte	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual
Water, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (ng/l)																												
6:2 FTS	<	3.33	8.33	U	<	3.33	8.33	U	<	2.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
8:2 FTS	<	3.33	8.33	U	<	3.33	8.33	U	<	2.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
NEtFOSAA	<	6.67	8.33	U	<	6.67	8.33	U	<	4.00	8.00	U	<	4.00	8.00	U	<	8.00	10.0	U	<	8.00	10.0	U	<	8.00	10.0	UJ
NMeFOSAA	<	6.67	8.33	U	<	6.67	8.33	U	<	4.00	8.00	U	<	4.00	8.00	U	<	8.00	10.0	U	<	8.00	10.0	U	<	8.00	10.0	UJ
PFBA	2.79	3.33	8.33	J	6.86	3.33	8.33	J	1.67	2.00	4.00	J	2.37	3.50	4.00	J	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
PFBS	3.07	3.33	8.33	J	<	3.33	8.33	U	2.88	2.00	4.00	J	1.51	2.00	4.00	J	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
PFDA	<	3.33	8.33	U	<	3.33	8.33	U	<	2.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
PFDoA	<	3.33	8.33	U	<	3.33	8.33	U	<	2.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	UJ
PFHpA	2.23	3.33	8.33	J	<	3.33	8.33	U	<	2.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
PFHxA	8.29	3.33	8.33	J	1.65	3.33	8.33	J	1.48	2.00	4.00	J	2.09	2.00	4.00	J	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
PFHxS	22.9	3.33	8.33		<	3.33	8.33	U	<	2.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
PFNA	<	3.33	8.33	U	<	3.33	8.33	U	<	2.00	4.00	U	<	2.00	4.00	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
PFOA	3.80	3.33	8.33	J	<	3.33	8.33	U	2.09	2.00	4.00	J	1.37	2.00	4.00	J	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
PFOS	32.0	3.33	8.33		<	1.86	8.33	U	<	2.00	4.00	U	1.63	2.00	4.00	J	4.09	4.00	10.0	J	<	4.00	10.0	U	<	4.00	10.0	U
PFPeA	7.86	3.33	8.33	J	<	3.33	8.33	U	1.03	2.00	4.00	J	2.07	2.00	4.00	J	2.80	4.00	10.0	J	<	4.00	10.0	U	<	4.00	10.0	U
PFTeDA	<	3.33	8.33	U	<	3.33	8.33	U	<	2.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	4.00	10.0	UJ
PFTrDA	<	3.33	8.33	U	<	3.33	8.33	U	<	2.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	4.00	10.0	UJ
PFUnDA	<	3.33	8.33	U	<	3.33	8.33	U	<	2.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	UJ

Interpreted Qualifiers

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Chemical Abbreviations

6:2 FTS	6:2 fluorotelomer sulfonate
8:2 FTS	8:2 fluorotelomer sulfonate
NEtFOSAA	N-ethyl perfluorooctane- sulfonamidoacetic acid
NMeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid
PFBA	perfluorobutanoic acid
PFBS	perfluorobutanesulfonic acid
PFDA	perfluorodecanoic acid
PFDoA	perfluorododecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid
PFTeDA	perfluorotetradecanoic acid
PFTrDA	perfluorotridecanoic acid
PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

AOI	Area of Interest
ERB	equipment rinsate blank
FRB	field reagent blank
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
LOQ	limit of quantitation
QC	quality control
QSM	Quality Systems Manual
Qual	interpreted qualifier
ng/l	nanogram per liter
<	analyte not detected above the LOD

Appendix F Laboratory Data
Decontamination Water and Quality Control Samples
Site Inspection Report, Camp Smith

Area of Interest	FIELD QC																							
Sample ID	ERB-121219SS				CS-ERB-01				CS-ERB-02				CS-ERB-03				FRB-121119				CS-FRB-01			
Sample Date	12/12/2019				07/22/2021				07/24/2021				07/25/2021				12/11/2019				07/25/2021			
Analyte	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual
Water, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (ng/l)																								
6:2 FTS	<	4.00	10.0	U	23.3	3.00	4.00		<	3.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	U	<	3.00	4.00	U
8:2 FTS	<	4.00	10.0	U	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	U	<	3.00	4.00	U
NEtFOSAA	<	8.00	10.0	U	<	4.00	8.00	U	<	4.00	8.00	U	<	4.00	8.00	U	<	8.00	10.0	U	<	4.00	8.00	U
NMeFOSAA	<	8.00	10.0	U	<	4.00	8.00	U	<	4.00	8.00	U	<	4.00	8.00	U	<	8.00	10.0	U	<	4.00	8.00	U
PFBA	<	4.00	10.0	U	<	3.50	4.00	U	<	3.50	4.00	U	<	3.50	4.00	U	<	4.00	10.0	U	<	3.50	4.00	U
PFBS	<	4.00	10.0	U	<	2.00	4.00	U	<	2.00	4.00	U	<	2.00	4.00	U	<	4.00	10.0	U	<	2.00	4.00	U
PFDA	<	4.00	10.0	U	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	U	<	3.00	4.00	U
PFDoA	<	4.00	10.0	U	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	UJ	<	3.00	4.00	U
PFHpA	<	4.00	10.0	U	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	U	<	3.00	4.00	U
PFHxA	<	4.00	10.0	U	<	2.00	4.00	U	<	2.00	4.00	U	<	2.00	4.00	U	<	4.00	10.0	U	<	2.00	4.00	U
PFHxS	<	4.00	10.0	U	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	U	<	3.00	4.00	U
PFNA	<	4.00	10.0	U	<	2.00	4.00	U	<	2.00	4.00	U	<	2.00	4.00	U	<	4.00	10.0	U	<	2.00	4.00	U
PFOA	<	4.00	10.0	U	<	2.00	4.00	U	<	2.00	4.00	U	<	2.00	4.00	U	<	4.00	10.0	U	<	2.00	4.00	U
PFOS	2.35	4.00	10.0	J	<	2.00	4.00	U	<	2.00	4.00	U	<	2.00	4.00	U	3.01	4.00	10.0	J	<	2.00	4.00	U
PFPeA	3.31	4.00	10.0	J	<	2.00	4.00	U	<	2.00	4.00	U	<	2.00	4.00	U	2.57	4.00	10.0	J	<	2.00	4.00	U
PFTeDA	<	4.00	10.0	UJ	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	UJ	<	3.00	4.00	U
PFTrDA	<	4.00	10.0	UJ	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	UJ	<	3.00	4.00	U
PFUnDA	<	4.00	10.0	U	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U	<	4.00	10.0	U	<	3.00	4.00	U

Interpreted Qualifiers

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PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
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PFTeDA	perfluorotetradecanoic acid
PFTrDA	perfluorotridecanoic acid
PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

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FRB	field reagent blank
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
LOQ	limit of quantitation
QC	quality control
QSM	Quality Systems Manual
Qual	interpreted qualifier
ng/l	nanogram per liter
<	analyte not detected above the LOD

Appendix F Laboratory Data
TOC and pH
Site Inspection Report, Camp Smith

Area of Interest	AOI1																											
Sample ID	AOI 1-SB1-0.5-1				AOI 1-SB1-6-8				AOI 1-SB1-12-14				AOI 1-SB2-0.5-1				AOI 1-SB3-0.5-1				AOI 1-SB3-1-2				CS-MW001S-SB-00-02			
Sample Date	12/11/2019				12/11/2019				12/11/2019				12/11/2019				12/11/2019				12/11/2019				07/20/2021			
Depth	0.5 - 1 ft				6 - 8 ft				12 - 14 ft				0.5 - 1 ft				0.5 - 1 ft				1 - 2 ft				0 - 2 ft			
Analyte	**Result**	**LOD**	**LOQ**	**Qual**	**Result**	**LOD**	**LOQ**	**Qual**	**Result**	**LOD**	**LOQ**	**Qual**	**Result**	**LOD**	**LOQ**	**Qual**	**Result**	**LOD**	**LOQ**	**Qual**	**Result**	**LOD**	**LOQ**	**Qual**	**Result**	**LOD**	**LOQ**	**Qual**
pH	7.89	1.00	1.00	J	5.84	1.00	1.00	J	7.46	1.00	1.00	J	7.80	1.00	1.00	J	9.25	1.00	1.00	J	7.52	1.00	1.00	J	7.26	1.00	1.00	J
Total Organic Carbon (mg/kg)	10500	200	250		868	200	250		586	200	250		4230	200	250		68800	200	250		10300	200	250		14400	200	250	

Acronyms and Abbreviations

AOI	Area of Interest
D	duplicate
ft	ft
LOD	limit of detection
LOQ	limit of quantitation
Qual	interpreted qualifier
mg/kg	milligram per kilogram
SB	soil boring
<	analyte not detected above the LOD

Interpreted Qualifiers

J = Estimated concentration

Appendix F Laboratory Data
TOC and pH
Site Inspection Report, Camp Smith

Area of Interest	AOI 1				AOI 2				AOI 2/3			
Sample ID	CS-MW001S-SB-00-02-D				AOI2-SB4-00-02				CS-MW003S-SB-40-42			
Sample Date	07/20/2021				07/24/2021				07/25/2021			
Depth	0 - 2 ft				0 - 2 ft				40 - 42 ft			
Analyte	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual
pH	7.22	1.00	1.00	J	7.86	1.00	1.00	J	8.31	1.00	1.00	J
Total Organic Carbon (mg/kg)	15000	200	250		938	200	250		529	200	250	J

Acronyms and Abbreviations

AOI	Area of Interest
D	duplicate
ft	ft
LOD	limit of detection
LOQ	limit of quantitation
Qual	interpreted qualifier
mg/kg	milligram per kilogram
SB	soil boring
<	analyte not detected above the LOD

Interpreted Qualifiers

J = Estimated concentration

Appendix F Laboratory Data
Deep Subsurface Soil
Site Inspection Report, Camp Smith

Area of Interest	AOI2				AOI 2/3												AOI3			
Sample ID	AOI 2-SB1-21-23				CS-MW002D-SB-39-41				CS-MW003S-SB-40-42				CS-MW003S-SB-40-42-D				AOI 3-SB2-15-17			
Sample Date	12/10/2019				07/23/2021				07/25/2021				07/25/2021				12/10/2019			
Depth	21 - 23 ft				39 - 41 ft				40 - 42 ft				40 - 42 ft				15 - 17 ft			
Analyte	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual
Soil, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (µg/kg)																				
6:2 FTS	<	0.447	1.12	U	<	0.221	1.11	U	<	0.257	1.28	U	<	0.260	1.30	U	<	0.402	1.00	U
8:2 FTS	<	0.447	1.12	U	<	0.111	1.11	U	<	0.128	1.28	U	<	0.130	1.30	U	<	0.402	1.00	U
NEtFOSAA	<	0.447	1.12	U	<	0.111	1.11	U	<	0.128	1.28	U	<	0.130	1.30	U	<	0.402	1.00	U
NMeFOSAA	<	0.447	1.12	U	<	0.055	1.11	U	<	0.064	1.28	U	<	0.065	1.30	U	<	0.402	1.00	U
PFBA	0.347	0.447	1.12	J	<	0.111	1.11	U	<	0.128	1.28	U	<	0.130	1.30	U	0.234	0.402	1.00	J
PFBS	<	0.447	1.12	U	<	0.055	1.11	U	<	0.064	1.28	U	<	0.065	1.30	U	<	0.402	1.00	U
PFDA	<	0.447	1.12	U	<	0.111	1.11	U	<	0.128	1.28	U	<	0.130	1.30	U	<	0.402	1.00	U
PFDoA	<	0.447	1.12	U	<	0.055	1.11	U	<	0.064	1.28	U	<	0.065	1.30	U	<	0.402	1.00	U
PFHpA	<	0.447	1.12	U	<	0.055	1.11	U	<	0.064	1.28	U	<	0.065	1.30	U	<	0.402	1.00	U
PFHxA	<	0.447	1.12	U	<	0.055	1.11	U	0.026	0.064	1.28	J	<	0.065	1.30	UJ	<	0.402	1.00	U
PFHxS	<	0.447	1.12	U	<	0.111	1.11	U	<	0.128	1.28	U	<	0.130	1.30	U	<	0.402	1.00	U
PFNA	<	0.447	1.12	U	<	0.055	1.11	U	<	0.064	1.28	U	<	0.065	1.30	U	<	0.402	1.00	U
PFOA	<	0.447	1.12	U	<	0.221	1.11	U	<	0.257	1.28	U	<	0.260	1.30	U	<	0.402	1.00	U
PFOS	<	0.447	1.12	U	0.151	0.221	1.11	J	0.131	0.257	1.28	J	0.101	0.260	1.30	J	<	0.402	1.00	U
PFPeA	<	0.447	1.12	U	<	0.055	1.11	U	<	0.064	1.28	U	<	0.065	1.30	U	<	0.402	1.00	U
PFTeDA	<	0.447	1.12	U	<	0.055	1.11	U	<	0.064	1.28	U	<	0.065	1.30	U	<	0.402	1.00	U
PFTrDA	<	0.447	1.12	U	<	0.111	1.11	U	<	0.128	1.28	U	<	0.130	1.30	U	<	0.402	1.00	U
PFUnDA	<	0.447	1.12	U	<	0.055	1.11	U	<	0.064	1.28	U	<	0.065	1.30	U	<	0.402	1.00	U

Interpreted Qualifiers

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PFBS	perfluorobutanesulfonic acid
PFDA	perfluorodecanoic acid
PFDoA	perfluorododecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid
PFTeDA	perfluorotetradecanoic acid
PFTrDA	perfluorotridecanoic acid
PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

AOI	Area of Interest
D	duplicate
ft	feet
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
LOQ	limit of quantitation
QSM	Quality Systems Manual
Qual	interpreted qualifier
SB	soil boring
µg/kg	micrograms per kilogram
<	analyte not detected above the LOD

Appendix F Laboratory Data
Shallow Subsurface Soil
Site Inspection Report, Camp Smith

Area of Interest		AOI1												AOI2															
Sample ID		AOI 1-SB1-6-8				AOI 1-SB1-12-14				CS-MW001D-SB-08-10				AOI 2-SB1-11-13				AOI2-SB2-02-04				AOI2-SB3-02-04				AOI2-SB4-02-04			
Sample Date		12/11/2019				12/11/2019				07/20/2021				12/10/2019				07/24/2021				07/24/2021				07/24/2021			
Depth		6 - 8 ft				12 - 14 ft				8 - 10 ft				11 - 13 ft				2 - 4 ft				2 - 4 ft				2 - 4 ft			
Analyte	OSD Screening Level [a]	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual
Soil, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (µg/kg																													
6:2 FTS	-	<	0.512	1.28	U	<	0.434	1.09	U	<	0.239	1.20	U	<	0.445	1.11	U	<	0.269	1.34	U	3.10	0.239	1.19		<	0.208	1.04	U
8:2 FTS	-	<	0.512	1.28	U	<	0.434	1.09	U	<	0.120	1.20	U	<	0.445	1.11	U	0.670	0.134	1.34	J	30.2	0.119	1.19		2.08	0.104	1.04	
NEtFOSAA	-	<	0.512	1.28	U	<	0.434	1.09	U	<	0.120	1.20	U	<	0.445	1.11	U	<	0.134	1.34	U	<	0.119	1.19	U	<	0.104	1.04	U
NMeFOSAA	-	<	0.512	1.28	U	<	0.434	1.09	U	<	0.060	1.20	U	<	0.445	1.11	U	<	0.067	1.34	U	<	0.060	1.19	U	<	0.052	1.04	U
PFBA	-	0.313	0.512	1.28	J	0.257	0.434	1.09	J	<	0.120	1.20	U	0.299	0.445	1.11	J	<	0.134	1.34	U	0.050	0.119	1.19	J	<	0.104	1.04	U
PFBS	25000	<	0.512	1.28	U	<	0.434	1.09	U	0.025	0.060	1.20	J	<	0.445	1.11	U	<	0.067	1.34	U	<	0.060	1.19	U	<	0.052	1.04	U
PFDA	-	<	0.512	1.28	U	<	0.434	1.09	U	<	0.120	1.20	U	<	0.445	1.11	U	0.066	0.134	1.34	J	0.199	0.119	1.19	J	<	0.104	1.04	U
PFDoA	-	<	0.512	1.28	U	<	0.434	1.09	U	<	0.060	1.20	U	<	0.445	1.11	U	<	0.067	1.34	U	0.025	0.060	1.19	J	<	0.052	1.04	U
PFHpA	-	<	0.512	1.28	U	<	0.434	1.09	U	<	0.060	1.20	U	<	0.445	1.11	U	0.031	0.067	1.34	J	0.195	0.060	1.19	J	0.022	0.052	1.04	J
PFHxA	-	<	0.512	1.28	U	<	0.434	1.09	U	0.034	0.060	1.20	J	<	0.445	1.11	U	0.033	0.067	1.34	J	0.198	0.060	1.19	J	<	0.052	1.04	U
PFHxS	-	<	0.512	1.28	U	<	0.434	1.09	U	<	0.120	1.20	U	<	0.445	1.11	U	0.168	0.134	1.34	J	0.860	0.119	1.19	J	0.079	0.104	1.04	J
PFNA	-	<	0.512	1.28	U	<	0.434	1.09	U	<	0.060	1.20	U	<	0.445	1.11	U	0.046	0.067	1.34	J	0.285	0.060	1.19	J	<	0.052	1.04	U
PFOA	1600	<	0.512	1.28	U	<	0.434	1.09	U	0.129	0.239	1.20	J	<	0.445	1.11	U	<	0.269	1.34	U	0.588	0.239	1.19	J	<	0.208	1.04	U
PFOS	1600	<	0.512	1.28	U	<	0.434	1.09	U	0.117	0.239	1.20	J	<	0.445	1.11	U	24.4	0.269	1.34		191	2.39	11.9		17.6	0.208	1.04	
PFPeA	-	<	0.512	1.28	U	<	0.434	1.09	U	<	0.060	1.20	U	<	0.445	1.11	U	<	0.067	1.34	U	0.121	0.060	1.19	J	0.025	0.052	1.04	J
PFTeDA	-	<	0.512	1.28	UJ	<	0.434	1.09	U	<	0.060	1.20	U	<	0.445	1.11	U	<	0.067	1.34	U	<	0.060	1.19	U	<	0.052	1.04	U
PFTrDA	-	<	0.512	1.28	UJ	<	0.434	1.09	U	<	0.120	1.20	U	<	0.445	1.11	U	<	0.134	1.34	U	<	0.119	1.19	U	<	0.104	1.04	U
PFUnDA	-	<	0.512	1.28	U	<	0.434	1.09	U	<	0.060	1.20	U	<	0.445	1.11	U	0.037	0.067	1.34	J	0.028	0.060	1.19	J	0.022	0.052	1.04	J

Grey Fill — Detected concentration exceeded OSD Screening Levels

References

a. Assistant Secretary of Defense, 2021. Risk Based Screening Levels Calculated for PFOS and PFOA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1. 15 September 2021. Soil screening levels based on industrial/commercial composite worker scenario for incidental ingestion of contaminated soil.

Interpreted Qualifiers

J = Estimated concentration

J- = Estimated concentration, biased low

U = The analyte was not detected at a level greater than or equal to the adjusted detection limit (DL)

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Chemical Abbreviations

6:2 FTS	6:2 fluorotelomer sulfonate
8:2 FTS	8:2 fluorotelomer sulfonate
NEtFOSAA	N-ethyl perfluorooctane- sulfonamidoacetic acid
NMeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid
PFBA	perfluorobutanoic acid
PFBS	perfluorobutanesulfonic acid
PFDA	perfluorodecanoic acid
PFDoA	perfluorododecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid
PFTeDA	perfluorotetradecanoic acid
PFTrDA	perfluorotridecanoic acid
PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

AOI	Area of Interest
ft	feet
HQ	hazard quotient
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
LOQ	limit of quantitation
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
SB	soil boring
USEPA	United States Environmental Protection Agency
µg/kg	micrograms per kilogram
-	not applicable
<	analyte not detected above the LOD

Appendix F Laboratory Data
Shallow Subsurface Soil
Site Inspection Report, Camp Smith

Area of Interest		AOI 2				AOI3							
Sample ID		AOI2-SB5-02-04				AOI 3-SB2-7-9				CS-MW004S-SB-07-09			
Sample Date		07/24/2021				12/10/2019				07/19/2021			
Depth		2 - 4 ft				7 - 9 ft				7 - 9 ft			
Analyte	OSD Screening Level [a]	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual
Soil, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (µg/kg													
6:2 FTS	-	<	0.222	1.11	U	<	0.402	1.00	U	<	0.248	1.24	U
8:2 FTS	-	0.426	0.111	1.11	J	<	0.402	1.00	U	<	0.124	1.24	U
NEtFOSAA	-	<	0.111	1.11	U	<	0.402	1.00	U	<	0.124	1.24	U
NMeFOSAA	-	<	0.056	1.11	U	<	0.402	1.00	U	<	0.062	1.24	U
PFBA	-	<	0.111	1.11	U	0.274	0.402	1.00	J	<	0.124	1.24	U
PFBS	25000	<	0.056	1.11	U	<	0.402	1.00	U	<	0.062	1.24	U
PFDA	-	<	0.111	1.11	U	<	0.402	1.00	U	<	0.124	1.24	U
PFDoA	-	<	0.056	1.11	U	<	0.402	1.00	U	<	0.062	1.24	U
PFHpA	-	<	0.056	1.11	U	<	0.402	1.00	U	<	0.062	1.24	U
PFHxA	-	0.033	0.056	1.11	J	<	0.402	1.00	U	<	0.062	1.24	U
PFHxS	-	0.213	0.111	1.11	J	<	0.402	1.00	U	<	0.124	1.24	U
PFNA	-	<	0.056	1.11	U	<	0.402	1.00	U	<	0.062	1.24	U
PFOA	1600	<	0.222	1.11	U	<	0.402	1.00	U	<	0.248	1.24	U
PFOS	1600	1.42	0.222	1.11	J-	<	0.402	1.00	U	<	0.248	1.24	U
PFPeA	-	<	0.056	1.11	U	<	0.402	1.00	U	<	0.062	1.24	U
PFTeDA	-	<	0.056	1.11	U	<	0.402	1.00	U	<	0.062	1.24	U
PFTrDA	-	<	0.111	1.11	U	<	0.402	1.00	U	<	0.124	1.24	U
PFUnDA	-	<	0.056	1.11	U	<	0.402	1.00	U	<	0.062	1.24	U

Grey Fill — Detected concentration exceeded OSD Screening Levels

References

a. Assistant Secretary of Defense, 2021. Risk Based Screening Levels Calculated for PFOS and PFOA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1. 15 September 2021. Soil screening levels based on industrial/commercial composite worker scenario for incidental ingestion of contaminated soil.

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PFBS	perfluorobutanesulfonic acid
PFDA	perfluorodecanoic acid
PFDoA	perfluorododecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid
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PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

AOI	Area of Interest
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LOQ	limit of quantitation
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
SB	soil boring
USEPA	United States Environmental Protection Agency
µg/kg	micrograms per kilogram
-	not applicable
<	analyte not detected above the LOD

Appendix F Laboratory Data
Surface Soil
Site Inspection Report, Camp Smith

Area of Interest		AOI1																								AOI2			
Sample ID		AOI 1-SB1-0.5-1				AOI 1-SB2-0.5-1				AOI 1-SB3-0.5-1				AOI 1-SB3-1-2				CS-MW001S-SB-00-02				CS-MW001S-SB-00-02-D				AOI 2-SB1-0.5-1			
Sample Date		12/11/2019				12/11/2019				12/11/2019				12/11/2019				07/20/2021				07/20/2021				12/10/2019			
Depth		0.5 - 1 ft				0.5 - 1 ft				0.5 - 1 ft				1 - 2 ft				0 - 2 ft				0 - 2 ft				0.5 - 1 ft			
Analyte	OSD Screening Level [a]	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual
Soil, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (µg/kg)																													
6:2 FTS	-	<	0.431	1.08	U	<	0.502	1.26	U	<	0.416	1.04	U	<	0.495	1.24	U	<	0.244	1.22	U	<	0.236	1.18	U	<	0.427	1.07	U
8:2 FTS	-	<	0.431	1.08	U	<	0.502	1.26	U	<	0.416	1.04	U	<	0.495	1.24	U	<	0.122	1.22	U	<	0.118	1.18	U	<	0.427	1.07	U
NEtFOSAA	-	<	0.431	1.08	U	<	0.502	1.26	U	<	0.416	1.04	U	<	0.495	1.24	U	<	0.122	1.22	U	<	0.118	1.18	U	<	0.427	1.07	U
NMeFOSAA	-	<	0.431	1.08	U	<	0.502	1.26	U	<	0.416	1.04	U	<	0.495	1.24	U	<	0.061	1.22	U	<	0.059	1.18	U	<	0.427	1.07	U
PFBA	-	<	0.431	1.08	U	<	0.502	1.26	U	0.146	0.416	1.04	J	0.325	0.495	1.24	J	0.224	0.122	1.22	J	0.207	0.118	1.18	J	0.143	0.427	1.07	J
PFBS	1900	<	0.431	1.08	U	<	0.502	1.26	U	<	0.416	1.04	U	<	0.495	1.24	U	0.034	0.061	1.22	J	0.034	0.059	1.18	J	<	0.427	1.07	U
PFDA	-	<	0.431	1.08	U	<	0.502	1.26	U	<	0.416	1.04	U	<	0.495	1.24	U	0.093	0.122	1.22	J	0.085	0.118	1.18	J	<	0.427	1.07	U
PFDoA	-	<	0.431	1.08	U	<	0.502	1.26	U	<	0.416	1.04	U	<	0.495	1.24	U	0.032	0.061	1.22	J	0.030	0.059	1.18	J	<	0.427	1.07	U
PFHpA	-	<	0.431	1.08	U	<	0.502	1.26	U	<	0.416	1.04	U	<	0.495	1.24	U	0.134	0.061	1.22	J	0.126	0.059	1.18	J	<	0.427	1.07	U
PFHxA	-	<	0.431	1.08	U	<	0.502	1.26	U	<	0.416	1.04	U	<	0.495	1.24	U	0.123	0.061	1.22	J	0.113	0.059	1.18	J	<	0.427	1.07	U
PFHxS	-	<	0.431	1.08	U	<	0.502	1.26	U	<	0.416	1.04	U	<	0.495	1.24	U	<	0.122	1.22	U	<	0.118	1.18	U	<	0.427	1.07	U
PFNA	-	<	0.431	1.08	U	<	0.502	1.26	U	<	0.416	1.04	U	<	0.495	1.24	U	0.217	0.061	1.22	J	0.197	0.059	1.18	J	<	0.427	1.07	U
PFOA	130	<	0.431	1.08	U	<	0.502	1.26	U	<	0.416	1.04	U	0.919	0.495	1.24	J	0.669	0.244	1.22	J	0.627	0.236	1.18	J	<	0.427	1.07	U
PFOS	130	0.260	0.431	1.08	J	0.345	0.502	1.26	J	<	0.416	1.04	U	0.339	0.495	1.24	J	0.396	0.244	1.22	J	0.334	0.236	1.18	J	0.432	0.427	1.07	J
PFPeA	-	<	0.431	1.08	U	<	0.502	1.26	U	<	0.416	1.04	U	<	0.495	1.24	U	0.129	0.061	1.22	J	0.110	0.059	1.18	J	<	0.427	1.07	U
PFTeDA	-	<	0.431	1.08	U	<	0.502	1.26	UJ	<	0.416	1.04	U	<	0.495	1.24	U	<	0.061	1.22	U	<	0.059	1.18	U	<	0.427	1.07	U
PFTrDA	-	<	0.431	1.08	U	<	0.502	1.26	UJ	<	0.416	1.04	U	<	0.495	1.24	U	<	0.122	1.22	U	<	0.118	1.18	U	<	0.427	1.07	U
PFUnDA	-	<	0.431	1.08	U	<	0.502	1.26	U	<	0.416	1.04	U	<	0.495	1.24	U	0.073	0.061	1.22	J	0.072	0.059	1.18	J	<	0.427	1.07	U

Grey Fill — Detected concentration exceeded OSD Screening Levels

References

a. Assistant Secretary of Defense, 2021. Risk Based Screening Levels Calculated for PFOS and PFOA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1. 15 September 2021. Soil screening levels based on residential scenario for direct ingestion of contaminated soil.

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PFDoA	perfluorododecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid
PFTeDA	perfluorotetradecanoic acid
PFTrDA	perfluorotridecanoic acid
PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

AOI	Area of Interest
D/FD	duplicate
ft	feet
HQ	hazard quotient
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
LOQ	limit of quantitation
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
SB	soil boring
USEPA	United States Environmental Protection Agency
µg/kg	micrograms per kilogram
-	not applicable
<	analyte not detected above the LOD

Appendix F Laboratory Data
Surface Soil
Site Inspection Report, Camp Smith

Area of Interest		AOI 2																AOI3											
Sample ID		AOI2-SB2-00-02				AOI2-SB3-00-02				AOI2-SB4-00-02				AOI2-SB5-00-02				AOI 3-SB1-0.5-1				AOI 3-SB1-1-2				AOI 3-SB1-1-2-FD			
Sample Date		07/24/2021				07/24/2021				07/24/2021				07/24/2021				12/10/2019				12/10/2019				12/10/2019			
Depth		0 - 2 ft				0 - 2 ft				0 - 2 ft				0 - 2 ft				0.5 - 1 ft				1 - 2 ft				1 - 2 ft			
Analyte	OSD Screening Level [a]	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual
Soil, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (µg/kg)																													
6:2 FTS	-	<	0.216	1.08	U	0.460	0.209	1.05	J	<	0.230	1.15	U	<	0.213	1.07	U	<	0.424	1.06	U	<	0.488	1.22	U	<	0.468	1.17	U
8:2 FTS	-	0.077	0.108	1.08	J	7.65	0.105	1.05		0.065	0.115	1.15	J	<	0.107	1.07	U	<	0.424	1.06	U	<	0.488	1.22	U	<	0.468	1.17	U
NEtFOSAA	-	<	0.108	1.08	U	<	0.105	1.05	U	<	0.115	1.15	U	<	0.107	1.07	U	<	0.424	1.06	U	<	0.488	1.22	U	<	0.468	1.17	U
NMeFOSAA	-	<	0.054	1.08	U	<	0.052	1.05	U	<	0.057	1.15	U	<	0.053	1.07	U	<	0.424	1.06	U	<	0.488	1.22	U	<	0.468	1.17	U
PFBA	-	<	0.108	1.08	U	<	0.105	1.05	U	<	0.115	1.15	U	<	0.107	1.07	U	0.270	0.424	1.06	J	0.304	0.488	1.22	J	0.207	0.468	1.17	J
PFBS	1900	<	0.054	1.08	U	<	0.052	1.05	U	<	0.057	1.15	U	<	0.053	1.07	U	<	0.424	1.06	U	<	0.488	1.22	U	<	0.468	1.17	U
PFDA	-	<	0.108	1.08	U	0.111	0.105	1.05	J	<	0.115	1.15	U	<	0.107	1.07	U	<	0.424	1.06	U	<	0.488	1.22	U	<	0.468	1.17	U
PFDoA	-	0.025	0.054	1.08	J	<	0.052	1.05	U	<	0.057	1.15	U	<	0.053	1.07	U	<	0.424	1.06	U	<	0.488	1.22	U	<	0.468	1.17	U
PFHpA	-	<	0.054	1.08	U	0.061	0.052	1.05	J	<	0.057	1.15	U	0.030	0.053	1.07	J	<	0.424	1.06	U	<	0.488	1.22	U	<	0.468	1.17	U
PFHxA	-	<	0.054	1.08	U	0.033	0.052	1.05	J	<	0.057	1.15	U	0.095	0.053	1.07	J	<	0.424	1.06	U	<	0.488	1.22	U	<	0.468	1.17	U
PFHxS	-	0.053	0.108	1.08	J	0.150	0.105	1.05	J	0.067	0.115	1.15	J	<	0.107	1.07	U	<	0.424	1.06	U	<	0.488	1.22	U	<	0.468	1.17	U
PFNA	-	<	0.054	1.08	U	0.071	0.052	1.05	J	<	0.057	1.15	U	0.032	0.053	1.07	J	<	0.424	1.06	U	<	0.488	1.22	U	<	0.468	1.17	U
PFOA	130	<	0.216	1.08	U	0.126	0.209	1.05	J	<	0.230	1.15	U	<	0.213	1.07	U	0.172	0.424	1.06	J	<	0.488	1.22	U	<	0.468	1.17	U
PFOS	130	4.56	0.216	1.08		34.2	0.209	1.05		1.25	0.230	1.15		0.099	0.213	1.07	J	0.194	0.424	1.06	J	<	0.488	1.22	U	<	0.468	1.17	U
PFPeA	-	<	0.054	1.08	U	0.021	0.052	1.05	J	<	0.057	1.15	U	0.095	0.053	1.07	J	<	0.424	1.06	U	<	0.488	1.22	U	<	0.468	1.17	U
PFTeDA	-	<	0.054	1.08	U	<	0.052	1.05	U	<	0.057	1.15	U	<	0.053	1.07	U	<	0.424	1.06	U	<	0.488	1.22	U	<	0.468	1.17	U
PFTrDA	-	<	0.108	1.08	U	<	0.105	1.05	U	<	0.115	1.15	U	<	0.107	1.07	U	<	0.424	1.06	U	<	0.488	1.22	U	<	0.468	1.17	U
PFUnDA	-	0.027	0.054	1.08	J	0.021	0.052	1.05	J	<	0.057	1.15	U	<	0.053	1.07	U	<	0.424	1.06	U	<	0.488	1.22	U	<	0.468	1.17	U

Grey Fill — Detected concentration exceeded OSD Screening Levels

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PFBS	perfluorobutanesulfonic acid
PFDA	perfluorodecanoic acid
PFDoA	perfluorododecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid
PFTeDA	perfluorotetradecanoic acid
PFTrDA	perfluorotridecanoic acid
PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

AOI	Area of Interest
D/FD	duplicate
ft	feet
HQ	hazard quotient
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
LOQ	limit of quantitation
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
SB	soil boring
USEPA	United States Environmental Protection Agency
µg/kg	micrograms per kilogram
-	not applicable
<	analyte not detected above the LOD

Appendix F Laboratory Data
Surface Soil
Site Inspection Report, Camp Smith

	Area of Interest	AOI3							
	Sample ID	AOI 3-SB2-0.5-1				CS-MW004S-SB-00-02			
	Sample Date	12/10/2019				07/19/2021			
	Depth	0.5 - 1 ft				0 - 2 ft			
Analyte	OSD Screening Level [a]	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual
Soil, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (µg/kg)									
6:2 FTS	-	<	0.458	1.14	U	<	0.233	1.16	U
8:2 FTS	-	<	0.458	1.14	U	<	0.116	1.16	U
NEtFOSAA	-	<	0.458	1.14	U	<	0.116	1.16	U
NMeFOSAA	-	<	0.458	1.14	U	<	0.058	1.16	U
PFBA	-	0.301	0.458	1.14	J	0.059	0.116	1.16	J
PFBS	1900	<	0.458	1.14	U	<	0.058	1.16	U
PFDA	-	<	0.458	1.14	U	<	0.116	1.16	U
PFDoA	-	<	0.458	1.14	U	<	0.058	1.16	U
PFHpA	-	<	0.458	1.14	U	0.033	0.058	1.16	J
PFHxA	-	<	0.458	1.14	U	0.042	0.058	1.16	J
PFHxS	-	<	0.458	1.14	U	0.048	0.116	1.16	J
PFNA	-	0.130	0.458	1.14	J	<	0.058	1.16	U
PFOA	130	0.173	0.458	1.14	J	0.110	0.233	1.16	J
PFOS	130	1.02	0.458	1.14	J	0.283	0.233	1.16	J
PFPeA	-	<	0.458	1.14	U	0.040	0.058	1.16	J
PFTeDA	-	<	0.458	1.14	U	<	0.058	1.16	U
PFTrDA	-	<	0.458	1.14	U	<	0.116	1.16	U
PFUnDA	-	<	0.458	1.14	U	<	0.058	1.16	U

Grey Fill — Detected concentration exceeded OSD Screening Levels

References

a. Assistant Secretary of Defense, 2021. Risk Based Screening Levels Calculated for PFOS and PFOA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1. 15 September 2021. Soil screening levels based on residential scenario for direct ingestion of contaminated soil.

Interpreted Qualifiers

J = Estimated concentration

U = The analyte was not detected at a level greater than or equal to the adjusted detection limit (DL)

UJ = The analyte was not detected at a level greater than or equal to the adjusted DL. However, the reported adjusted DL is approximate and may be inaccurate or imprecise.

Chemical Abbreviations

6:2 FTS	6:2 fluorotelomer sulfonate
8:2 FTS	8:2 fluorotelomer sulfonate
NEtFOSAA	N-ethyl perfluorooctane- sulfonamidoacetic acid
NMeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid
PFBA	perfluorobutanoic acid
PFBS	perfluorobutanesulfonic acid
PFDA	perfluorodecanoic acid
PFDoA	perfluorododecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid
PFTeDA	perfluorotetradecanoic acid
PFTrDA	perfluorotridecanoic acid
PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

AOI	Area of Interest
D/FD	duplicate
ft	feet
HQ	hazard quotient
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
LOQ	limit of quantitation
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
SB	soil boring
USEPA	United States Environmental Protection Agency
µg/kg	micrograms per kilogram
-	not applicable
<	analyte not detected above the LOD

Appendix F Laboratory Data
Sediment
Site Inspection Report, Camp Smith

Area of Interest	Camp Smith																													
Sample ID	CS-SD01-0-1				CS-SD02-0-1				CS-SD03-0-1				CS-SD04-0-1				CS-SD05-0-1				CS-SD06-0-1				CS-SD07-0-1				CS-SD08-0-1			
Sample Date	12/12/2019				12/12/2019				12/12/2019				12/12/2019				12/11/2019				12/12/2019				12/12/2019				12/12/2019			
Depth	0 - 1 ft				0 - 1 ft				0 - 1 ft				0 - 1 ft				0 - 1 ft				0 - 1 ft				0 - 1 ft				0 - 1 ft			
Analyte	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual
Sediment, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (µg/kg)†																																
6:2 FTS	<	2.30	5.76	U	<	0.810	2.02	U	<	7.66	19.1	U	<	0.552	1.38	U	<	0.743	1.86	U	<	0.447	1.12	U	<	1.08	2.71	U	<	1.34	3.34	U
8:2 FTS	<	2.30	5.76	UJ	<	0.810	2.02	U	<	7.66	19.1	U	<	0.552	1.38	U	<	0.743	1.86	U	<	0.447	1.12	U	<	1.08	2.71	U	<	1.34	3.34	UJ
NEtFOSAA	<	2.30	5.76	UJ	<	0.810	2.02	U	<	7.66	19.1	U	<	0.552	1.38	U	<	0.743	1.86	U	<	0.447	1.12	U	<	1.08	2.71	UJ	<	1.34	3.34	U
NMeFOSAA	<	2.30	5.76	UJ	<	0.810	2.02	U	<	7.66	19.1	U	<	0.552	1.38	U	<	0.743	1.86	U	<	0.447	1.12	U	<	1.08	2.71	U	<	1.34	3.34	U
PFBA	<	2.30	5.76	U	0.402	0.810	2.02	J	<	7.66	19.1	U	<	0.552	1.38	U	<	0.743	1.86	U	<	1.12	1.12	U	<	1.08	2.71	U	<	1.34	3.34	U
PFBS	<	2.30	5.76	U	<	0.810	2.02	U	<	7.66	19.1	U	<	0.552	1.38	U	<	0.743	1.86	U	<	0.447	1.12	U	<	1.08	2.71	U	<	1.34	3.34	U
PFDA	<	2.30	5.76	UJ	<	0.810	2.02	U	<	7.66	19.1	U	<	0.552	1.38	U	<	0.743	1.86	U	<	0.447	1.12	U	<	1.08	2.71	U	<	1.34	3.34	UJ
PFDoA	<	2.30	5.76	UJ	<	0.810	2.02	UJ	<	7.66	19.1	U	<	0.552	1.38	U	<	0.743	1.86	U	<	0.447	1.12	U	<	1.08	2.71	UJ	<	1.34	3.34	UJ
PFHpA	<	2.30	5.76	U	<	0.810	2.02	U	<	7.66	19.1	U	<	0.552	1.38	U	<	0.743	1.86	U	<	0.447	1.12	U	<	1.08	2.71	U	<	1.34	3.34	U
PFHxA	<	2.30	5.76	U	0.353	0.810	2.02	J	<	7.66	19.1	U	<	0.552	1.38	U	<	0.743	1.86	U	<	0.447	1.12	U	<	1.08	2.71	U	<	1.34	3.34	U
PFHxS	<	2.30	5.76	U	<	0.810	2.02	U	<	7.66	19.1	U	<	0.552	1.38	U	<	0.743	1.86	U	0.199	0.447	1.12	J	<	1.08	2.71	U	<	1.34	3.34	U
PFNA	<	2.30	5.76	UJ	0.192	0.810	2.02	J	<	7.66	19.1	U	<	0.552	1.38	U	<	0.743	1.86	U	<	0.447	1.12	U	<	1.08	2.71	U	<	1.34	3.34	U
PFOA	<	2.30	5.76	U	1.07	0.810	2.02	J	<	7.66	19.1	U	<	0.552	1.38	U	0.283	0.743	1.86	J	<	0.447	1.12	U	<	1.08	2.71	U	<	1.34	3.34	U
PFOS	2.14	2.30	5.76	J+	3.24	0.810	2.02		<	7.66	19.1	U	<	1.02	1.38	U	1.14	0.743	1.86	J	3.77	0.447	1.12		<	0.947	2.71	U	2.13	1.34	3.34	J
PFPeA	<	2.30	5.76	U	<	0.810	2.02	U	<	7.66	19.1	U	<	0.552	1.38	U	<	0.743	1.86	U	<	0.447	1.12	U	<	1.08	2.71	U	<	1.34	3.34	U
PFTeDA	<	2.30	5.76	UJ	<	0.810	2.02	UJ	<	7.66	19.1	UJ	<	0.552	1.38	UJ	<	0.743	1.86	UJ	<	0.447	1.12	U	<	1.08	2.71	UJ	<	1.34	3.34	UJ
PFTrDA	<	2.30	5.76	UJ	<	0.810	2.02	UJ	<	7.66	19.1	UJ	<	0.552	1.38	UJ	<	0.743	1.86	UJ	<	0.447	1.12	U	<	1.08	2.71	UJ	<	1.34	3.34	UJ
PFUnDA	<	2.30	5.76	UJ	0.299	0.810	2.02	J	<	7.66	19.1	UJ	<	0.552	1.38	U	<	0.743	1.86	U	<	0.447	1.12	U	<	1.08	2.71	U	<	1.34	3.34	UJ

†Samples collected during Mobilization 1 were analyzed by QSM 5.1 (which was the most current version at the time of the event)

Interpreted Qualifiers

J = Estimated concentration

J+ = Estimated concentration, biased high

U = The analyte was not detected at a level greater than or equal to the adjusted detection limit (DL)

UJ = The analyte was not detected at a level greater than or equal to the adjusted DL. However, the reported adjusted DL is approximate and may be inaccurate or imprecise.

Chemical Abbreviations

6:2 FTS	6:2 fluorotelomer sulfonate
8:2 FTS	8:2 fluorotelomer sulfonate
NEtFOSAA	N-ethyl perfluorooctane- sulfonamidoacetic acid
NMeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid
PFBA	perfluorobutanoic acid
PFBS	perfluorobutanesulfonic acid
PFDA	perfluorodecanoic acid
PFDoA	perfluorododecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid
PFTeDA	perfluorotetradecanoic acid
PFTrDA	perfluorotridecanoic acid
PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

ft	feet
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
LOQ	limit of quantitation
QSM	Quality Systems Manual
Qual	interpreted qualifier
SD	sediment
µg/kg	micrograms per kilogram
<	analyte not detected above the LOD

Appendix F Laboratory Data
Groundwater
Site Inspection Report, Camp Smith

Area of Interest			AOI1																								AOI 2/3			
Sample ID			AOI 1-GW1				AOI 1-GW2				AOI 1-GW3				CS-MW001D-GW				CS-MW001S-GW				CS-MW001S-GW-D				CS-MW002D-GW			
Sample Date			12/11/2019				12/11/2019				12/11/2019				07/24/2021				07/24/2021				07/24/2021				07/28/2021			
Analyte	**OSD Screening Level [a]**	**USEPA HA [b]**	**Result**	**LOD**	**LOQ**	**Qual**	**Result**	**LOD**	**LOQ**	**Qual**	**Result**	**LOD**	**LOQ**	**Qual**	**Result**	**LOD**	**LOQ**	**Qual**	**Result**	**LOD**	**LOQ**	**Qual**	**Result**	**LOD**	**LOQ**	**Qual**	**Result**	**LOD**	**LOQ**	**Qual**
Water, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (ng/l)																												
6:2 FTS	-	-	2.10	4.00	10.0	J	<	4.00	10.0	U	<	4.00	10.0	U	<	3.00	4.00	U	9.15	3.00	4.00		8.61	3.00	4.00		10.1	3.00	4.00	
8:2 FTS	-	-	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U
NEtFOSAA	-	-	<	8.00	10.0	U	<	8.00	10.0	U	<	8.00	10.0	U	<	4.00	8.00	U	<	4.00	8.00	U	<	4.00	8.00	U	<	4.00	8.00	U
NMeFOSAA	-	-	<	8.00	10.0	U	<	8.00	10.0	U	<	8.00	10.0	U	<	4.00	8.00	U	<	4.00	8.00	U	<	4.00	8.00	U	<	4.00	8.00	U
PFBA	-	-	7.28	4.00	10.0	J	4.73	4.00	10.0	J	35.4	4.00	10.0		<	5.12	4.00	U	<	3.50	4.00	U	<	3.50	4.00	U	<	3.50	4.00	U
PFBS	600	-	2.87	4.00	10.0	J	<	4.00	10.0	U	3.39	4.00	10.0	J	<	2.00	4.00	U	<	2.43	4.00	U	<	2.48	4.00	U	<	2.80	4.00	U
PFDA	-	-	1.68	4.00	10.0	J	<	4.00	10.0	U	<	4.00	10.0	U	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U
PFDoA	-	-	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U
PFHpA	-	-	4.77	4.00	10.0	J	3.50	4.00	10.0	J	9.51	4.00	10.0	J	3.00	3.00	4.00	J	1.74	3.00	4.00	J	1.85	3.00	4.00	J	2.75	3.00	4.00	J
PFHxA	-	-	9.81	4.00	10.0	J	3.42	4.00	10.0	J	11.4	4.00	10.0		<	8.21	4.00	U	<	2.37	4.00	U	<	2.45	4.00	U	<	8.52	4.00	U
PFHxS	-	-	14.6	4.00	10.0		3.45	4.00	10.0	J	10.2	4.00	10.0		7.05	3.00	4.00		3.81	3.00	4.00	J	3.80	3.00	4.00	J	17.9	3.00	4.00	
PFNA	-	-	4.18	4.00	10.0	J	4.23	4.00	10.0	J	5.17	4.00	10.0	J	<	2.00	4.00	U	<	2.00	4.00	U	<	2.00	4.00	U	<	2.00	4.00	U
PFOA	40	70	29.0	4.00	10.0		24.0	4.00	10.0	J-	58.4	4.00	10.0		16.1	2.00	4.00		14.3	2.00	4.00		14.5	2.00	4.00		<	4.80	4.00	U
PFOS	40	70	37.8	4.00	10.0		13.2	4.00	10.0	J+	12.5	4.00	10.0		10.8	2.00	4.00		<	5.75	4.00	U	<	5.81	4.00	U	37.7	2.00	4.00	
PFPeA	-	-	<	10.0	10.0	U	<	10.0	10.0	U	<	10	10.0	U	<	7.28	4.00	U	<	2.00	4.00	U	<	2.00	4.00	U	<	8.02	4.00	U
PFTeDA	-	-	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U
PFTrDA	-	-	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U
PFUnDA	-	-	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U	<	3.00	4.00	U
Total PFOA+PFOS	-	70	66.8	4			37.2	4			**70.9**	**4**			26.9	2			14.3	5.75			14.5	5.81			37.7	4.8		

Grey Fill	Detected concentration exceeded OSD Screening Levels
Bold Font	Detected concentration exceeded USEPA HA Screening Levels

References

a. Assistant Secretary of Defense, 2021. Risk Based Screening Levels Calculated for PFOS and PFOA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1. 15 September 2021. Groundwater screening levels based on residential scenario for direct ingestion of groundwater.

b. USEPA, 2016. Drinking Water Health Advisory for PFOA. Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. EPA Document Number: 822-R-16-005. May 2016. / EPA. 2016. Drinking Water Health Advisory for PFOS. Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. EPA Document Number: 822-R-16-004. May 2016.

Interpreted Qualifiers

J = Estimated concentration

J- = Estimated concentration, biased low

J+ = Estimated concentration, biased high

U = The analyte was not detected at a level greater than or equal to the adjusted detection limit (DL)

UJ = The analyte was not detected at a level greater than or equal to the adjusted DL. However, the reported adjusted DL is approximate and may be inaccurate or imprecise.

Chemical Abbreviations

6:2 FTS	6:2 fluorotelomer sulfonate
8:2 FTS	8:2 fluorotelomer sulfonate
NEtFOSAA	N-ethyl perfluorooctane- sulfonamidoacetic acid
NMeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid
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PFBS	perfluorobutanesulfonic acid
PFDA	perfluorodecanoic acid
PFDoA	perfluorododecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid
PFTeDA	perfluorotetradecanoic acid
PFTrDA	perfluorotridecanoic acid
PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

AOI	Area of Interest
D/FD	duplicate
GW	groundwater
HA	Health Advisory
HQ	hazard quotient
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
LOQ	limit of quantitation
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
USEPA	United States Environmental Protection Agency
ng/l	nanogram per liter
-	not applicable
<	analyte not detected above the LOD

Appendix F Laboratory Data
Groundwater
Site Inspection Report, Camp Smith

Area of Interest			AOI 2/3				AOI3															
Sample ID			CS-MW003S-GW				AOI 3-GW1				AOI 3-GW1-FD				AOI 3-GW2				CS-MW004S-GW			
Sample Date			07/27/2021				12/10/2019				12/10/2019				12/10/2019				07/22/2021			
Analyte	**OSD Screening Level [a]**	**USEPA HA [b]**	**Result**	**LOD**	**LOQ**	**Qual**	**Result**	**LOD**	**LOQ**	**Qual**	**Result**	**LOD**	**LOQ**	**Qual**	**Result**	**LOD**	**LOQ**	**Qual**	**Result**	**LOD**	**LOQ**	**Qual**
Water, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (ng/l)																						
6:2 FTS	-	-	12.6	3.00	4.00		<	4.00	10.0	U	<	4.00	10.0	U	2.60	4.00	10.0	J	224	3.00	4.00	J-
8:2 FTS	-	-	<	3.00	4.00	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	3.00	4.00	U
NEtFOSAA	-	-	<	4.00	8.00	U	<	8.00	10.0	U	<	8.00	10.0	U	<	8.00	10.0	U	<	4.00	8.00	U
NMeFOSAA	-	-	<	4.00	8.00	U	<	8.00	10.0	U	<	8.00	10.0	U	<	8.00	10.0	U	<	4.00	8.00	U
PFBA	-	-	14.3	3.50	4.00		12.9	4.00	10.0		12.5	4.00	10.0		4.50	4.00	10.0	J	<	4.57	4.00	U
PFBS	600	-	<	3.52	4.00	U	3.77	4.00	10.0	J	3.69	4.00	10.0	J	2.66	4.00	10.0	J	<	2.00	4.00	U
PFDA	-	-	<	3.00	4.00	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	3.00	4.00	U
PFDoA	-	-	<	3.00	4.00	U	<	4.00	10.0	U	<	4.00	10.0	UJ	<	4.00	10.0	U	<	3.00	4.00	U
PFHpA	-	-	27.0	3.00	4.00		8.83	4.00	10.0	J	8.09	4.00	10.0	J	<	4.00	10.0	U	<	3.00	4.00	U
PFHxA	-	-	43.2	2.00	4.00		22.0	4.00	10.0		21.3	4.00	10.0		4.49	4.00	10.0	J	<	2.20	4.00	U
PFHxS	-	-	64.1	3.00	4.00		6.19	4.00	10.0	J	5.93	4.00	10.0	J	<	4.00	10.0	U	<	3.00	4.00	U
PFNA	-	-	1.70	2.00	4.00	J	3.57	4.00	10.0	J	4.25	4.00	10.0	J	<	4.00	10.0	U	<	2.00	4.00	U
PFOA	40	70	21.2	2.00	4.00		35.5	4.00	10.0		39.9	4.00	10.0		10.3	4.00	10.0		<	2.00	4.00	U
PFOS	40	70	**147**	2.00	4.00		15.3	4.00	10.0		14.8	4.00	10.0		19.7	4.00	10.0		<	2.00	4.00	U
PFPeA	-	-	48.5	2.00	4.00		21.9	4.00	10.0		22.2	4.00	10.0		<	7.15	10.0	U	<	2.00	4.00	U
PFTeDA	-	-	<	3.00	4.00	U	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	3.00	4.00	U
PFTrDA	-	-	<	3.00	4.00	U	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	3.00	4.00	U
PFUnDA	-	-	<	3.00	4.00	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	3.00	4.00	U
Total PFOA+PFOS	-	70	**168**	**2**			50.8	4			54.7	4			30.0	4			<	2		U

Grey Fill	Detected concentration exceeded OSD Screening Levels
Bold Font	Detected concentration exceeded USEPA HA Screening Levels

References

a. Assistant Secretary of Defense, 2021. Risk Based Screening Levels Calculated for PFOS and PFOA in Groundwater or Soil using USEPA's Regional Screening Level Calculator. HQ=0.1. 15 September 2021. Groundwater screening levels based on residential scenario for direct ingestion of groundwater.

b. USEPA, 2016. Drinking Water Health Advisory for PFOA. Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. EPA Document Number: 822-R-16-005. May 2016. / EPA. 2016. Drinking Water Health Advisory for PFOS. Office of Water (4304T). Health and Ecological Criteria Division, Washington, DC 20460. EPA Document Number: 822-R-16-004. May 2016.

Interpreted Qualifiers

J = Estimated concentration

J- = Estimated concentration, biased low

J+ = Estimated concentration, biased high

U = The analyte was not detected at a level greater than or equal to the adjusted detection limit (DL)

UJ = The analyte was not detected at a level greater than or equal to the adjusted DL. However, the reported adjusted DL is approximate and may be inaccurate or imprecise.

Chemical Abbreviations

6:2 FTS	6:2 fluorotelomer sulfonate
8:2 FTS	8:2 fluorotelomer sulfonate
NEtFOSAA	N-ethyl perfluorooctane- sulfonamidoacetic acid
NMeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid
PFBA	perfluorobutanoic acid
PFBS	perfluorobutanesulfonic acid
PFDA	perfluorodecanoic acid
PFDoA	perfluorododecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid
PFTeDA	perfluorotetradecanoic acid
PFTrDA	perfluorotridecanoic acid
PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

AOI	Area of Interest
D/FD	duplicate
GW	groundwater
HA	Health Advisory
HQ	hazard quotient
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
LOQ	limit of quantitation
OSD	Office of the Secretary of Defense
QSM	Quality Systems Manual
Qual	interpreted qualifier
USEPA	United States Environmental Protection Agency
ng/l	nanogram per liter
-	not applicable
<	analyte not detected above the LOD

Appendix F Laboratory Data
Surface Water
Site Inspection Report, Camp Smith

Area of Interest	Camp Smith																			
Sample ID	CS-SW01				CS-SW02				CS-SW03				CS-SW04				CS-SW05			
Sample Date	12/12/2019				12/12/2019				12/12/2019				12/12/2019				12/11/2019			
Analyte	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual	Result	LOD	LOQ	Qual
Water, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (ng/l)																				
6:2 FTS	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
8:2 FTS	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
NEtFOSAA	<	8.00	10.0	U	<	8.00	10.0	U	<	8.00	10.0	U	<	8.00	10.0	UJ	<	8.00	10.0	UJ
NMeFOSAA	<	8.00	10.0	U	<	8.00	10.0	U	<	8.00	10.0	U	<	8.00	10.0	U	<	8.00	10.0	UJ
PFBA	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
PFBS	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
PFDA	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	UJ
PFDoA	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	4.00	10.0	UJ	2.64	4.00	10.0	J-
PFHpA	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
PFHxA	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
PFHxS	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
PFNA	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
PFOA	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U	<	4.00	10.0	U
PFOS	<	2.86	10.0	U	<	4.00	10.0	U	<	6.63	10.0	U	<	3.30	10.0	U	<	8.16	10.0	U
PFPeA	<	4.00	10.0	U	<	4.00	10.0	U	<	2.90	10.0	U	<	4.00	10.0	U	<	3.08	10.0	U
PFTeDA	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	4.00	10.0	UJ
PFTrDA	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	4.00	10.0	UJ
PFUnDA	<	4.00	10.0	UJ	<	4.00	10.0	UJ	<	4.00	10.0	U	<	4.00	10.0	UJ	<	4.00	10.0	UJ

Interpreted Qualifiers

J- = Estimated concentration, biased low

U = The analyte was not detected at a level greater than or equal to the adjusted detection limit (DL)

UJ = The analyte was not detected at a level greater than or equal to the adjusted DL. However, the reported adjusted DL is approximate and may be inaccurate or imprecise.

Chemical Abbreviations

6:2 FTS	6:2 fluorotelomer sulfonate
8:2 FTS	8:2 fluorotelomer sulfonate
NEtFOSAA	N-ethyl perfluorooctane- sulfonamidoacetic acid
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PFDA	perfluorodecanoic acid
PFDoA	perfluorododecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid
PFTeDA	perfluorotetradecanoic acid
PFTrDA	perfluorotridecanoic acid
PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
LOQ	limit of quantitation
QSM	Quality Systems Manual
Qual	interpreted qualifier
ng/l	nanogram per liter
SW	surface water
<	analyte not detected above the LOD

Appendix F Laboratory Data
Grain Size
Site Inspection Report, Camp Smith

Area of Interest	AOI 2/3
Sample ID	CS-MW002D-SB-62-63
Sample Date	7/23/2021
Depth	62 - 63 ft
	%
Grain Size by ASTM D422 [1]	
Clay (<0.002 mm)	33.89
Silt (>0.002 - 0.075 mm)	63.24
Fine Sand (>0.075 - 0.42 mm)	2.53
Medium Sand (>0.42 - 2.0 mm)	0.34
Coarse Sand (>2.0 - 4.75 mm)	0
Gravel (>4.75 - 75 mm)	0

Notes

1.) Grain size fraction based on USCS soil classifications

Acronyms and Abbreviations

%	percent
AOI	Area of Interest
ASTM	American Society for Testing and Materials
CS	Camp Smith
ft	feet
mm	millimeter
MW	monitoring well
SB	soil boring
USCS	Unified Soil Classification System

Sample ID	CS-ST-04S-072621			
Sample Date	07/26/2021			
Analyte	Result	LOD	LOQ	Qual
Soil, PFAS by LCMSMS compliant with QSM 5.3 Table B-15 (µg/k				
6:2 FTS	<	0.316	1.58	U
8:2 FTS	<	0.158	1.58	U
NEtFOSAA	<	0.158	1.58	U
NMeFOSAA	<	0.079	1.58	U
PFBA	0.090	0.158	1.58	J
PFBS	<	0.079	1.58	U
PFDA	<	0.158	1.58	U
PFDoA	<	0.079	1.58	U
PFHpA	<	0.079	1.58	U
PFHxA	0.032	0.079	1.58	J
PFHxS	<	0.158	1.58	U
PFNA	<	0.079	1.58	U
PFOA	<	0.316	1.58	U
PFOS	<	0.316	1.58	U
PFPeA	<	0.079	1.58	U
PFTeDA	<	0.079	1.58	U
PFTrDA	<	0.158	1.58	U
PFUnDA	<	0.079	1.58	U

Interpreted Qualifiers

J = Estimated concentration

U = The analyte was not detected at a level greater than or equal to the adjusted detection limit

Chemical Abbreviations

6:2 FTS	6:2 fluorotelomer sulfonate
8:2 FTS	8:2 fluorotelomer sulfonate
NEtFOSAA	N-ethyl perfluorooctane- sulfonamidoacetic acid
NMeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid
PFBA	perfluorobutanoic acid
PFBS	perfluorobutanesulfonic acid
PFDA	perfluorodecanoic acid
PFDoA	perfluorododecanoic acid
PFHpA	perfluoroheptanoic acid
PFHxA	perfluorohexanoic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PFPeA	perfluoropentanoic acid
PFTeDA	perfluorotetradecanoic acid
PFTrDA	perfluorotridecanoic acid
PFUnDA	perfluoro-n-undecanoic acid

Acronyms and Abbreviations

CS	Camp Smith
LCMSMS	liquid chromatography with tandem mass spectrometry
LOD	limit of detection
LOQ	limit of quantitation
QSM	Quality Systems Manual
Qual	interpreted qualifier
µg/kg	micrograms per kilogram
<	analyte not detected above the LOD

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Appendix G
Laboratory Reports

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Due to file size, laboratory reports are provided electronically (CD) or can be requested.

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