



**Groundwater Sample Results,
Level 4 Laboratory Report, Electronic Data
Deliverable, Data Validation Report, Sample Location
Report, SDG 20-1481**

*NRL
Chesapeake Bay Detachment, MD*

October 2021

**CTO-4532: NRL Chesapeake Bay Detachment
(NRL-CBD) Site 10
Project No 100142218
PFAS by DoD QSM 5.3 Table B-15**

GW

Batch 20-1481

Package DP-20-1360

Submitted to:

CH2M

5701 Cleveland Street

Virginia Beach, VA 23462 USA

Submitted by:

Battelle Norwell Operations
141 Longwater Drive Suite 202
Norwell, MA 02061

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**CTO-4532: NRL Chesapeake Bay Detachment
(NRL-CBD) Site 10
Project No 100142218
PFAS by DoD QSM 5.3 Table B-15
GW
Batch 20-1481
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Submitted to:
CH2M
5701 Cleveland Street
Virginia Beach, VA 23462 USA

NELAP Accreditation Number: E87856 (Florida Department of Health)

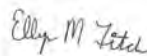
Submitted by:
Battelle Norwell Operations
141 Longwater Drive Suite 202
Norwell, MA 02061

Analyst Approval:



Digitally signed by Denise Schumitz
Date: 2020.11.17 14:04:22 -05'00'

QC Chemist Approval:



Digitally signed by Ellyn M. Fitch
Date: 2020.11.17 16:17:02 -05'00'

Project Manager Approval:



Robert Lizotte, Jr.
2020.11.17 16:24:13 -05'00'

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CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10

Project No 100142218

PFAS by DoD QSM 5.3 Table B-15

GW

Batch 20-1481


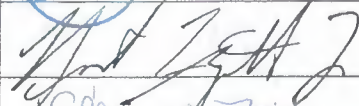






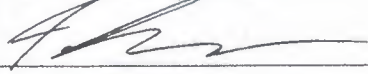



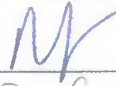

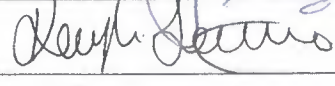
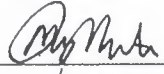
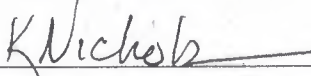

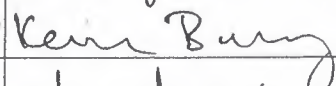
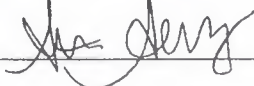
Package DP-20-1360

1	<i>Work Plan</i> Laboratory Work Plan, Addendums To Work Plan, Memos From Project Manager, Special Instructions, Chain-of-Custody Reports.	1
2	<i>Tables</i> Analytical Data Tables, Qualifier Definitions.	20
3	<i>Miscellaneous Documentation</i> Case Narrative, Miscellaneous Documentation Form, Quality Control Summary, Example Calculations, Internal Standard Recovery Report, Retention Time Window Report.	30
4	<i>Sample Preparation Records</i> Sample Preparation Records, Dilution Worksheets, Standard Preparation Records, Certificates Of Analysis, GPC Check Report.	167
5	<i>Analytical Calibrations</i> Analytical Sequence, Analytical Method, Tune Report, Initial Calibration, Pesticide Degradation Report, RF Summary, Calibration Verifications, Independent Calibration Verification Check.	182
6	<i>Analytical Data</i> Raw Data Quantification Reports.	261
7	<i>Chromatograms</i> Sample And Standard Chromatograms.	278
8	<i>Unused Data</i>	N/A


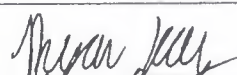
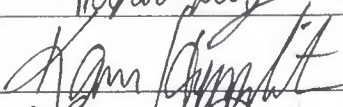

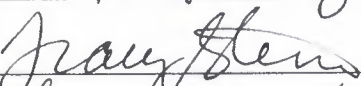
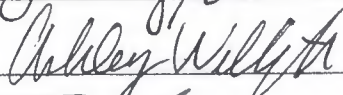

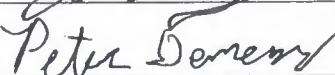
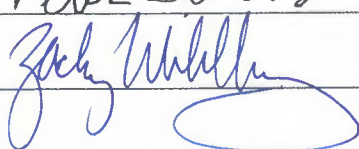
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Master Signature Page

Name (Printed)	Signature	Initials	Date
Jonathan Thom		JRT	1/9/2020
Robert Lizette, Jr.		BL	1.9.2020
Elynn M. Fitch		EF	1/9/2020
Carla Devine		CRD	1/9/2020
Dennis Schmitz		DS	1/9/2020
Lauren Griffith		LMG	1.9.2020
Carrie P. McLarthy		CPM	1/9/2020
Rich Restucci		RR	1/9/2020
Sam Guimaraes		SAG	1/9/2020
Jordan Tower		JT	1/9/2020
Christie Usher		CU	1/9/2020
Kevin McInerney		KM	1/14/2020
Matt Schumitz		MDS	1/14/2020
Weidong Li		W.L	1/14/2020
Kayla Lamarre		KAL	1/14/2020
MUNAZ MUNTASIR		MM	01/14/2020
Kristen Nichols		KN	01/14/2020
Kelsey Harnden		KH	01/30/2020
Kevin Bailey		KB	1/30/2020
Stephanie Schultz		SAS	1/30/2020

Master Signature Page

Name (Printed)	Signature	Initials	Date
Uimiceo Brown		UB	01/30/20
Ryan Kelly		RK	01/30/20
KAREN HYPPOLITE		K.H.	01/31/20
Gail DeRuzzo		GD	01/31/2020
Tracy Stenner		JS	1/31/2020
Ashley Wellington		AW	1/31/2020
Daniel Cooney		DAC	1/31/2020
Peter Demers		PD	1/31/2020
Zachary Willenberg		ZW	2/3/2020

Sample Summary

Client: CH2M
SDG: 20-1481
Project/Site: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10
CTO: 4532

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Receipt Date
DB386PB-FS	Procedural Blank	WATER	11/16/2020	11/16/2020
DB387LCS-FS	Laboratory Control Sample	WATER	11/16/2020	11/16/2020
G1773-FS1	CBD-AOA-MW18-1020	GW	10/19/2020	10/20/2020

Work Plan



WORK/QUALITY ASSURANCE PROJECT PLAN

1.0 GENERAL PROJECT INFORMATION

Project Title: CTO-4532: PFAS in Water
Project Number: 100142218
Client: CH2M
 2411 Dulles Corner Park
 Suite 500
 Herdon, VA 20171
 USA

Client Contact Information: Michael Zamboni
 Project Chemist
 (703) 376-5301(V)
 NA
 Michael.Zamboni@jacobs.com

Effective Date of QAPP: 10/1/2020
Version Number: 100142218(L)-02
Project Manager: Thorn, Jonathan
Laboratory Task Manager: Thorn, Jonathan
Deliverable Due Date: 10/29/2020

2.0 SCOPE OF WORK

Overview: Analysis of non-potable water for PFAS.
Matrix: Water

2.1 TECHNICAL APPROACH

2.1.1 Sample Receipt, Storage, and Handling

The list of samples for this project plan are presented in Attachment 1.

Storage Directions: Store samples refrigerated prior to extraction.
Sub_Sampling: None
Procedures: NA
Contact: NA
Comment: None.
Archiving: Store excess samples for six months after delivery of final data.
Disposal: Dispose of samples in the appropriate waste stream.



WORK/QUALITY ASSURANCE PROJECT PLAN

2.1.2 Sample Preparation

IDW samples should be batched separately from field samples.

Samples Expected:	Samples Per Batch:	Batches Expected:
51	20	3

Batch quality control samples are defined in Table 1.

Target samples are presented in Attachment 1.

Table 1: Quality Control Samples

Type:	Description:	Count:	Rgt:	Reference:	Comment:
PB	Laboratory control reagent blank.	1 per batch	--	NA	
LCS	Laboratory Control Sample	1 per batch	No	NA	
MS	Spiked field sample for determining method accuracy in the presence of matrix.	1 per batch	--	NA	MS/MSD identified on COC with suffix "-MS" and "-SD".
MSD	Spiked field sample for determining method accuracy and precision in the presence of matrix.	1 per batch	--	NA	

2.1.3 Extraction/Preparation

2.1.3.1 Extraction

SOP No.-Rev:	5-370-11
SOP Title:	<i>Extraction of Poly and Perfluoroalkyl Substances from Environmental Matrices</i>
Sample Size:	250 ml
SIS and LCS/MS Compounds:	Defined in Table 2.
Deviations:	None
Comments:	None

Table 2: SIS and LCS/MS Spiking Level

Standard Type	Standard Contents	Spike Amount (ng)	Volume (uL)	Comment
PFAS - DoD Low Level Labelled Extracted Internal Standard (SIS)	LC22 SIS	~ 1.13 - 1.25 ng	125 uL	NA



WORK/QUALITY ASSURANCE PROJECT PLAN

Standard Type	Standard Contents	Spike Amount (ng)	Volume (uL)	Comment
PFAS - DoD Second Source LCS/MS solution	LD11 LCS/MS	~ 7.5 ng	75 uL	Vary spikes 25 (LCS only), 50, 75, 100, 125 µL

2.1.3.2 Cleanup

None.

RIS spiking levels are presented in Table 3.

Extract PIV (uL): 1000

Table 3: RIS Spiking Level

Standard Type	Standard Contents	Spike Amount (ng)	Volume (uL)	Comment
PFAS - DoD Internal Standard Spiking Solution	LD33 RIS	~ 1.25 ng	125 uL	NA

2.1.4 Instrumental Analysis

The list of analytes along with data quality criteria are presented in Attachment 2.

- 1) SOP_No-Rev: **5-369-08**
- SOP_Title: *Analysis of Perfluoroalkyl Substances in Environmental Samples by Liquid Chromatography and Tandem Mass Spectrometry (LC-MS/MS)*
- Deviations: None.
- Comments: None.

2.2. DELIVERABLES

Deliverables Due: 10/29/2020

LIMS Reports: No

Histograms: No

Excel Tables: No

EICs: No

Chromatograms: No

EDDs: No



WORK/QUALITY ASSURANCE PROJECT PLAN

Comments:

- 28-day TAT for most samples
- Samples marked rush will be 7-day TAT
- LIV validation data packages
- CH2M EDD file

3.0 QUALITY

The Method Quality Objectives are defined in Attachment 3.

4.0 ORGANIZATION AND COMMUNICATION

4.1 ORGANIZATION

The project team is defined in Table 4. Supervisors may make substitutions with Project Manager concurrence.

Table 4: Project Team and Roles

Staff Member	Role	Comment
Jonathan R. Thorn	Project Manager	NA
Ryan P. Kelly	Sample Preparation	NA
Stephanie A. Schultz	LC-MS/MS Analysis	NA
Matt D. Schumitz	Sample Custody	NA
Carla R. Devine	Quality Control Officer	NA
Zachary J. Willenberg	Quality Assurance Officer	NA

4.2 COMMUNICATION

A kick-off meeting will be held to discuss project scope and goals.

5.0 SCHEDULE

The project schedule is presented in Table 5.

Table 5. Schedule of Laboratory Activities

Activity:	Start Date:	End Date:	TAT (days):	Comment:
Sample Receipt	10/01/2020	10/01/2020	0	NA
Sample Preparation	10/01/2020	10/12/2020	11	NA
Instrument Analysis	10/12/2020	10/23/2020	11	NA
Quality Control Review	10/23/2020	10/27/2020	4	NA



WORK/QUALITY ASSURANCE PROJECT PLAN

Activity:	Start Date:	End Date:	TAT (days):	Comment:
Quality Assurance Review	10/27/2020	10/29/2020	2	NA

6.0 BUDGET

The labor budget for the analytical task is presented in Table 6.

Table 6. Labor Budget (Laboratory Analytical Task)

Labor Activity:	Hours/ Batch:	Batches:	Total Hours:	Comment:
Sample Receipt	4	3	12	NA
Sample Preparation	9	3	27	NA
Instrument Analysis	10	3	30	NA
Quality Control Review	3	3	9	NA
Quality Assurance Review	1	3	3	NA

7.0 STAFF DEVELOPMENT

None anticipated.



WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 1: Target Samples

Shipment: SHP-201005-02
Status: Pending
Description: Site 10 SI
Range: G1071-G1072
Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	G1071	CBD-AOA-EB01-100220-SO	10/02/2020 2:10 pm	AQ	R0119	(NA)		
2	G1072	CBD-AOA-FB01-100220	10/02/2020 2:00 pm	AQ	R0119	(NA)		

Shipment: SHP-201012-02
Status: Pending
Description: Site 10
Range: G1524-G1525
Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	G1524	CBD-AOA-FB02-100920	10/09/2020 1:00 pm	AQ	R0119	(NA)		
2	G1525	CBD-AOA-EB02-100920-SO	10/09/2020 1:10 pm	AQ	R0119	(NA)		

Shipment: SHP-201014-03
Status: Pending
Description: Site 10 SI
Range: G1644-G1668
Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	G1644	CBD-AOA-SW07-1020	10/13/2020 10:00 am	SW	R0119	(NA)		
2	G1645	CBD-AOA-SW05-1020	10/13/2020 10:20 am	SW	R0119	(NA)		
3	G1646	CBD-AOA-SW03-1020	10/13/2020 10:35 am	SW	R0119	(NA)		
4	G1647	CBD-AOA-SW04-1020	10/13/2020 10:40 am	SW	R0119	(NA)		
5	G1651	CBD-AOA-SW02-1020	10/13/2020 11:30 am	SW	R0119	(NA)		
6	G1652	CBD-AOA-SW02P-1020	10/13/2020 11:35 am	SW	R0119	(NA)		
7	G1654	CBD-AOA-SW01-1020	10/13/2020 12:00 pm	SW	R0119	(NA)		
8	G1655	CBD-AOA-FB03-101320	10/13/2020 12:20 pm	AQ	R0119	(NA)		
9	G1656	CBD-AOA-EB01-101320-SW	10/13/2020 12:25 pm	AQ	R0119	(NA)		
10	G1657	CBD-AOA-EB01-101320-SD	10/13/2020 12:30 pm	AQ	R0119	(NA)		
11	G1658	CBD-AOA-SW08-1020	10/13/2020 1:00 pm	SW	R0119	(NA)		
12	G1661	CBD-AOA-SW06-1020	10/13/2020 1:25 pm	SW	R0119	(NA)		
13	G1663	CBD-AOA-SW11-1020	10/13/2020 2:00 pm	SW	R0119	(NA)		
14	G1664	CBD-AOA-SW11P-1020	10/13/2020 2:05 pm	SW	R0119	(NA)		
15	G1665	CBD-AOA-SW10-1020	10/13/2020 2:10 pm	SW	R0119	(NA)		
16	G1666	CBD-AOA-SW10-1020-MS	10/13/2020 2:10 pm	SW	R0119	(NA)		



WORK/QUALITY ASSURANCE PROJECT PLAN

Shipment: SHP-201014-03
Status: Pending
Description: Site 10 SI
Range: G1644-G1668
Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
17	G1667	CBD-AOA-SW10-1020-SD	10/13/2020 2:10 pm	SW	R0119 (NA)			
18	G1668	CBD-AOA-SW09-1020	10/13/2020 2:25 pm	SW	R0119 (NA)			

Shipment: SHP-201016-02
Status: Pending
Description: Site 10 SI
Range: G1696-G1702
Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	G1696	CBD-HVG-GW10-1020	10/14/2020 3:15 pm	GW	R0119 (NA)			
2	G1697	CBD-HVG-GW09-1020	10/14/2020 3:30 pm	GW	R0119 (NA)			
3	G1698	CBD-EB01-101420-GW	10/14/2020 3:40 pm	AQ	R0119 (NA)			
4	G1699	CBD-AOA-MW10-1020	10/15/2020 10:25 am	GW	R0119 (NA)			
5	G1700	CBD-BKG-MW03-1020	10/15/2020 2:00 pm	GW	R0119 (NA)			
6	G1701	CBD-SO4-MW01-1020	10/15/2020 3:25 pm	GW	R0119 (NA)			
7	G1702	CBD-SO4-MW01P-1020	10/15/2020 3:30 pm	GW	R0119 (NA)			

Shipment: SHP-201019-01
Status: Pending
Description: Site 10 SI
Range: G1707-G1709
Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	G1707	CBD-AOA-MW15-1020	10/16/2020 10:40 am	GW	R0119 (NA)			
2	G1708	CBD-AOA-MW16-1020	10/16/2020 12:05 pm	GW	R0119 (NA)			MS/MSD
3	G1709	CBD-FB04-101620	10/16/2020 12:10 pm	GW	R0119 (NA)			

Shipment: SHP-201020-04
Status: Pending
Description: Site 10 SI
Range: G1765-G1775
Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	G1765	CBD-AOA-MW04-1020	10/19/2020 10:20 am	GW	R0119 (NA)			
2	G1766	CBD-AOA-MW01-1020	10/19/2020 10:35 am	GW	R0119 (NA)			
3	G1767	CBD-AOA-MW01P-1020	10/19/2020 10:40 am	GW	R0119 (NA)			
4	G1768	CBD-AOA-MW03-1020	10/19/2020 11:35 am	GW	R0119 (NA)			



WORK/QUALITY ASSURANCE PROJECT PLAN

Shipment: SHP-201020-04
Status: Pending
Description: Site 10 SI
Range: G1765-G1775
Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
5	G1769	CBD-AOA-MW08-1020	10/19/2020 12:55 pm	GW	R0119	(NA)		
6	G1770	CBD-AOA-MW08-1020-MS	10/19/2020 12:55 pm	GW	R0119	(NA)		
7	G1771	CBD-AOA-MW08-1020-SD	10/19/2020 12:55 pm	GW	R0119	(NA)		
8	G1772	CBD-AOA-MW02-1020	10/19/2020 1:10 pm	GW	R0119	(NA)		
9	G1773	CBD-AOA-MW18-1020	10/19/2020 2:35 pm	GW	R0119	(NA)		
10	G1774	CBD-AOA-EB01-101920-GW	10/19/2020 4:00 pm	AQ	R0119	(NA)		
11	G1775	CBD-SO3-MW01-1020	10/19/2020 3:20 pm	GW	R0119	(NA)		

Shipment: SHP-201022-01
Status: Pending
Description: Site 10 SI
Range: G1794-G1801
Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	G1794	CBD-AOA-MW07-1020	10/20/2020 3:50 pm	GW	R0118	(NA)		
2	G1795	CBD-AOA-MW17-1020	10/20/2020 3:45 pm	GW	R0118	(NA)		
3	G1796	CBD-AOA-MW19-1020	10/20/2020 1:45 pm	GW	R0118	(NA)		
4	G1797	CBD-AOA-FB05-102020	10/20/2020 12:40 pm	AQ	R0118	(NA)		Field Blank - GW this week
5	G1798	CBD-AOA-EB01-102020-GW	10/20/2020 4:20 pm	AQ	R0118	(NA)		Equipment Blank - monsoon pump
6	G1799	CBD-BKG-MW01-1020	10/20/2020 2:20 pm	GW	R0118	(NA)		
7	G1800	CBD-BKG-MW02-1020	10/20/2020 3:25 pm	GW	R0118	(NA)		
8	G1801	CBD-SO3-MW02-1020	10/20/2020 12:00 pm	GW	R0118	(NA)		

Shipment: SHP-201022-02
Status: Pending
Description: Site 10 SI
Range: G1802-G1804
Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	G1802	CBD-AOA-MW09-1020	10/21/2020 9:35 am	GW	R0119	(NA)		
2	G1803	CBD-AOA-MW05-1020	10/21/2020 10:25 am	GW	R0119	(NA)		
3	G1804	CBD-AOA-EB01-102120-GW	10/21/2020 10:35 am	AQ	R0119	(NA)		Equipment Blank - monsoon



WORK/QUALITY ASSURANCE PROJECT PLAN

Shipment: SHP-201029-03
Status: Pending
Description: Site 10 SI
Range: G2203-G2212
Comment: NA

No:	BDO Id:	Client Sample ID:	Collection Date:	Matrix:	Storage Facility:	Location:	No:	Comments:
1	G2203	CBD-AOA-MW06-1020	10/27/2020 10:00 am	GW	R0119	(NA)		
2	G2204	CBD-AOA-EB01-102720-GW	10/27/2020 10:10 am	AQ	R0119	(NA)		
3	G2205	CBD-AOA-MW12-1020	10/28/2020 1:45 pm	GW	R0119	(NA)		
4	G2206	CBD-AOA-MW11-1020	10/28/2020 3:30 pm	GW	R0119	(NA)		
5	G2207	CBD-AOA-MW11P-1020	10/28/2020 3:35 pm	GW	R0119	(NA)		
6	G2208	CBD-AOA-FB01-102820	10/28/2020 3:55 pm	AQ	R0119	(NA)		
7	G2209	CBD-AOA-EB01-102820-GW	10/28/2020 4:40 pm	AQ	R0119	(NA)		
8	G2210	CBD-AOA-MW14-1020	10/28/2020 4:35 pm	GW	R0119	(NA)		
9	G2211	CBD-AOA-MW13-1020	10/28/2020 5:10 pm	GW	R0119	(NA)		
10	G2212	CBD-AOA-IW01-102820	10/28/2020 5:30 pm	AQ	R0119	(NA)		



WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 2: Test Codes

Project Test Code Name:	Master_369B
SOP Reference:	5-369 - Analysis of Perfluoroalkyl Substances in Environmental Samples by Liquid Chromatography and Tandem Mass Spectrometry (LC-MS/MS)
Description:	PFAS by DoD QSM 5.3 Table B-15
Matrix:	L - Liquid Samples, like water or sea water, prepared and analyzed under the same class of detection limits.
Detection Limit Study:	5-369
Instrument:	LC-MS/MS
MQO Criteria	Universal_LC
Standard Report:	Standard Result Report

Method Specific Reporting		Holding Times (days)	Data Flags
Result Units:	ng/L	Unit Conversion: (none)	Sample: 14 DL_Flag: U
Weight Basis:	LIQUID	Result Format: Fixed Digits	Frozen: 14 RL_Flag: J
Standard Basis:	SIS	# of Figures/Digits: 2	Extract: 28 PB_Flag: B
Oil Weight Basis:	No	Oil Weight Source: Oil Weight	DIL_Flag: D
U-Value Substitution:	U-Flag=MD	Histograms: No	HT_Flag: T
ECD_Reporting:	No		

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
1	Perfluoro-n-hexanoic acid	PFHxA	T		13C5-PFHxA	No	No
2	Perfluoro-n-heptanoic Acid	PFHpA	T		13C4-PFHpA	No	No
3	Perfluoro-n-octanoic Acid	PFOA	T		13C8-PFOA	No	No
4	Perfluorononanoic Acid	PFNA	T		13C9-PFNA	No	No
5	Perfluoro-n-decanoic Acid	PFDA	T		13C6-PFDA	No	No
6	Perfluoro-n-undecanoic acid	PFUnA	T		13C7-PFUnA	No	No
7	Perfluoro-n-dodecanoic acid	PFDoA	T		13C2-PFDoA	No	No
8	Perfluoro-n-tridecanoic acid	PFTTrDA	T		13C2-PFTeDA	No	No
9	Perfluoro-n-tetradecanoic acid	PFTeDA	T		13C2-PFTeDA	No	No
10	N-methylperfluoro-1-octanesulfonamidoacetic acid	NMeFOSAA	T		d3-MeFOSAA	No	No
11	N-ethylperfluoro-octanesulfonamidoacetic acid	NEtFOSAA	T		d5-EtFOSAA	No	No
12	Perfluoro-1-butanefulfonate	PFBS	T		13C3-PFBS	No	No
13	Perfluoro-1-hexanesulfonate	PFHxS	T		13C3-PFHxS	No	No
14	Perfluoro-1-octanesulfonate	PFOS	T		13C8-PFOS	No	No
15	Hexafluoropropylene oxide dimer acid	HFPO-DA	T		13C3-HFPO-DA	No	No
16	Adona	Adona	T		13C3-HFPO-DA	No	No
17	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	T		13C3-HFPO-DA	No	No



It can be done

WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 2: Test Codes

Project Test Code Name: Master_369B

No:	Analyte:	Report Name:	Type	RIS	SIS	Hidden:	Graph:
18	9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	T		13C3-HFPO-DA	No	No
1	13C5-PFHxA	13C5-PFHxA	SIS	13C2-PFOA		No	No
2	13C4-PFHpA	13C4-PFHpA	SIS	13C2-PFOA		No	No
3	13C8-PFOA	13C8-PFOA	SIS	13C2-PFOA		No	No
4	13C9-PFNA	13C9-PFNA	SIS	13C2-PFOA		No	No
5	13C6-PFDA	13C6-PFDA	SIS	13C2-PFDA		No	No
6	13C7-PFUnA	13C7-PFUnA	SIS	13C2-PFDA		No	No
7	13C2-PFDoA	13C2-PFDoA	SIS	13C2-PFDA		No	No
8	13C2-PFTeDA	13C2-PFTeDA	SIS	13C2-PFDA		No	No
9	d3-MeFOSAA	d3-MeFOSAA	SIS	13C4-PFOS		No	No
10	d5-EtFOSAA	d5-EtFOSAA	SIS	13C4-PFOS		No	No
11	13C3-PFBS	13C3-PFBS	SIS	13C4-PFOS		No	No
12	13C3-PFHxS	13C3-PFHxS	SIS	13C4-PFOS		No	No
13	13C8-PFOS	13C8-PFOS	SIS	13C4-PFOS		No	No
14	13C3-HFPO-DA	13C3-HFPO-DA	SIS	13C2-PFOA		No	No

Total Analytes: 32

Subtract Peaks:

None

Sum Peaks:

None



WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 2: Test Codes

Project Test Code Name: Master_369B

ICAL Acceptance Criteria:

Curve Fit:	Limit Mean(%):	Mean Qual:	Limit Ind.:	Ind. Qual:	Min Points:	Points Qual:	Comments:
Linear	NA	NA	0.99	N	5	N	y = Bx + C
Quadratic	NA	NA	0.99	N	6	N	y = Ax^2 + Bx + C

Continuing Calibration Verification Criteria:

CCV Name: 5-369

Frequency Hrs:	Mean PD(%):	Individual PD(%):	RIS/SIS RT Window (min):	Area Limit Low(%):	Area Limit High(%):	Comment:
12 (N)	30 (N)	30 (N)	0.04 (N)	-50	100 (N)	NA

Independent Calibration Verification:

ICC Name: 5-369

Mean PD Limit(%):	Ind. PD Limit(%):	RIS/SIS Window Limit (Secs):	Area Limit High(%):	Area Limit Low(%):	Comment:
30 (N)	30 (N)	0.04 (N)	-50	100 (N)	NA

Mass Discrimination Criteria:

None

Degradation Check Criteria:

None



WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 3: Method Quality Objectives

MQO Application: <i>Universal_LC</i>			
MQO:	Acceptance Criteria:	Qual:	Corrective Action:
Procedural Blank	Samples must be greater than five times the blank concentration (>5xPB).	B	Review with Project Manager; re-analyze or justify results in project records.
PB Measurement Quality Objective	Organic results in the Procedural Blank are less than 1/2 times the LOQ (<1/2xLOQ)	N	Review with Project Manager; re-analyze or justify results in project records.
Laboratory Control Sample	Recovery values 70-130%.	N	Review with project manager; re-analyze or justify reporting the results in project records.
Matrix Spike / Matrix Spike Duplicate Recovery	Organics 70-130%. Analyte concentration in MS/MSD must be greater than five times reported background concentration. Organics Results in the Target is less than 5 times the Original	N n	Review with Project Manager; re-analyze or justify reporting results in the project records.
Matrix Spike/Spike Duplicate Precision	Organics results less than 30% Relative Percent Difference (RPD). Analyte concentration in MS/MSD must be greater than five times reported background concentration. Organics Results in the Target is less than 5 times the Original	N n	Review with Project Manager; re-analyze or justify reporting results in the project records.
Standard Reference Material Accuracy	Organics Percent Difference less than 30% from a range of certified values on average. Analyte concentration must be greater than five times the Method Detection Limit (>5xMDL). Organics Results in the Target is less than 5 times the MDL	N n	Review with Project Manager; re-analyze or justify reporting results in the project records.
Analytical Duplicate Precision	Organics results less than 30% Relative Percent Difference (RPD). Analyte concentration must be > 5x MDL. Organics Results in the Original is less than 5 times the MDL	N n	Review with Project Manager; re-analyze or justify reporting results in the project records.



WORK/QUALITY ASSURANCE PROJECT PLAN

Attachment 3: Method Quality Objectives

MQO Application:	<i>Universal_LC</i>		
MQO:	Acceptance Criteria:	Qual:	Corrective Action:
Analytical Triplicate Precision	Organics results less than 30% Relative Standard Deviation (RSD). Analyte concentration must be > 5x MDL. Organics Results in the Original is less than 5 times the MDL	N n	Review with Project Manager; re-analyze or justify reporting results in the project records.
Surrogate Compound Recovery	Recovery results between 50% and 150%.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
Control Oil	RPD < 30% for at least 90% of analytes	N	Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented.
Instrument Calibration	5-369-8: R-squared greater than or equal to 0.990		Results examined by project manager, task leader, or subcontractor lab manager. Reextraction, reanalysis, or justification documented.
Independent Calibration Check Solution	5-369-8: Individual PD less than or equal to 30%. Mean Percent Difference less than or equal to 30%.	N	Review with Project Manager; re-analyze or justify in project records.
Continuing Calibration Verification	5-369-8: Individual PD less than or equal to 30%. Mean Percent Difference less than or equal to 30%.	N	Review with Project Manager; re-analyze or justify in project records.

ShpNo SHP-201020-04

It can be done

Battelle Project No: 100142218

Sample Receipt Form

Approved: Authorized: Project Number: 708007CHClient: JacobsReceived by: Schumitz, MattDate/Time Received: Tuesday, October 20, 2020 10:30 AMNo. of Shipping Containers: 1**SHIPMENT**Method of Delivery: Commercial CarrierTracking Number: Fed ExCOC Forms: Shipped with samples No Forms**Cooler(s)/Box(es)**

Cntr	Type	Tracking No.	Seal	Seal	Container	Therm.	Temp C	Smps
1 of 1	Cooler	7718 1466 2461	Custody Seals	Intact	Intact	Therm_2	1.3	11

Samples

Sample Labels: Sample labels agree with COC forms
 Discrepancies (see Sample Custody Corrective Action Form)

Container Seals: Tape Custody Seals Other Seals (See sample Log)
 Seals intact for each shipping container
 Seals broken (See sample log for impacted samples)

Condition of Samples: Sample containers intact
 Sample containers broken/leaking (See Custody Corrective Action Form)

Temperature upon receipt (°C): 1.3 Temperature Blank used Yes No
(Note: If temperature upon receipt differs from required conditions, see sample log comment field)

Samples Acidified: Yes No Unknown

Initial pH 5-9?: Yes No NA
If no, individual sample adjustments on the Auxiliary Sample Receipt Form

Total Residual Chlorine Present?: Yes No NA
If yes, individual sample adjustments on the Auxiliary Sample Receipt Form

Head Space <1% in samples for water VOC analysis: Yes No NA
Individual sample deviations noted on sample log

Samples Containers:
 Samples returned in PC-grade jars: Yes No Unknown /Lot No.: Unknown

Storage Location: Custody: Refrigerator - R0119 (NA) BDO IDs Assigned: G1765 - G1775

Samples logged in by: Schumitz, Matt Date/Time: 10/20/2020 10:30 AM

Approved By: _____ Approved On: _____

Authorized By: _____ Authorized On: _____



It can be done

ShpNo SHP-201020-04

Battelle Project No: 100142218

Sample Receipt Form Details

Approved: Authorized

Project Number: 708007CH Client: Jacobs

Received by: Schumitz, Matt Date/Time Received: Tuesday, October 20, 2020 10:30 AM

No. of Shipping Containers: 1

BDO Id:	Client Sample ID:	Collection Date:	Login Date:	Ctrs:	Matrix:	Temp:	pH:	TRC:	VOC:	Stored In:	Loc:	No:	Comments:
G1765	CBD-AOA-MW04-1020	10/19/20 10:20	10/20/20 11:33	2	GW	1.3	NA	NA	NA	R0119 (NA)			
G1766	CBD-AOA-MW01-1020	10/19/20 10:35	10/20/20 11:33	2	GW	1.3	NA	NA	NA	R0119 (NA)			
G1767	CBD-AOA-MW01P-1020	10/19/20 10:40	10/20/20 11:33	2	GW	1.3	NA	NA	NA	R0119 (NA)			
G1768	CBD-AOA-MW03-1020	10/19/20 11:35	10/20/20 11:33	2	GW	1.3	NA	NA	NA	R0119 (NA)			
G1769	CBD-AOA-MW08-1020	10/19/20 12:55	10/20/20 11:34	2	GW	1.3	NA	NA	NA	R0119 (NA)			
G1770	CBD-AOA-MW08-1020-MS	10/19/20 12:55	10/20/20 11:34	2	GW	1.3	NA	NA	NA	R0119 (NA)			
G1771	CBD-AOA-MW08-1020-SD	10/19/20 12:55	10/20/20 11:34	2	GW	1.3	NA	NA	NA	R0119 (NA)			
G1772	CBD-AOA-MW02-1020	10/19/20 13:10	10/20/20 11:34	2	GW	1.3	NA	NA	NA	R0119 (NA)			
G1773	CBD-AOA-MW18-1020	10/19/20 14:35	10/20/20 11:34	2	GW	1.3	NA	NA	NA	R0119 (NA)			
G1774	CBD-AOA-EB01-101920-GW	10/19/20 16:00	10/20/20 11:35	2	AQ	1.3	NA	NA	NA	R0119 (NA)			
G1775	CBD-SO3-MW01-1020	10/19/20 15:20	10/20/20 11:35	2	GW	1.3	NA	NA	NA	R0119 (NA)			

Total Samples: 11



Chain-of-Custody

Client Contact Information Mike Zamboni michael.zamboni@jacobs.com CH2M/Jacobs		Project Manager: Caitlin Bronfield Phone: 703 376 5097 Email: caitlin.bronfield@jacobs.com		Sampling Site: Site 10 (FA)		Site Information: NRL CBD	
Project Name: Site 10 SI Project No.: 708207EH		Turnaround Time (TAT) Requested:		Preservative: none		COC #	
		Normal <input checked="" type="checkbox"/> Priority <input type="checkbox"/> RUSH <input type="checkbox"/>		Analysis: PFAS		Page# 1 of 1	
Sample Identification		Sample Date	Sample Time	Sample Type	Matrix	Total # of Cont.	
CBD- AOA -MW04-1020		10/19/20	10 20	Grab	GW	2	G1765
CBD- AOA -MW01-1020			10 35			2	66
CBD- AOA -MW01P-1020			10 40			2	67 Duplicate
CBD- AOA -MW03-1020			11 35			2	68
CBD- AOA -MW08-1020			12 55			2	69
CBD- AOA -MW08-1020-MS			12 55			2	70 Run QA/QC MS/MSD
CBD- AOA -MW08-1020-SD			12 55			2	71 Run QA/QC MS/MSD
CBD- AOA -MW02-1020			13 10			2	72
CBD- AOA -MW18-1020			14 35			2	73
CBD- AOA -EB01-101920-GW			16 00		AQ	2	74
CBD- 503 -MW01-1020			15 20		GW	2	G1775
CBD-503-MW02-1020						2	
Receipt Temperature: (°C)		Samples Intact: Yes - No		Samples on Ice: Yes - No		Receipt Comments:	
Relinquished by (Print/Sign): Caitlin Bronfield		Company: CH2M/Jacobs		Date/Time: 10/20/20 1800		Received by (Print/Sign): [Signature]	
Relinquished by (Print/Sign):		Company:		Date/Time:		Company: BNO	
Relinquished by (Print/Sign):		Company:		Date/Time:		Date/Time: 10-20-20 1030	
Relinquished by (Print/Sign):		Company:		Date/Time:		Date/Time:	
Comments:							

CD

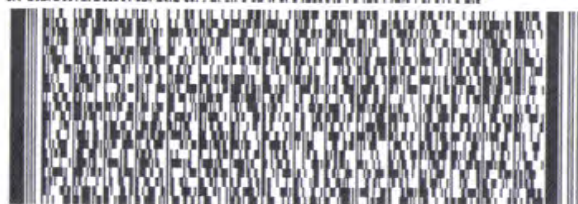
ORIGIN ID:BCBA (703) 376-5000
CAITLIN DRONFIELD
CAITLIN DRONFIELD
2411 DULLES CORNER PARK
SUITE 500
HERNDON, VA 20171
UNITED STATES US

SHIP DATE: 15OCT20
ACTWGT: 50.00 LB
CAD: 103931050/INET4280
DIMS: 16x24x18 IN
BILL THIRD PARTY

TO **ATTN: SAMPLE RECEIVING**
BATTELLE
141 LONGWATER DRIVE
SUITE 202
NORWELL MA 02061

566J2/A27EB766

(781) 681-5565 REF: 708207/CH.FIFS
INV. DEPT.
PO.



FRI - 16 OCT 10:30A
PRIORITY OVERNIGHT

TRK# 7718 1466 2461
0201

EM XPUA

02061
MA-US BOS



*Therm 2
1.30*

After printing this label:

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Data Tables



Project Client: CH2M
 Project Name: CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10
 Project No.: 100142218

Client ID CBD-AOA-MW18-1020

Battelle ID G1773-FS1
 Sample Type SA
 Collection Date 10/19/2020
 Extraction Date 11/16/2020
 Analytical Instrument Sciex 6500+ (AE) LC/MS/MS
 % Moisture NA
 Matrix GW
 Sample Size 0.240
 Size Unit-Basis L

Analyte	CAS No.	Result (ng/L)	Extract ID	DF	Analysis Date	DL	LOD	LOQ
PFHxA	307-24-4	717 TD	G1773-FS1-D(5)	12.500	11/17/2020	6.86	19.5	65.1
PFHpA	375-85-9	435 TD	G1773-FS1-D(3)	5.000	11/17/2020	1.37	5.21	26.0
PFOA	335-67-1	1130 TD	G1773-FS1-D(7)	31.250	11/17/2020	16.6	48.8	163
PFNA	375-95-1	622 TD	G1773-FS1-D(3)	5.000	11/17/2020	1.61	5.21	26.0
PFDA	335-76-2	8.34 T	G1773-FS1(0)	1.000	11/17/2020	0.148	0.521	5.21
PFUnA	2058-94-8	26.2 T	G1773-FS1(0)	1.000	11/17/2020	0.228	0.521	5.21
PFDoA	307-55-1	0.521 UT	G1773-FS1(0)	1.000	11/17/2020	0.200	0.521	5.21
PFTTrDA	72629-94-8	0.521 UT	G1773-FS1(0)	1.000	11/17/2020	0.160	0.521	5.21
PFTeDA	376-06-7	2.08 UT	G1773-FS1(0)	1.000	11/17/2020	0.764	2.08	5.21
NMeFOSAA	2355-31-9	0.369 JT	G1773-FS1(0)	1.000	11/17/2020	0.365	1.04	5.21
NEtFOSAA	2991-50-6	1.04 UT	G1773-FS1(0)	1.000	11/17/2020	0.521	1.04	5.21
PFBS	375-73-5	65.7 T	G1773-FS1(0)	1.000	11/17/2020	0.150	0.521	5.21
PFHxS	355-46-4	2600 TD	G1773-FS1-D(9)	156.250	11/17/2020	18.2	65.1	814
PFOS	1763-23-1	4250 TD	G1773-FS1-D(9)	156.250	11/17/2020	71.1	163	814
HFPO-DA	13252-13-6	0.521 UT	G1773-FS1(0)	1.000	11/17/2020	0.258	0.521	5.21
Adona	919005-14-4	1.04 UT	G1773-FS1(0)	1.000	11/17/2020	0.276	1.04	5.21
9Cl-PF3ONS	756426-58-1	0.521 UT	G1773-FS1(0)	1.000	11/17/2020	0.279	0.521	5.21
11Cl-PF3OUdS	763051-92-9	1.04 UT	G1773-FS1(0)	1.000	11/17/2020	0.241	1.04	5.21



It can be done

Project Client: CH2M

Project Name: CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10

Project No.: 100142218

Client ID LE58 IB

Battelle ID LE58 IB_11/16/2020

Sample Type IB

Collection Date NA

Extraction Date NA

Analysis Date 11/16/2020

Analytical Instrument Sciex 6500+ (AE) LC/MS/MS

% Moisture NA

Matrix Water

Sample Size 0.250

Size Unit-Basis L

Analyte	CAS No.	Result (ng/L)	DL	LOD	LOQ
PFHxA	307-24-4	1.50 U	0.527	1.50	5.00
PFHpA	375-85-9	1.00 U	0.263	1.00	5.00
PFOA	335-67-1	1.50 U	0.511	1.50	5.00
PFNA	375-95-1	1.00 U	0.309	1.00	5.00
PFDA	335-76-2	0.500 U	0.142	0.500	5.00
PFUnA	2058-94-8	0.500 U	0.219	0.500	5.00
PFDoA	307-55-1	0.500 U	0.192	0.500	5.00
PFTTrDA	72629-94-8	0.500 U	0.154	0.500	5.00
PFTeDA	376-06-7	2.00 U	0.733	2.00	5.00
NMeFOSAA	2355-31-9	1.00 U	0.350	1.00	5.00
NEtFOSAA	2991-50-6	1.00 U	0.500	1.00	5.00
PFBS	375-73-5	0.500 U	0.144	0.500	5.00
PFHxS	355-46-4	0.400 U	0.112	0.400	5.00
PFOS	1763-23-1	1.00 U	0.437	1.00	5.00
HFPO-DA	13252-13-6	0.500 U	0.248	0.500	5.00
Adona	919005-14-4	1.00 U	0.265	1.00	5.00
9Cl-PF3ONS	756426-58-1	0.500 U	0.268	0.500	5.00
11Cl-PF3OUdS	763051-92-9	1.00 U	0.231	1.00	5.00

Analyzed by: Schumitz, Denise

Printed: 11/17/2020

Isotope Dilution

L20-1481_Master_369B.xlsm



It can be done

Project Client: CH2M

Project Name: CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10

Project No.: 100142218

Client ID	LE58 IB
Battelle ID	LE58 IB_11/16/2020
Sample Type	IB
Collection Date	NA
Extraction Date	NA
Analysis Date	11/16/2020
Analytical Instrument	Sciex 6500+ (AE) LC/MS/MS
% Moisture	NA
Matrix	Water
Sample Size	0.250
Size Unit-Basis	L

Surrogate Recoveries (%)

13C5-PFHxA	104
13C4-PFHpA	114
13C8-PFOA	98
13C9-PFNA	105
13C6-PFDA	105
13C7-PFUnA	97
13C2-PFDoA	96
13C2-PFTeDA	98
d3-MeFOSAA	85
d5-EtFOSAA	92
13C3-PFBS	87
13C3-PFHxS	94
13C8-PFOS	91
13C3-HFPO-DA	103



Project Client: CH2M
 Project Name: CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10
 Project No.: 100142218

Client ID Procedural Blank

Battelle ID DB386PB-FS
 Sample Type PB
 Collection Date 11/16/2020
 Extraction Date 11/16/2020
 Analytical Instrument Sciex 6500+ (AE) LC/MS/MS
 % Moisture NA
 Matrix WATER
 Sample Size 0.260
 Size Unit-Basis L

Analyte	CAS No.	Result (ng/L)	Extract ID	DF	Analysis Date	DL	LOD	LOQ
PFHxA	307-24-4	1.44 U	DB386PB-FS(0)	1.000	11/17/2020	0.507	1.44	4.81
PFHpA	375-85-9	0.962 U	DB386PB-FS(0)	1.000	11/17/2020	0.253	0.962	4.81
PFOA	335-67-1	1.44 U	DB386PB-FS(0)	1.000	11/17/2020	0.491	1.44	4.81
PFNA	375-95-1	0.962 U	DB386PB-FS(0)	1.000	11/17/2020	0.297	0.962	4.81
PFDA	335-76-2	0.481 U	DB386PB-FS(0)	1.000	11/17/2020	0.137	0.481	4.81
PFUnA	2058-94-8	0.481 U	DB386PB-FS(0)	1.000	11/17/2020	0.211	0.481	4.81
PFDoA	307-55-1	0.481 U	DB386PB-FS(0)	1.000	11/17/2020	0.185	0.481	4.81
PFTTrDA	72629-94-8	0.481 U	DB386PB-FS(0)	1.000	11/17/2020	0.148	0.481	4.81
PFTeDA	376-06-7	1.92 U	DB386PB-FS(0)	1.000	11/17/2020	0.705	1.92	4.81
NMeFOSAA	2355-31-9	0.962 U	DB386PB-FS(0)	1.000	11/17/2020	0.337	0.962	4.81
NEtFOSAA	2991-50-6	0.962 U	DB386PB-FS(0)	1.000	11/17/2020	0.481	0.962	4.81
PFBS	375-73-5	0.481 U	DB386PB-FS(0)	1.000	11/17/2020	0.138	0.481	4.81
PFHxS	355-46-4	0.385 U	DB386PB-FS(0)	1.000	11/17/2020	0.108	0.385	4.81
PFOS	1763-23-1	0.962 U	DB386PB-FS(0)	1.000	11/17/2020	0.420	0.962	4.81
HFPO-DA	13252-13-6	0.481 U	DB386PB-FS(0)	1.000	11/17/2020	0.238	0.481	4.81
Adona	919005-14-4	0.962 U	DB386PB-FS(0)	1.000	11/17/2020	0.255	0.962	4.81
9Cl-PF3ONS	756426-58-1	0.481 U	DB386PB-FS(0)	1.000	11/17/2020	0.258	0.481	4.81
11Cl-PF3OUdS	763051-92-9	0.962 U	DB386PB-FS(0)	1.000	11/17/2020	0.222	0.962	4.81



Project Client: CH2M
 Project Name: CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10
 Project No.: 100142218

Client ID Laboratory Control Sample

Battelle ID DB387LCS-FS
 Sample Type LCS
 Collection Date 11/16/2020
 Extraction Date 11/16/2020
 Analytical Instrument Sciex 6500+ (AE) LC/MS/MS
 % Moisture NA
 Matrix WATER
 Sample Size 0.265
 Size Unit-Basis L

Analyte	CAS No.	Result (ng/L)	Extract ID	DF	Analysis Date	Target	Recovery	Qual	Control Limits	
									Lower	Upper
PFHxA	307-24-4	34.5	DB387LCS-FS(0)	1.000	11/17/2020	38.1	91		72	129
PFHpA	375-85-9	33.2	DB387LCS-FS(0)	1.000	11/17/2020	37.7	88		72	130
PFOA	335-67-1	32.7	DB387LCS-FS(0)	1.000	11/17/2020	37.7	87		71	133
PFNA	375-95-1	32.8	DB387LCS-FS(0)	1.000	11/17/2020	37.7	87		69	130
PFDA	335-76-2	34.2	DB387LCS-FS(0)	1.000	11/17/2020	37.7	91		71	129
PFUnA	2058-94-8	32.3	DB387LCS-FS(0)	1.000	11/17/2020	37.7	86		69	133
PFDoA	307-55-1	33.9	DB387LCS-FS(0)	1.000	11/17/2020	37.7	90		72	134
PFTTrDA	72629-94-8	38.9	DB387LCS-FS(0)	1.000	11/17/2020	37.7	103		65	144
PFTeDA	376-06-7	35.9	DB387LCS-FS(0)	1.000	11/17/2020	37.7	95		71	132
NMeFOSAA	2355-31-9	34.1	DB387LCS-FS(0)	1.000	11/17/2020	37.7	90		65	136
NEtFOSAA	2991-50-6	30.0	DB387LCS-FS(0)	1.000	11/17/2020	37.7	80		61	135
PFBS	375-73-5	36.9	DB387LCS-FS(0)	1.000	11/17/2020	37.7	98		72	130
PFHxS	355-46-4	36.5	DB387LCS-FS(0)	1.000	11/17/2020	38.1	96		68	131
PFOS	1763-23-1	30.9	DB387LCS-FS(0)	1.000	11/17/2020	38.1	81		65	140
HFPO-DA	13252-13-6	34.6	DB387LCS-FS(0)	1.000	11/17/2020	37.7	92		74	148
Adona	919005-14-4	31.2	DB387LCS-FS(0)	1.000	11/17/2020	37.7	83		61	143
9CI-PF3ONS	756426-58-1	28.3	DB387LCS-FS(0)	1.000	11/17/2020	37.7	75		52	158
11CI-PF3OUdS	763051-92-9	26.7	DB387LCS-FS(0)	1.000	11/17/2020	37.7	71		59	147



Project Client: CH2M
 Project Name: CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10
 Project No.: 100142218

Client ID	Laboratory Control Sample
Battelle ID	DB387LCS-FS
Sample Type	LCS
Collection Date	11/16/2020
Extraction Date	11/16/2020
Analytical Instrument	Sciex 6500+ (AE) LC/MS/MS

<i>Surrogate Recoveries (%)</i>	Recovery	Extract ID	Analysis Date
13C5-PFHxA	71	DB387LCS-FS(0)	11/17/2020
13C4-PFHpA	78	DB387LCS-FS(0)	11/17/2020
13C8-PFOA	81	DB387LCS-FS(0)	11/17/2020
13C9-PFNA	73	DB387LCS-FS(0)	11/17/2020
13C6-PFDA	95	DB387LCS-FS(0)	11/17/2020
13C7-PFUnA	96	DB387LCS-FS(0)	11/17/2020
13C2-PFDoA	97	DB387LCS-FS(0)	11/17/2020
13C2-PFTeDA	88	DB387LCS-FS(0)	11/17/2020
d3-MeFOSAA	79	DB387LCS-FS(0)	11/17/2020
d5-EtFOSAA	88	DB387LCS-FS(0)	11/17/2020
13C3-PFBS	92	DB387LCS-FS(0)	11/17/2020
13C3-PFHxS	84	DB387LCS-FS(0)	11/17/2020
13C8-PFOS	91	DB387LCS-FS(0)	11/17/2020
13C3-HFPO-DA	76	DB387LCS-FS(0)	11/17/2020



Glossary of Data Qualifiers

Flag: Application:

B	Analyte found in the sample at a concentration <10x the level found in the procedural blank
D	Dilution Run. Initial run outside the initial calibration range of the instrument
E	Estimate, result is greater than the highest concentration level in the calibration
J	Analyte detected below the Limit of Quantitation (LOQ)
MI	Significant Matrix Interference - value could not be determined.
N	Quality Control (QC) value is outside the accuracy or precision Data Quality Objective (DQO)
NA	Not Applicable
T	Holding Time (HT) exceeded
U	Analyte not detected or detected below the Detection Limit (DL) value, Limit of Detection (LOD) reported
Q	Ion ratio outside of criteria (50% difference from calibration expected ratio)

Miscellaneous Documentation

QA/QC Summary Batch 20-1481

Project:	CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10
Client Project Manager:	Michael Zamboni
Parameters:	PFAS
Laboratory:	Battelle, Norwell, MA
Matrix:	GW
Data Set:	DP-20-1360
Analytical SOP:	5-369
Method Reference:	PFAS to QSM 5.3 Table B-15

Sample Custody		
Collection Date	Receipt Date	Temp (°C)
10/19/2020	10/20/2020	1.3

Corrective Actions	None.
Sample Storage	The samples were stored refrigerated until extraction.
Related samples	Sample G1773-FS (CBD-AOA-MW18-1020) re-extracted in SDG 20-1481 to verify the 13C2-PFTeDA recovery.

METHOD SUMMARIES	
Sample Preparation	Water samples were fortified with surrogates in the original sample container from the field. The water was extracted using a weak-anion exchange (WAX) solid phase extraction (SPE) cartridge. Target analytes are eluted from the WAX SPE using methanol followed by 0.5% NH ₃ in methanol. Extracts were further refined using Envi-carb to remove co-extracted interferences. Extracts were concentrated to approximately 500 µL under nitrogen with a water bath set between 50 °C and 60 °C, reconstituted with methanol/water and fortified with internal standard. Extracts were transferred for LC-MS/MS analysis in 80:20 methanol/water (V/V).
Prep comments	pH of all samples prior to SPE extraction was verified between 6 and 8. Samples DB386PB-FS (Procedural Blank), DB387LCS-FS (Laboratory Control Sample), G1773-FS1 (CBD-AOA-MW18-1020) were fortified with extracted internal standards, shaken, and transferred to a new HDPE bottle. The samples were centrifuged at 3,500 RPM for five minutes. The supernatant was then decanted back into the original sample container prior to extraction. This procedure was performed due to the level of particulate matter present in the field samples centrifuged.
Analysis	PFAS were measured by liquid chromatography tandem mass spectrometry (LC-MS/MS) in the multiple reaction monitoring (MRM). An initial calibration consisting of representative target analytes, labelled analogs, and internal standards was analyzed prior to analysis to demonstrate the linear range of analysis. Calibration verification was performed at the beginning and end of 10 injections and at the end of each sequence. Target PFAS were quantified using the isotope dilution method. Samples are reported in ng/L concentrations to three (3) significant figures.
Analysis Comments	Samples analyzed on Sciex 6500+ (AE) LC-MS/MS. MeFOSAA, EtFOSAA, PFHxS, and PFOS in the LCS and field samples when

QA/QC Summary
Batch 20-1481

	detected, were found and reported as a combination of the linear and branched isomers.	
	ADONA, 9Cl-PF3ONS and 11Cl-PF3OUdS are quantified using 13C8-PFOA.	
Holding Times	Extraction Date(s)	Analysis Date(s)
	11/16/2020	11/16-17/2020
Procedural Blank (PB)	A PB was prepared with this analytical batch to ensure the sample extraction and analysis methods are free of contamination.	
≤ ½ the LOQ	No exceedances noted.	
Samples >10x PB	No comments.	
Laboratory Control Spike (LCS)	A LCS was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy.	
Laboratory derived control limits for recovery	No exceedances noted.	
	No comments.	
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	No MS/MSD was prepared with this analytical batch. The percent recoveries of target analytes were calculated to measure accuracy.	
Laboratory derived control limits for recovery and <30% RPD	No project specific MS/MSD included with this batch.	
	None.	
Extracted Internal Standard Analytes	Labelled analog compounds were added prior to extraction. The recoveries are calculated to measure extraction efficiency.	
50-150% of true value	No exceedances noted.	
	None.	
Internal Standard Analytes	Labelled analog compounds were added prior to analysis.	
+/- 50% of the area of the L5 calibration point.	No exceedances noted.	
	There was 1 instance of 13C4-PFOS in the undiluted extract of CBD-AOA-MW18-1020 (G1773-FS1(0)) being outside of criteria. The associated results were reported from higher level dilutions that pass IS area criteria and there was no impact on the reported data.	
Initial Calibration (ICAL)	The LC-MS/MS was calibrated with multi-level calibration curve for all compounds using linear or quadratic curve fitting.	
+/- 30% of true value, R ² ≥0.99	No exceedances noted.	
	No comments.	

QA/QC Summary
Batch 20-1481

Independent Calibration Check (ICC)	The independent check was run after each initial calibration to verify the calibration. This standard is from a different source than the ICAL.
+/- 30% of true value	No exceedances noted.
	No comments.
Continuing Calibration Verification (CCV)	Continuing calibration standards were run at the beginning and end of 10 injections and at the end of the sequence to ensure that initial calibration is still valid.
+/- 30% of true value	No exceedances noted.
	None.
Instrument Blank (IB)	Immediately following the highest standard analyzed and daily prior to sample analysis.
≤ ½ the LOQ	No exceedances noted.
	No comments.



Project Client: CH2M
 Project Name: CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10
 Project Number: 100142218
 Preparation Batch: 20-1481
 Data Set: DP-20-1360
 Test Code: Master_369B

QC Parameter:	Exceed:	Justification:
Procedural Blank	0	None
PB Measurement Quality Objective	0	None
Laboratory Control Sample	0	None
Matrix Spike / Matrix Spike Duplicate Recovery	NA	None
Matrix Spike / Matrix Spike Duplicate Precision	NA	None
Extracted Internal Standard Analytes (Surrogates)	0	None
Instrument Calibration	0	None
Instrument Blank	0	None
Independent Calibration Check	0	None
Continuing Calibration Verification	0	None



It can be done

**BATTELLE - NORWELL OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM**

Project Title: CTO-4532: NRL Chesapeake Bay Detac **Data Set Number:** DP-20-1360
Project Number: 100142218 **Prep Batch Number:** 20-1481
Entered By: Denise Schumitz **Entered On:** 11/17/2020
Test Code (Matrix Type): Master_369B(L)

Samples that were manually integrated are noted on the quant reports with the comment (TRUE).
DMS 11/17/2020

ADONA, 9CI-PF3ONS and 11CI-PF3OUdS are being quantified off 13C8-PFOA instead of 13C3-HFPO-DA.
DMS 11/17/2020

Task Leader Approval:

Supervisor Approval:

PM Approval:

Robert Lizotte, Jr.

2020.11.17 15:03:43 -05'00'

Example Calculation for PFAS

Calculation of final concentration from area:

$$\text{Concentration} = \left[\frac{PA - b}{m} \right] * C_{IS} * PIV * DF / S$$

Where:

PA = Area of target / area of internal standard
 b = y intercept from calibration curve
 CIS = concentration of internal standard (ng/L)
 m = slope of calibration
 DF = dilution factor
 S = Sample Size
 PIV = Pre-injection volume (L)

Sample ID: G1773-FS1-D(9)
 Client Sample ID: CBD-AOA-MW18-1020
 Sample Size: 0.24
 Units: L
 Dilution Factor: 156.250
 PIV (L): 0.001
 Target Analyte: PFOS
 MRM Transition: 499.0 / 80.0
 Data file: AE_11162020_5-369.wiff
 Result table: 20-1481
 Area: 5,167,390.19
 IS Name: 13C8-PFOS
 IS Area: 254,722.19
 IS Amount (ng/L): 1195
 y-intercept: 0.04063
 slope: 3.70342

$$\text{Concentration} = \frac{[(5167390.19/254722.19) - 0.04063]}{3.70342} * 1195 * 0.001 * 156.25 / 0.24$$

$$\text{ng/L} = 4,253.12$$

*Final concentration may vary based on rounding.



Project Client: CH2M

Project Name: CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10

Project No.: 100142218

Preparation Batch: 20-1481

Data Set: DP-20-1360

		DB386PB-FS (Procedural Blank)	DB387LCS-FS (Laboratory Control Sample)	G1773-FS1 (CBD-AOA-MW18-1020)
PFHxA	307-24-4	-	L	L
PFHpA	375-85-9	-	L	L
PFOA	335-67-1	-	L	L
PFNA	375-95-1	-	L	L
PFDA	335-76-2	-	L	L
PFUnA	2058-94-8	-	L	L
PFDoA	307-55-1	-	L	-
PFTTrDA	72629-94-8	-	L	-
PFTeDA	376-06-7	-	L	-
NMeFOSAA	2355-31-9	-	L/Br	L/Br
NEtFOSAA	2991-50-6	-	L/Br	-
PFBS	375-73-5	-	L	L
PFHxS	355-46-4	-	L/Br	L/Br
PFOS	1763-23-1	-	L/Br	L/Br
HFPO-DA	13252-13-6	-	L	-
Adona	919005-14-4	-	L	-
9Cl-PF3ONS	756426-58-1	-	L	-
11Cl-PF3OUdS	763051-92-9	-	L	-

"L" :Linear

"Br": branched

"L/Br": Linear/Branched

"-": Not detected

Analyzed by: Schumitz, Denise

Printed: 11/17/2020

Linear/Branched Isomer Checklist

L20-1481_Master_369B.xlsm

Project Client: CH2M
 Project Name: CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10
 Project No.: 100142218



Passing criteria = 50% to 150% of internal standard area (compared to mid-point of calibration)									
Sample Name	Sample ID	Analysis Date	13C3-PFBA		13C2-PFOA		13C2-PFDA		13C4-PFOS
LE56	L5	11/16/20 20:49	-		750,664.35		1,036,214.22		172,067.33
		Lower	-		375,332.18		518,107.11		86,033.67
		Upper	-		1,125,996.53		1,554,321.33		258,101.00

Sample Name	Sample ID	Analysis Date	13C3-PFBA	Qual	User	13C2-PFOA	Qual	User	13C2-PFDA	Qual	User	13C4-PFOS	Qual	User
LE52	L1	11/16/20 20:07	-			801,852.28			1,116,778.58			199,220.17		
LE53	L2	11/16/20 20:17	-			751,979.29			1,196,191.73			210,036.36		
LE54	L3	11/16/20 20:28	-			753,138.40			1,209,707.91			188,286.52		
LE55	L4	11/16/20 20:38	-			805,678.68			1,143,432.87			186,295.06		
LE56	L5	11/16/20 20:49	-			750,664.35			1,036,214.22			172,067.33		
LE57	L6	11/16/20 20:59	-			706,202.58			870,492.05			158,621.74		
LE58 IB	Instrument Blank	11/16/20 21:10	-			732,732.71			1,160,218.53			204,214.87		
LE59 ICC	ICC	11/16/20 21:20	-			772,840.43			1,163,677.97			207,694.43		
LE55 CCV	CCV	11/17/20 11:00	-			851,801.97			1,157,816.77			220,099.98		
DB386PB-FS(0)	Procedural Blank	11/17/20 11:21	-			1,116,106.08			1,404,380.51			244,796.33		
DB387LCS-FS(0)	Laboratory Control Sample	11/17/20 11:31	-			1,089,154.16			1,216,522.46			233,648.59		
G1773-FS1(0)	CBD-AOA-MW18-1020	11/17/20 11:42	-			480,861.00			1,105,993.29			56,883.34	N	1
G1773-FS1-D(3)	CBD-AOA-MW18-1020	11/17/20 11:52	-			893,967.88			1,179,199.36			143,323.93		
G1773-FS1-D(5)	CBD-AOA-MW18-1020	11/17/20 12:03	-			1,022,996.24			1,182,373.14			199,204.08		
G1773-FS1-D(7)	CBD-AOA-MW18-1020	11/17/20 12:13	-			1,120,073.56			1,260,669.94			225,149.79		
G1773-FS1-D(9)	CBD-AOA-MW18-1020	11/17/20 12:24	-			1,041,603.30			1,325,763.24			252,129.48		
LE54 CCV	CCV	11/17/20 12:34	-			988,193.06			1,500,024.67			224,406.09		

1. IS area outside of criteria, likely due to contribution from the native, extracted internal standards and natives reported from higher dilution. DMS 11/17/2020

Sample Name	LE56	Injection Vial	6
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:49:18 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Asymmetry Factor	Passing Range
PFBS_1	298.9 / 80.0	1.34	1.35	0.8 – 1.5
PFHxA_1	313.0 / 269.0	1.58	1.22	0.8 – 1.5

Sample Name	LE57	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:59:46 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
PFBS 1	298.9 / 80.0	1.33	62	>10
PFBS 2	298.9 / 99.0	1.33	37	>10
PFHxA 1	313.0 / 269.0	1.58	54	>10
PFHxA 2	313.0 / 119.0	1.58	32	>10
PFHpA 1	363.0 / 319.0	1.91	44	>10
PFHpA 2	363.0 / 169.0	1.91	28	>10
PFHxS 1	399.0 / 80.0	1.92	51	>10
PFHxS 2	399.0 / 99.0	1.92	52	>10
PFOA 1	413.0 / 369.0	2.27	48	>10
PFOA 2	413.0 / 169.0	2.27	31	>10
PFNA 1	463.0 / 419.0	2.64	47	>10
PFNA 2	463.0 / 219.0	2.64	52	>10
PFOS 1	499.0 / 80.0	2.63	52	>10
PFOS 2	499.0 / 99.0	2.64	59	>10
PFDA 1	513.0 / 469.0	3.00	46	>10
PFDA 2	513.0 / 219.0	2.99	39	>10
PFUnA 1	563.0 / 519.0	3.32	54	>10
PFUnA 2	563.0 / 269.0	3.32	54	>10
PFDoA 1	613.0 / 569.0	3.61	66	>10
PFDoA 2	613.0 / 319.0	3.61	69	>10
PFTTrDA 1	663.0 / 619.0	3.86	80	>10
PFTTrDA 2	663.0 / 169.0	3.86	62	>10
PFTeDA 1	713.0 / 669.0	4.09	111	>10
PFTeDA 2	713.0 / 169.0	4.09	80	>10
NMeFOSAA 1	570.0 / 419.0	3.14	60	>10
NMeFOSAA 2	570.0 / 512.0	3.14	66	>10
NEtFOSAA 1	584.0 / 419.0	3.31	53	>10
NEtFOSAA 2	584.0 / 483.0	3.31	58	>10
HFPO-DA 1	285.0 / 169.0	1.67	61	>10
HFPO-DA 2	285.0 / 118.8	1.66	32	>10
ADONA 1	377.0 / 251.0	1.94	48	>10
ADONA 2	377.0 / 85.0	1.94	36	>10
9Cl-PF3ONS 1	531.0 / 351.0	2.84	57	>10
9Cl-PF3ONS 2	531.0 / 83.0	2.84	36	>10
11Cl-pf3OUdS 1	631.0 / 451.0	3.47	54	>10
11Cl-pf3OUdS 2	631.0 / 83.0	3.47	29	>10

Sample Name	LE57	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:59:46 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
13C2-PFDoA	615.0 / 570.0	3.61	42	>10
d3-MeFOSAA	573.0 / 419.0	3.14	38	>10
d5-EtFOSAA	589.0 / 419.0	3.30	26	>10
13C5-PFHxA	318.0 / 273.0	1.57	42	>10
13C4-PFHpA	367.0 / 322.0	1.90	35	>10
13C8-PFOA	421.0 / 376.0	2.26	54	>10
13C9-PFNA	472.0 / 427.0	2.63	57	>10
13C6-PFDA	519.0 / 474.0	2.99	39	>10
13C7-PFUnA	570.0 / 525.0	3.32	39	>10
13C2-PFTeDA	715.0 / 670.0	4.09	67	>10
13C3-PFBS	302.0 / 99.0	1.32	39	>10
13C3-PFHxS	402.0 / 99.0	1.91	32	>10
13C8-PFOS	507.0 / 99.0	2.63	28	>10
13C3-HFPO-DA	287.0 / 169.0	1.66	36	>10



Precision and Bias at the LOQ for PFAS in non-potable Water

Analyte	CAS No.	Average (ng/L)	ST DEV	2 Sigma	n ¹
PFBA	375-22-4	11.00	0.9226	1.85	14
PFPeA	2706-90-3	9.81	0.7228	1.45	11
PFHxA	307-24-4	9.88	1.1365	2.27	43
PFHpA	375-85-9	9.76	0.9225	1.85	43
PFOA	335-67-1	9.93	1.3923	2.78	44
PFNA	375-95-1	9.71	1.1236	2.25	43
PFDA	335-76-2	9.51	0.9842	1.97	43
PFUnA	2058-94-8	9.55	0.9267	1.85	43
PFDoA	307-55-1	10.22	0.9055	1.81	43
PFTTrDA	72629-94-8	9.93	1.2752	2.55	43
PFTeDA	376-06-7	10.39	0.9707	1.94	43
NMeFOSAA	2355-31-9	10.02	1.5564	3.11	43
NEtFOSAA	2991-50-6	9.55	1.4218	2.84	43
PFOSA	754-91-6	10.06	0.8394	1.68	11
PFBS	375-73-5	9.63	1.1816	2.36	43
PFPeS	2706-91-4	9.88	0.9203	1.84	5
PFHxS	355-46-4	9.90	1.1346	2.27	43
PFHpS	375-92-8	10.13	1.0851	2.17	11
PFOS	1763-23-1	9.78	1.2383	2.48	44
PFNS	68259-12-1	9.45	1.0923	2.18	5
PFDS	335-77-3	9.55	1.3140	2.63	11
4:2FTS	757124-72-4	10.38	1.7353	3.47	6
6:2FTS	27619-97-2	10.08	1.1871	2.37	12
8:2FTS	39108-34-4	9.59	1.4345	2.87	12
HFPO-DA	13252-13-6	10.92	1.4420	2.88	25
Adona	919005-14-4	10.38	1.4862	2.97	25
11Cl-PF3OUdS	763051-92-9	9.80	1.5701	3.14	25
9Cl-PF3ONS	756426-58-1	9.52	1.0952	2.19	25

¹ Minimum of 20 samples required per QAM for determination of uncertainty, results including less than 20 data points are estimated.

BATTELLE DETECTION LIMITS FOR PFAS IN NON-POTABLE WATER

QSM 5.1.1 compliant with Table B-15 requirements

Analyte	CAS No.	MDL (ng/L)	LOD (ng/L)	LOQ (ng/L)
PFBA	375-22-4	0.45	1.0	5.0
PFPeA	2706-90-3	0.26	1.0	5.0
PFHxA	307-24-4	0.53	1.5	5.0
PFHpA	375-85-9	0.26	1.0	5.0
PFOA	335-67-1	0.51	1.5	5.0
PFNA	375-95-1	0.31	1.0	5.0
PFDA	335-76-2	0.14	0.5	5.0
PFUnA	2058-94-8	0.22	0.5	5.0
PFDoA	307-55-1	0.19	0.5	5.0
PFTrDA	72629-94-8	0.15	0.5	5.0
PFTeDA	376-06-7	0.73	2.0	5.0
NMeFOSAA	2355-31-9	0.35	1.0	5.0
NEtFOSAA	2991-50-6	0.50	1.0	5.0
PFOSA	754-91-6	0.46	1.0	5.0
PFBS	375-73-5	0.14	0.5	5.0
PFPeS	2706-91-4	0.26	1.0	5.0
PFHxS	355-46-4	0.11	0.4	5.0
PFHpS	375-92-8	0.85	2.0	5.0
PFOS	1763-23-1	0.44	1.0	5.0
PFNS	68259-12-1	0.36	1.0	5.0
PFDS	335-77-3	0.27	1.0	5.0
4:2FTS	747124-72-4	0.50	1.0	5.0
6:2FTS	27619-97-2	0.53	1.5	5.0
8:2FTS	39108-34-4	0.60	2.0	5.0
3:3 FTCA	356-02-5	1.32	3.0	5.0
5:3 FTCA	914637-49-3	1.59	3.0	5.0
7:3 FTCA	812-70-4	1.40	3.0	5.0
HFPO-DA	13252-13-6	0.25	0.5	5.0
Adona	919005-14-4	0.27	1.0	5.0
11CI-PF3OUdS	763051-92-9	0.23	0.5	5.0
9CI-PF3ONS	756426-58-1	0.27	1.0	5.0

Analytes on ELAP QSM 5.1.1 Scope of accreditation

MDL calculated based on 40 CFR 136 (2017)

Analytical Transitions for PFAS in non-potable water, solid, and tissue

Analyte	CAS No.	Type	Primary Transition	Secondary Transition
PFBA	375-22-4	Target	213.0 / 169.0	NA
PFPeA	2706-90-3	Target	263.0 / 219.0	NA
PFHxA	307-24-4	Target	313.0 / 269.0	313.0 / 119.0
PFHpA	375-85-9	Target	363.0 / 319.0	363.0 / 169.0
PFOA	335-67-1	Target	413.0 / 369.0	413.0 / 169.0
PFNA	375-95-1	Target	463.0 / 419.0	463.0 / 219.0
PFDA	335-76-2	Target	513.0 / 469.0	513.0 / 219.0
PFUnA	2058-94-8	Target	563.0 / 519.0	563.0 / 269.0
PFDoA	307-55-1	Target	613.0 / 569.0	613.0 / 319.0
PFTTrDA	72629-94-8	Target	663.0 / 619.0	663.0 / 169.0
PFTeDA	376-06-7	Target	713.0 / 669.0	713.0 / 169.0
NMeFOSAA	2355-31-9	Target	570.0 / 419.0	570.0 / 512.0
NEtFOSAA	2991-50-6	Target	584.0 / 419.0	584.0 / 483.0
PFOSA	754-91-6	Target	498.0 / 78.0	498.0 / 83.0
PFBS	375-73-5	Target	299.0 / 80.0	299.0 / 99.0
PFPeS	BDO-2114	Target	349.0 / 99.0	249.0 / 80.0
PFHxS	355-46-4	Target	399.0 / 80.0	399.0 / 99.0
PFHpS	375-99-6	Target	449.0 / 80.0	449.0 / 99.0
PFOS	1763-23-1	Target	499.0 / 80.0	499.0 / 99.0
PFNS	98789-57-2	Target	549.0 / 99.0	549.0 / 80.0
PFDS	2806-15-7	Target	599.0 / 80.0	599.0 / 99.0
4:2FTS	BDO-2205	Target	327.0 / 307.0	327.0 / 80.0
6:2FTS	27619-97-2	Target	427.0 / 407.0	427.0 / 81.0
8:2FTS	39108-34-4	Target	527.0 / 507.0	527.0 / 487.0
3:3 FTCA	356-02-5	Target	241.0 / 177.0	NA
5:3 FTCA	914637-49-3	Target	341.0 / 237.0	NA
7:3 FTCA	812-70-4	Target	441.0 / 337.0	NA
HFPO-DA	13252-13-6	Target	285.0 / 169.0	285.0 / 118.8
Adona	919005-14-4	Target	377.0 / 251.0	377.0 / 85.0
9CI-PF3ONS	756426-58-1	Target	531.0 / 351.0	531.0 / 83.0
11CI-PF3OUdS	763051-92-9	Target	631.0 / 451.0	631.0 / 83.0

Analyte	CAS No.	Type	Primary Transition	Secondary Transition
13C4-PFBA	NA	SIS ¹	217.0 / 172.0	NA
13C5-PFPeA	NA	SIS ¹	268.0 / 223.0	NA
13C5-PFHxA	NA	SIS ¹	318.0 / 273.0	NA
13C4-PFHpA	NA	SIS ¹	367.0 / 322.0	NA
13C8-PFOA	NA	SIS ¹	421.0 / 376.0	NA
13C9-PFNA	NA	SIS ¹	472.0 / 427.0	NA
13C6-PFDA	NA	SIS ¹	519.0 / 474.0	NA
13C7-PFUnA	NA	SIS ¹	570.0 / 525.0	NA
13C2-PFDoA	NA	SIS ¹	615.0 / 570.0	NA
13C2-PFTeDA	NA	SIS ¹	715.0 / 670.0	NA
d3-MeFOSAA	NA	SIS ¹	573.0 / 419.0	NA
d5-EtFOSAA	NA	SIS ¹	589.0 / 419.0	NA
13C8-FOSA	NA	SIS ¹	506.0 / 78.0	NA
13C3-PFBS	NA	SIS ¹	302.0 / 99.0	NA
13C3-PFHxS	NA	SIS ¹	402.0 / 99.0	NA
13C8-PFOS	NA	SIS ¹	507.0 / 99.0	NA
13C2-4:2FTS	NA	SIS ¹	329.0 / 81.0	NA
13C2-6:2FTS	NA	SIS ¹	429.0 / 81.0	NA
13C2-8:2FTS	NA	SIS ¹	529.0 / 81.0	NA
¹³ C ₃ -HFPO-DA	NA	SIS	287.0 / 169.0	NA
13C3-PFBA	NA	IS ²	216.0 / 172.0	NA
13C2-PFOA	NA	IS ²	415.0 / 370.0	NA
13C2-PFDA	NA	IS ²	515.0 / 470.0	NA
13C4-PFOS	NA	IS ²	503.0 / 99.0	NA

¹ – extracted internal standard (surrogate)

² – injection internal standard



Non-Potable Water Calibration to Sample Equivalents

ICAL (ng/L)	PIV (mL)	DF ¹	Sample Size (L)	Sample Equivalent (ng/L) ²
125	1	1	0.250	0.5
250	1	1	0.250	1.0
500	1	1	0.250	2.0
1,000	1	1	0.250	4.0
2,500	1	1	0.250	10.0
10,000	1	1	0.250	40.0
25,000	1	1	0.250	100.0

¹ - base level dilution as part of the extraction procedure

² - calculated equivalent of a sample based on the ICAL concentration



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Triple Quad 6500+

LC/MS/MS Detector System

Appendix ZEFPM003-1S

Triple Quad 6500+ Preventive Maintenance Checklist

Preventive Maintenance Date:	
Request ID:	
Company Name:	
Instrument ID:	
Instrument Model:	
Instrument Serial Number:	

PASS FAIL

Any failure will lead to an automatic Service Call being open to investigate fault.

Preventive Maintenance is performed twice every year unless specified in the Service Contract. It is designed to help maintain optimum system performance and to help diagnose any system deficiencies.

Engineer is required the assigned Request ID for this PM otherwise making this job invalid.

Comments: _____

Performed By: _____ **Date:** _____

Approved By : _____ **Date:** _____



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PRE-PM PPG PERFORMANCE EVALUATION:

- Consult the customer concerning the system overall performance.
- Check Logbook for services performed recently if available.
- Check Vacuum Pressure.

CAD Settings	Vacuum Reading (10 ⁻⁵ Torr)	Acceptance Criteria
<input type="checkbox"/> CAD 0		0.4 to 1.1 x 10 ⁻⁵ Torr
<input type="checkbox"/> CAD 12		2.4 to 4.1 x 10 ⁻⁵ Torr

- Check for Front end contamination symptoms. Run Q1 POS PPG using PPG 2e-7M for a few minutes and check for any TIC signal degradation or huge sensitivity drop where the sensitivity result can't pass specification.
 - No degradation or Sensitivity drop
- Check for Q3 contamination symptoms. Run Q3 POS PPG using PPG 2e-7M for a few minutes and check for any TIC signal degradation or huge sensitivity drop where the sensitivity result can't pass specification.
 - No degradation or Sensitivity drop

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Appendix ZEFPM003-1S

PPG Performance Test

(Make printouts showing all the peaks, intensities, peak widths, and mass shift values.)

Positive Mode: Masses for the peaks of interest are: 59.050, 175.133, 500.380, 616.464, 906.673, 1254.925, 1545.134, 1952.427.

High Mass Test

Perform High Mass Q1 POS using POS PPG 2e-7M (500:1). Scan Rate 10 Da/s. Record 10 MCA.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Specs		
Q1 500.380		Read Only		Read Only
Q1 616.464		Read Only		Read Only
Q1 906.673		Read Only		Read Only
Q1 1952.427		Read Only		Read Only

Perform High Mass Q3 POS using POS PPG 2e-7M (500:1). Scan Rate 10 Da/s. Record 10 MCA.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Specs		
Q3 500.380		Read Only		Read Only
Q3 616.464		Read Only		Read Only
Q3 906.673		Read Only		Read Only
Q3 1952.427		Read Only		Read Only

Low Mass Test

Perform Low Mass Q1 POS using POS PPG 2e-7M (500:1). Scan Rate 10 Da/s. Record 10 MCA.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Specs		
Q1 175.133		Read Only		Read Only
Q1 500.380		Read Only		Read Only
Q1 616.464		Read Only		Read Only
Q1 906.673		Read Only		Read Only

Perform Low Mass Q3 POS using POS PPG 2e-7M (500:1). Scan Rate 10 Da/s. Record 10 MCA.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Specs		
Q3 175.133		Read Only		Read Only
Q3 500.380		Read Only		Read Only
Q3 616.464		Read Only		Read Only
Q3 906.673		Read Only		Read Only

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Preventive Maintenance Procedure

- Check cooling fans in mass spec if working. Replace them soon, if defective.
- Clean bench cooling fans if applicable. Replace them soon, if defective.
- Record AC input voltage while MS is OFF: _____ (200 to 240 Vac).
Notify customer if input voltage is out of range.
- After venting, clean Interface region:
 - Curtain Plate
 - Orifice Plate atmosphere side
 - Orifice Plate vacuum side
 - Ion Drive QJet and IQ0.
- Check Q0 for signs of arcing and clean with cleaning solvent.
- Replace Roughing Pump Oil.
- Clean oil exhaust Filter.

Replace if necessary. N/A
- Adjust Multiplier Voltage if necessary.
- Clean or replace Air Filters.
- Clean the turbo pump filter screen if applicable.
- Check Orifice resistances.

Replace it soon if out of resistance specifications. N/A
- Replace Electrode if necessary in Ion Drive Turbo V source.
- Check Turbo heaters resistances and their physical conditions in Ion Drive Turbo V source.

Replace the defective heaters if necessary. N/A
- Check the APCI heater resistance. Verify Temperature reaches setpoint

Replace the heater if necessary. N/A
- Turn on the mass spec and rough pumps for pumping down.
- Verify Temperature reaches setpoint in both TIS and APCI modes if applicable.

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Appendix ZEFPM003-1S

POST- PM PPG PERFORMANCE TESTS:

- Set-up PPG standard for infusion.
- Check spray and adjust sprayer's position of the Ion Drive Turbo V source.
- Check Vacuum Pressure:

CAD Settings	Vacuum Reading (10^{-5} Torr)	Acceptance Criteria
<input type="checkbox"/> CAD 0		0.4 to 1.1×10^{-5} Torr
<input type="checkbox"/> CAD 12		2.4 to 4.1×10^{-5} Torr

- Check for Front end contamination symptoms. Run Q1 POS PPG using PPG 2e-7M for a few minutes and check for any TIC signal degradation or huge sensitivity drop where the sensitivity result can't pass specification.
 - No degradation or Sensitivity drop
- Check for Q3 contamination symptoms. Run Q3 POS PPG using PPG 2e-7M for a few minutes and check for any TIC signal degradation or huge sensitivity drop where the sensitivity result can't pass specification.
 - No degradation or Sensitivity drop

PPG Performance Test

(Mass calibrate to less than 0.1 amu. Make printouts showing all the peaks, intensities, peak widths, and mass shift values.)

Positive Mode: Masses for the peaks of interest are: 59.050, 175.133, 500.380, 616.464, 906.673, 1254.925, 1545.134, 1952.427.

Negative Mode: Masses for the peaks of interest are: 44.998, 411.259, 585.385, 933.636, 1223.845, 1572.097, 1863.306, 1979.389.

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High Mass Test

Perform High Mass Q1 POS using POS PPG 2e-7M (500:1). Scan Rate 10 Da/s. Record 10 MCA.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Specs		
Q1 500.380		$\geq 3.2 \text{ } ^e7$		0.6 to 0.8
Q1 616.464		$\geq 2.0 \text{ } ^e7$		0.6 to 0.8
Q1 906.673		$\geq 9.6 \text{ } ^e7$		0.6 to 0.8
Q1 1952.427		$\geq 2.4 \text{ } ^e6$		0.6 to 0.8

Perform High Mass Q3 POS using POS PPG 2e-7M (500:1). Scan Rate 10 Da/s. Record 10 MCA.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Specs		
Q3 500.380		$\geq 3.2 \text{ } ^e7$		0.6 to 0.8
Q3 616.464		$\geq 2.0 \text{ } ^e7$		0.6 to 0.8
Q3 906.673		$\geq 9.6 \text{ } ^e7$		0.6 to 0.8
Q3 1952.427		$\geq 2.4 \text{ } ^e6$		0.6 to 0.8

Perform MSMS POS in Product Ion scan with 907 parent and record daughter 175.1 using POS PPG 2e-7M (500:1). Scan Rate 10 Da/s. Record 10 MCA.

Mass	MSMS Intensity		MSMS Width Value	Width Specs
	Value	Spec		
MS/MS 175.1		Read Only		Read Only

Perform Q1 NEG using NEG PPG 3 x 10⁻⁵ M (10:1). Scan Rate 10 Da/s. Record 10 MCA.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Specs		
Q1 933.636		$\geq 1.8 \text{ } ^e7$		0.6 to 0.8
Q1 1863.306		$\geq 1.0 \text{ } ^e6$		0.6 to 0.8

Perform Q3 NEG using NEG PPG 3 x 10⁻⁵ M (10:1). Scan Rate 10 Da/s. Record 10 MCA.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Specs		
Q3 933.636		$\geq 1.8 \text{ } ^e7$		0.6 to 0.8
Q3 1863.306		$\geq 1.0 \text{ } ^e6$		0.6 to 0.8

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Appendix ZEFPM003-1S

Low Mass Test

Perform Low Mass Q1 POS using POS PPG 2e-7M (500:1). Scan Rate 10 Da/s. Record 10 MCA.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Specs		
Q1 175.133		$\geq 8.0^{e6}$		0.6 to 0.8
Q1 500.380		$\geq 3.68^{e7}$		0.6 to 0.8
Q1 616.464		$\geq 2.4^{e7}$		0.6 to 0.8
Q1 906.673		$\geq 1.0^{e8}$		0.6 to 0.8

Perform Low Mass Q3 POS using POS PPG 2e-7M (500:1). Scan Rate 10 Da/s. Record 10 MCA.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Specs		
Q3 175.133		$\geq 8.0^{e6}$		0.6 to 0.8
Q3 500.380		$\geq 3.68^{e7}$		0.6 to 0.8
Q3 616.464		$\geq 2.4^{e7}$		0.6 to 0.8
Q3 906.673		$\geq 1.0^{e8}$		0.6 to 0.8

Perform Q1 NEG using NEG PPG 3 x 10-5 M (10:1). Scan Rate 10 Da/s. Record 10 MCA.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Spec		
Q1 933.636		$\geq 1.8^{e7}$		0.6 to 0.8

Perform Q3 NEG using NEG PPG 3 x 10-5 M (10:1). Scan Rate 10 Da/s. Record 10 MCA.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Spec		
Q3 933.636		$\geq 1.8^{e7}$		0.6 to 0.8

Perform MSMS NEG in Product Ion scan with 933.6 parent and record daughter 45.0 using NEG PPG 3 x 10-5 M (10:1) at the scan rate of 10 Da/s for 10 MCA.

Mass	MSMS Intensity		MSMS Width Value	Width Specs
	Value	Spec		
MS/MS 45.0		Read Only		Read Only

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LC/MS/MS Detector System
Appendix ZEFPM003-1S

REVIEW:

- Attach all printouts to this checklist.
- If any parameter setting access modes were changed during the PM, ensure that they are returned to their normal access mode and that their offsets are adjusted to match optimized values from the post-PM acquisition files.
- Empty tuning cache folder, if necessary. N/A
- Fill and replaced PM Label.

END OF PREVENTIVE MAINTENANCE PROCEDURE**Document history:**

04 OCT 2016: Appendix ZEFPM003-1S: New SOP Appendix.

Battelle Standard ID	Description	Intermediate Solutions			Battelle Reagent ID (purchased solutions)
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-01
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-02
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-03
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-04
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-05
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-06
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-07
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-08
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-09
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-10
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-11
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-12
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-13
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-14
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-15
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-16
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-17
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-18
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-19
LE39	PFAS - DoD Low Level Labelled Extracted Internal Standard	LB74	-	-	200721-20
LE49	PFAS - DoD Second Source LCS/MS Solution	-	-	-	200909-01
LE49	PFAS - DoD Second Source LCS/MS Solution	-	-	-	201006-07
LE49	PFAS - DoD Second Source LCS/MS Solution	LC24	-	-	200811-01
LE49	PFAS - DoD Second Source LCS/MS Solution	LC24	-	-	200811-02
LE49	PFAS - DoD Second Source LCS/MS Solution	LC24	-	-	200811-03
LE40	PFAS - DoD Internal Standard Spiking Solution	LB75	-	-	200721-21
LE40	PFAS - DoD Internal Standard Spiking Solution	LB75	-	-	200721-22
LE40	PFAS - DoD Internal Standard Spiking Solution	LB75	-	-	200721-23
LE40	PFAS - DoD Internal Standard Spiking Solution	LB75	-	-	200721-24
LE52	PFAS - DoD Calibration L1	LB78	LB75	-	200721-21
LE52	PFAS - DoD Calibration L1	LB78	LB75	-	200721-22
LE52	PFAS - DoD Calibration L1	LB78	LB75	-	200721-23
LE52	PFAS - DoD Calibration L1	LB78	LB75	-	200721-24
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-01
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-02
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-03
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-04
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-05
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-06
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-07
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-08
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-09
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-10
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-11
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-12
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-13
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-14
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-15
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-16
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-17
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-18
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-19
LE52	PFAS - DoD Calibration L1	LD73	LB74	-	200721-20
LE52	PFAS - DoD Calibration L1	LE51	LE50	LC24	200811-01
LE52	PFAS - DoD Calibration L1	LE51	LE50	LC24	200811-02
LE52	PFAS - DoD Calibration L1	LE51	LE50	LC24	200811-03
LE52	PFAS - DoD Calibration L1	LE51	LE50	-	200914-01
LE53	PFAS - DoD Calibration L2	LB78	LB75	-	200721-21

Battelle Standard ID	Description	Intermediate Solutions			Battelle Reagent ID (purchased solutions)
LE53	PFAS - DoD Calibration L2	LB78	LB75	-	200721-22
LE53	PFAS - DoD Calibration L2	LB78	LB75	-	200721-23
LE53	PFAS - DoD Calibration L2	LB78	LB75	-	200721-24
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-01
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-02
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-03
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-04
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-05
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-06
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-07
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-08
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-09
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-10
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-11
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-12
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-13
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-14
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-15
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-16
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-17
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-18
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-19
LE53	PFAS - DoD Calibration L2	LD73	LB74	-	200721-20
LE53	PFAS - DoD Calibration L2	LE51	LE50	LC24	200811-01
LE53	PFAS - DoD Calibration L2	LE51	LE50	LC24	200811-02
LE53	PFAS - DoD Calibration L2	LE51	LE50	LC24	200811-03
LE53	PFAS - DoD Calibration L2	LE51	LE50	-	200914-01
LE54	PFAS - DoD Calibration L3	LB78	LB75	-	200721-21
LE54	PFAS - DoD Calibration L3	LB78	LB75	-	200721-22
LE54	PFAS - DoD Calibration L3	LB78	LB75	-	200721-23
LE54	PFAS - DoD Calibration L3	LB78	LB75	-	200721-24
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-01
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-02
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-03
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-04
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-05
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-06
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-07
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-08
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-09
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-10
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-11
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-12
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-13
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-14
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-15
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-16
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-17
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-18
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-19
LE54	PFAS - DoD Calibration L3	LD73	LB74	-	200721-20
LE54	PFAS - DoD Calibration L3	LE50	LC24	-	200811-01
LE54	PFAS - DoD Calibration L3	LE50	LC24	-	200811-02
LE54	PFAS - DoD Calibration L3	LE50	LC24	-	200811-03
LE54	PFAS - DoD Calibration L3	LE50	-	-	200914-01
LE55	PFAS - DoD Calibration L4	LB78	LB75	-	200721-21
LE55	PFAS - DoD Calibration L4	LB78	LB75	-	200721-22
LE55	PFAS - DoD Calibration L4	LB78	LB75	-	200721-23

Battelle Standard ID	Description	Intermediate Solutions			Battelle Reagent ID (purchased solutions)
LE55	PFAS - DoD Calibration L4	LB78	LB75	-	200721-24
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-01
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-02
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-03
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-04
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-05
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-06
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-07
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-08
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-09
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-10
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-11
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-12
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-13
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-14
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-15
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-16
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-17
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-18
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-19
LE55	PFAS - DoD Calibration L4	LD73	LB74	-	200721-20
LE55	PFAS - DoD Calibration L4	LE50	LC24	-	200811-01
LE55	PFAS - DoD Calibration L4	LE50	LC24	-	200811-02
LE55	PFAS - DoD Calibration L4	LE50	LC24	-	200811-03
LE55	PFAS - DoD Calibration L4	LE50	-	-	200914-01
LE56	PFAS - DoD Calibration L5	LB78	LB75	-	200721-21
LE56	PFAS - DoD Calibration L5	LB78	LB75	-	200721-22
LE56	PFAS - DoD Calibration L5	LB78	LB75	-	200721-23
LE56	PFAS - DoD Calibration L5	LB78	LB75	-	200721-24
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-01
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-02
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-03
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-04
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-05
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-06
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-07
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-08
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-09
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-10
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-11
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-12
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-13
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-14
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-15
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-16
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-17
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-18
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-19
LE56	PFAS - DoD Calibration L5	LD73	LB74	-	200721-20
LE56	PFAS - DoD Calibration L5	LE50	LC24	-	200811-01
LE56	PFAS - DoD Calibration L5	LE50	LC24	-	200811-02
LE56	PFAS - DoD Calibration L5	LE50	LC24	-	200811-03
LE56	PFAS - DoD Calibration L5	LE50	-	-	200914-01
LE57	PFAS - DoD Calibration L6	LB78	LB75	-	200721-21
LE57	PFAS - DoD Calibration L6	LB78	LB75	-	200721-22
LE57	PFAS - DoD Calibration L6	LB78	LB75	-	200721-23
LE57	PFAS - DoD Calibration L6	LB78	LB75	-	200721-24
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-01

Battelle Standard ID	Description	Intermediate Solutions			Battelle Reagent ID (purchased solutions)
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-02
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-03
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-04
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-05
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-06
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-07
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-08
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-09
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-10
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-11
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-12
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-13
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-14
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-15
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-16
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-17
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-18
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-19
LE57	PFAS - DoD Calibration L6	LD73	LB74	-	200721-20
LE57	PFAS - DoD Calibration L6	LE50	LC24	-	200811-01
LE57	PFAS - DoD Calibration L6	LE50	LC24	-	200811-02
LE57	PFAS - DoD Calibration L6	LE50	LC24	-	200811-03
LE57	PFAS - DoD Calibration L6	LE50	-	-	200914-01
LE59	PFAS - DoD ICC	LB78	LB75	-	200721-21
LE59	PFAS - DoD ICC	LB78	LB75	-	200721-22
LE59	PFAS - DoD ICC	LB78	LB75	-	200721-23
LE59	PFAS - DoD ICC	LB78	LB75	-	200721-24
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-01
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-02
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-03
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-04
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-05
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-06
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-07
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-08
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-09
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-10
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-11
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-12
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-13
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-14
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-15
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-16
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-17
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-18
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-19
LE59	PFAS - DoD ICC	LD73	LB74	-	200721-20
LE59	PFAS - DoD ICC	LE49	LC24	-	200811-01
LE59	PFAS - DoD ICC	LE49	LC24	-	200811-02
LE59	PFAS - DoD ICC	LE49	LC24	-	200811-03
LE59	PFAS - DoD ICC	LE49	-	-	200909-01
LE59	PFAS - DoD ICC	LE49	-	-	201006-07



It can be done

Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **LB74**

Description: PFAS - DoD SIS Stock

Stock Id: 200721-01	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	13C4-PFBA	1000	50.00	1	98.000	1	50	1.00000
Stock Id: 200721-02	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	13C5-PFPeA	1000	50.00	1	98.000	1	50	1.00000
Stock Id: 200721-03	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	13C5-PFHxA	1000	50.00	1	98.000	1	50	1.00000
Stock Id: 200721-04	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	13C4-PFHpA	1000	50.00	1	98.000	1	50	1.00000
Stock Id: 200721-05	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	13C8-PFOA	1000	48.90	1	97.800	1	50	0.97800
Stock Id: 200721-06	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	13C9-PFNA	1000	50.00	1	98.000	1	50	1.00000
Stock Id: 200721-07	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	13C6-PFDA	1000	50.00	1	98.000	1	50	1.00000
Stock Id: 200721-08	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	13C7-PFUnA	1000	50.00	1	98.000	1	50	1.00000
Stock Id: 200721-09	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	13C2-PFDoA	1000	50.00	1	98.000	1	50	1.00000

Solution Prepared By: Schultz, Stephanie Date Prepared: 7/21/2020 Expiration Date: 7/21/2021

Solution Volume : 40 mL X 5 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121

Comment: 96/4 methanol/milli-q water (RP-200722-1)

Approved By: Schumitz, Denise Date: 7/23/2020 11:25:00 AM



It can be done

Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **LB74**

Description: PFAS - DoD SIS Stock

Stock Id: 200721-10	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	13C2-PFTeDA	1000	50.00	1	98.000	1	50	1.00000
Stock Id: 200721-11	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	13C2-4:2FTS	1000	46.70	1	98.000	1	50	0.93400
Stock Id: 200721-12	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	13C2-6:2FTS	1000	47.50	1	98.000	1	50	0.95000
Stock Id: 200721-13	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	13C2-8:2FTS	1000	47.90	1	98.000	1	50	0.95800
Stock Id: 200721-14	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	13C3-PFBS	1000	46.50	1	98.000	1	50	0.93000
Stock Id: 200721-15	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	13C3-PFHxS	1000	47.30	1	98.000	1	50	0.94600
Stock Id: 200721-16	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	13C8-PFOS	1000	47.80	1	98.000	1	50	0.95600
Stock Id: 200721-17	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	d3-MeFOSAA	1000	50.00	1	98.000	1	50	1.00000
Stock Id: 200721-18	Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
	d5-EtFOSAA	1000	50.00	1	98.000	1	50	1.00000

Solution Prepared By: Schultz, Stephanie Date Prepared: 7/21/2020 Expiration Date: 7/21/2021

Solution Volume : 40 mL X 5 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121

Comment: 96/4 methanol/milli-q water (RP-200722-1)

Approved By: Schumitz, Denise Date: 7/23/2020 11:25:00 AM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LB74

Description: PFAS - DoD SIS Stock

Stock Id: 200721-19

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C8-FOSA	1000	50.00	1	98.000	1	50	1.00000

Stock Id: 200721-20

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C3-HFPO-DA	1000	50.00	1	98.000	1	50	1.00000

Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-4:2FTS	.93400
13C2-6:2FTS	.95000
13C2-8:2FTS	.95800
13C2-PFDoA	1.00000
13C2-PFTeDA	1.00000
13C3-HFPO-DA	1.00000
13C3-PFBS	.93000
13C3-PFHxS	.94600
13C4-PFBA	1.00000
13C4-PFHpA	1.00000
13C5-PFHxA	1.00000
13C5-PFPeA	1.00000
13C6-PFDA	1.00000
13C7-PFUnA	1.00000
13C8-FOSA	1.00000
13C8-PFOA	.97800
13C8-PFOS	.95600
13C9-PFNA	1.00000
d3-MeFOSAA	1.00000
d5-EtFOSAA	1.00000

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
200721-01	Pipette	B820865811
200721-02	Pipette	B820865811
200721-03	Pipette	B820865811
200721-04	Pipette	B820865811

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/21/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 5 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 96/4 methanol/milli-q water (RP-200722-1)

Approved By: Schumitz, Denise **Date:** 7/23/2020 11:25:00 AM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LB74

Description: PFAS - DoD SIS Stock

200721-05	Pipette	B820865811
200721-06	Pipette	B820865811
200721-07	Pipette	B820865811
200721-08	Pipette	B820865811
200721-09	Pipette	B820865811
200721-10	Pipette	B820865811
200721-11	Pipette	B820865811
200721-12	Pipette	B820865811
200721-13	Pipette	B820865811
200721-14	Pipette	B820865811
200721-15	Pipette	B820865811
200721-16	Pipette	B820865811
200721-17	Pipette	B820865811
200721-18	Pipette	B820865811
200721-19	Pipette	B820865811
200721-20	Pipette	B820865811

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/21/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 5 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 96/4 methanol/milli-q water (RP-200722-1)

Approved By: Schumitz, Denise **Date:** 7/23/2020 11:25:00 AM



It can be done

Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **LB75**

Description: PFAS - DoD RIS Stock

Stock Id: 200721-21							
Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	1000	50.00	1	98.000	1	50	1.00000
Stock Id: 200721-22							
Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFOA	1000	50.00	1	98.000	1	50	1.00000
Stock Id: 200721-23							
Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C3-PFBA	1000	50.00	1	98.000	1	50	1.00000
Stock Id: 200721-24							
Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C4-PFOS	1000	47.80	1	98.000	1	50	0.95600

Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-PFDA	1.00000
13C2-PFOA	1.00000
13C3-PFBA	1.00000
13C4-PFOS	.95600

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
200721-21	Pipette	B820865811
200721-22	Pipette	B820865811
200721-23	Pipette	B820865811
200721-24	Pipette	B820865811

Solution Prepared By: Schultz, Stephanie Date Prepared: 7/21/2020 Expiration Date: 7/21/2021

Solution Volume : 40 mL X 5 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0123

Comment: 96/4 methanol/milli-q water (RP-200722-1)

Approved By: Schumitz, Denise Date: 7/23/2020 11:25:00 AM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LB78

Description: PFAS - DoD Internal Standard Stock Solution

Stock Id: LB75

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	5000	1.00	---	---	1	50	0.10000
13C2-PFOA	5000	1.00	---	---	1	50	0.10000
13C3-PFBA	5000	1.00	---	---	1	50	0.10000
13C4-PFOS	5000	0.96	---	---	1	50	0.09560

Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-PFDA	.10000
13C2-PFOA	.10000
13C3-PFBA	.10000
13C4-PFOS	.09560

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB75	Pipette	B906204506

Solution Prepared By: Schultz, Stephanie **Date Prepared:** 7/21/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 5 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 96/4 methanol/milli-q water (RP-200722-1)

Approved By: Schumitz, Denise **Date:** 7/23/2020 11:25:00 AM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LC24

Description: PFAS - FTCA Stock

Stock Id: 200811-01							
Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
3-perfluoropropyl propanoic Acid	1000	50.00	1	98.000	1	10	5.00000
Stock Id: 200811-02							
Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
3-Perfluoroheptyl propanoic acid	1000	50.00	1	98.000	1	10	5.00000
Stock Id: 200811-03							
Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
3-Perfluoropentyl propanoic acid	1000	50.00	1	98.000	1	10	5.00000

Final Concentrations:

Analyte:	Conc (ug/mL):
3-Perfluoroheptyl propanoic acid	5.00000
3-Perfluoropentyl propanoic acid	5.00000
3-perfluoropropyl propanoic Acid	5.00000

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
200811-01	Pipette	B909301606
200811-02	Pipette	B909301606
200811-03	Pipette	B909301606

Solution Prepared By: Bailey, Kevin Date Prepared: 8/11/2020 Expiration Date: 8/11/2021

Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: LC Laboratory: Freezer - F0111

Comment:

Approved By: Schumitz, Denise Date: 8/12/2020 8:20:00 AM



It can be done

Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **LD73**

Description: PFAS - DoD High Level Labelled Extracted Internal Standards (SIS)

Stock Id: **LB74**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	5000	0.93	---	---	1	50	0.09340
13C2-6:2FTS	5000	0.95	---	---	1	50	0.09500
13C2-8:2FTS	5000	0.96	---	---	1	50	0.09580
13C2-PFDoA	5000	1.00	---	---	1	50	0.10000
13C2-PFTeDA	5000	1.00	---	---	1	50	0.10000
13C3-HFPO-DA	5000	1.00	---	---	1	50	0.10000
13C3-PFBS	5000	0.93	---	---	1	50	0.09300
13C3-PFHxS	5000	0.95	---	---	1	50	0.09460
13C4-PFBA	5000	1.00	---	---	1	50	0.10000
13C4-PFHpA	5000	1.00	---	---	1	50	0.10000
13C5-PFHxA	5000	1.00	---	---	1	50	0.10000
13C5-PFPeA	5000	1.00	---	---	1	50	0.10000
13C6-PFDA	5000	1.00	---	---	1	50	0.10000
13C7-PFUnA	5000	1.00	---	---	1	50	0.10000
13C8-FOSA	5000	1.00	---	---	1	50	0.10000
13C8-PFOA	5000	0.98	---	---	1	50	0.09780
13C8-PFOS	5000	0.96	---	---	1	50	0.09560
13C9-PFNA	5000	1.00	---	---	1	50	0.10000
d3-MeFOSAA	5000	1.00	---	---	1	50	0.10000
d5-EtFOSAA	5000	1.00	---	---	1	50	0.10000

Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-4:2FTS	.09340
13C2-6:2FTS	.09500
13C2-8:2FTS	.09580
13C2-PFDoA	.10000
13C2-PFTeDA	.10000
13C3-HFPO-DA	.10000
13C3-PFBS	.09300
13C3-PFHxS	.09460
13C4-PFBA	.10000
13C4-PFHpA	.10000
13C5-PFHxA	.10000
13C5-PFPeA	.10000
13C6-PFDA	.10000

Solution Prepared By: Bailey, Kevin Date Prepared: 10/22/2020 Expiration Date: 7/21/2021

Solution Volume : 40 mL X 5 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121

Comment: 96/4 methanol/milli-q (RP-201022-2)

Approved By: Schumitz, Denise Date: 10/23/2020 9:27:00 AM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LD73

Description: PFAS - DoD High Level Labelled Extracted Internal Standards (SIS)

13C7-PFUnA	.10000
13C8-FOSA	.10000
13C8-PFOA	.09780
13C8-PFOS	.09560
13C9-PFNA	.10000
d3-MeFOSAA	.10000
d5-EtFOSAA	.10000

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB74	Pipette	B820865811

Solution Prepared By: Bailey, Kevin **Date Prepared:** 10/22/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 5 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 96/4 methanol/milli-q (RP-201022-2)

Approved By: Schumitz, Denise **Date:** 10/23/2020 9:27:00 AM



It can be done

Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **LE39**

Description: PFAS - DoD Low Level Labelled Extracted Internal Standard

Stock Id: **LB74**

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	2000	0.93	---	---	1	200	0.00934
13C2-6:2FTS	2000	0.95	---	---	1	200	0.00950
13C2-8:2FTS	2000	0.96	---	---	1	200	0.00958
13C2-PFDoA	2000	1.00	---	---	1	200	0.01000
13C2-PFTeDA	2000	1.00	---	---	1	200	0.01000
13C3-HFPO-DA	2000	1.00	---	---	1	200	0.01000
13C3-PFBS	2000	0.93	---	---	1	200	0.00930
13C3-PFHxS	2000	0.95	---	---	1	200	0.00946
13C4-PFBA	2000	1.00	---	---	1	200	0.01000
13C4-PFHpA	2000	1.00	---	---	1	200	0.01000
13C5-PFHxA	2000	1.00	---	---	1	200	0.01000
13C5-PFPeA	2000	1.00	---	---	1	200	0.01000
13C6-PFDA	2000	1.00	---	---	1	200	0.01000
13C7-PFUnA	2000	1.00	---	---	1	200	0.01000
13C8-FOSA	2000	1.00	---	---	1	200	0.01000
13C8-PFOA	2000	0.98	---	---	1	200	0.00978
13C8-PFOS	2000	0.96	---	---	1	200	0.00956
13C9-PFNA	2000	1.00	---	---	1	200	0.01000
d3-MeFOSAA	2000	1.00	---	---	1	200	0.01000
d5-EtFOSAA	2000	1.00	---	---	1	200	0.01000

Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-4:2FTS	.00934
13C2-6:2FTS	.00950
13C2-8:2FTS	.00958
13C2-PFDoA	.01000
13C2-PFTeDA	.01000
13C3-HFPO-DA	.01000
13C3-PFBS	.00930
13C3-PFHxS	.00946
13C4-PFBA	.01000
13C4-PFHpA	.01000
13C5-PFHxA	.01000
13C5-PFPeA	.01000
13C6-PFDA	.01000

Solution Prepared By: Bailey, Kevin Date Prepared: 11/4/2020 Expiration Date: 7/21/2021

Solution Volume : 40 mL X 8 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121

Comment: 96/4 methanol/milli-q water (RP-201104-11)

Approved By: Schumitz, Denise Date: 11/5/2020 10:09:00 AM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE39

Description: PFAS - DoD Low Level Labelled Extracted Internal Standard

13C7-PFUnA	.01000
13C8-FOSA	.01000
13C8-PFOA	.00978
13C8-PFOS	.00956
13C9-PFNA	.01000
d3-MeFOSAA	.01000
d5-EtFOSAA	.01000

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB74	Pipette	B820865811

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/4/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 8 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 96/4 methanol/milli-q water (RP-201104-11)

Approved By: Schumitz, Denise **Date:** 11/5/2020 10:09:00 AM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE40

Description: PFAS - DoD Internal Standard Spiking Solution

Stock Id: LB75

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	2000	1.00	---	---	1	200	0.01000
13C2-PFOA	2000	1.00	---	---	1	200	0.01000
13C3-PFBA	2000	1.00	---	---	1	200	0.01000
13C4-PFOS	2000	0.96	---	---	1	200	0.00956

Final Concentrations:

Analyte:	Conc (ug/mL):
13C2-PFDA	.01000
13C2-PFOA	.01000
13C3-PFBA	.01000
13C4-PFOS	.00956

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB75	Pipette	B820865811

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/4/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 8 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 96/4 methanol/milli-q (RP-201104-12)

Approved By: Schumitz, Denise **Date:** 11/5/2020 10:54:00 AM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE49

Description: PFAS - DoD Second Source LCS/MS Solution

Stock Id: 200909-01

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic aci	0	1.00	1	100.000	1	10	0.00000
1H,1H,2H,2H-Perfluorodecane sulfonate	0	1.01	1	100.000	1	10	0.00000
1H,1H,2H,2H-Perfluorohexane sulfonate	0	1.00	1	100.000	1	10	0.00000
1H,1H,2H,2H-Perfluorooctane sulfonate	0	1.00	1	100.000	1	10	0.00000
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic aci	0	1.00	1	100.000	1	10	0.00000
Adona	0	1.00	1	100.000	1	10	0.00000
Hexafluoropropylene oxide dimer acid	0	1.00	1	100.000	1	10	0.00000
N-ethylperfluoro-octanesulfonamidoacetic acid	0	1.00	1	100.000	1	10	0.00000
N-methylperfluoro-1-octanesulfonamidoacetic acid	0	1.00	1	100.000	1	10	0.00000
Perfluoro-1-butanefluoride	0	1.00	1	100.000	1	10	0.00000
Perfluoro-1-decanesulfonate	0	1.01	1	100.000	1	10	0.00000
Perfluoro-1-heptanesulfonate	0	1.00	1	100.000	1	10	0.00000
Perfluoro-1-hexanesulfonate	0	1.01	1	100.000	1	10	0.00000
Perfluoro-1-nonanesulfonate	0	1.01	1	100.000	1	10	0.00000
Perfluoro-1-octanesulfonamide	0	1.00	1	100.000	1	10	0.00000
Perfluoro-1-octanesulfonate	0	1.01	1	100.000	1	10	0.00000
perfluoro-1-pentanesulfonate	0	1.00	1	100.000	1	10	0.00000
Perfluoro-n-butanoic Acid	0	1.00	1	100.000	1	10	0.00000
Perfluoro-n-decanoic Acid	0	1.00	1	100.000	1	10	0.00000
Perfluoro-n-dodecanoic acid	0	1.00	1	100.000	1	10	0.00000
Perfluoro-n-heptanoic Acid	0	1.00	1	100.000	1	10	0.00000
Perfluoro-n-hexanoic acid	0	1.01	1	100.000	1	10	0.00000
Perfluoro-n-octanoic Acid	0	1.00	1	100.000	1	10	0.00000
Perfluorononanoic Acid	0	1.00	1	100.000	1	10	0.00000
Perfluoro-n-pentanoic acid	0	1.01	1	100.000	1	10	0.00000
Perfluoro-n-tetradecanoic acid	0	1.00	1	100.000	1	10	0.00000
Perfluoro-n-tridecanoic acid	0	1.00	1	100.000	1	10	0.00000
Perfluoro-n-undecanoic acid	0	1.00	1	100.000	1	10	0.00000

Stock Id: 201006-07

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic aci	1000	1.00	1	100.000	1	10	0.10000
1H,1H,2H,2H-Perfluorodecane sulfonate	1000	1.01	1	100.000	1	10	0.10100
1H,1H,2H,2H-Perfluorohexane sulfonate	1000	1.00	1	100.000	1	10	0.10000
1H,1H,2H,2H-Perfluorooctane sulfonate	1000	1.00	1	100.000	1	10	0.10000

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/10/2020 **Expiration Date:** 8/11/2021

Solution Volume : 40 mL X 1 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201110-)

Approved By: Schumitz, Denise **Date:** 11/11/2020 1:05:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE49

Description: PFAS - DoD Second Source LCS/MS Solution

9-chlorohexadecafluoro-3-oxanonane-1-sulfonic aci	1000	1.00	1	100.000	1	10	0.10000
Adona	1000	1.00	1	100.000	1	10	0.10000
Hexafluoropropylene oxide dimer acid	1000	1.00	1	100.000	1	10	0.10000
N-ethylperfluoro-octanesulfonamidoacetic acid	1000	1.00	1	100.000	1	10	0.10000
N-methylperfluoro-1-octanesulfonamidoacetic acid	1000	1.00	1	100.000	1	10	0.10000
Perfluoro-1-butanedisulfonate	1000	1.00	1	100.000	1	10	0.10000
Perfluoro-1-decanedisulfonate	1000	1.01	1	100.000	1	10	0.10100
Perfluoro-1-heptanedisulfonate	1000	1.00	1	100.000	1	10	0.10000
Perfluoro-1-hexanedisulfonate	1000	1.01	1	100.000	1	10	0.10100
Perfluoro-1-nonanedisulfonate	1000	1.01	1	100.000	1	10	0.10100
Perfluoro-1-octanesulfonamide	1000	1.00	1	100.000	1	10	0.10000
Perfluoro-1-octanesulfonate	1000	1.01	1	100.000	1	10	0.10100
perfluoro-1-pentanedisulfonate	1000	1.00	1	100.000	1	10	0.10000
Perfluoro-n-butanoic Acid	1000	1.00	1	100.000	1	10	0.10000
Perfluoro-n-decanoic Acid	1000	1.00	1	100.000	1	10	0.10000
Perfluoro-n-dodecanoic acid	1000	1.00	1	100.000	1	10	0.10000
Perfluoro-n-heptanoic Acid	1000	1.00	1	100.000	1	10	0.10000
Perfluoro-n-hexanoic acid	1000	1.01	1	100.000	1	10	0.10100
Perfluoro-n-octanoic Acid	1000	1.00	1	100.000	1	10	0.10000
Perfluorononanoic Acid	1000	1.00	1	100.000	1	10	0.10000
Perfluoro-n-pentanoic acid	1000	1.01	1	100.000	1	10	0.10100
Perfluoro-n-tetradecanoic acid	1000	1.00	1	100.000	1	10	0.10000
Perfluoro-n-tridecanoic acid	1000	1.00	1	100.000	1	10	0.10000
Perfluoro-n-undecanoic acid	1000	1.00	1	100.000	1	10	0.10000

Stock Id: LC24

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
3-Perfluoroheptyl propanoic acid	200	5.00	---	---	1	10	0.10000
3-Perfluoropentyl propanoic acid	200	5.00	---	---	1	10	0.10000
3-perfluoropropyl propanoic Acid	200	5.00	---	---	1	10	0.10000

Final Concentrations:

Analyte:	Conc (ug/mL):
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	.10000
1H,1H,2H,2H-Perfluorodecane sulfonate	.10100
1H,1H,2H,2H-Perfluorohexane sulfonate	.10000
1H,1H,2H,2H-Perfluorooctane sulfonate	.10000
3-Perfluoroheptyl propanoic acid	.10000
3-Perfluoropentyl propanoic acid	.10000

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/10/2020 **Expiration Date:** 8/11/2021

Solution Volume : 40 mL X 1 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201110-)

Approved By: Schumitz, Denise **Date:** 11/11/2020 1:05:00 PM



It can be done

Standard Solution Concentrations Approved:

Standard Laboratory ID Number: LE49

Description: PFAS - DoD Second Source LCS/MS Solution

3-perfluoropropyl propanoic Acid	.10000
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	.10000
Adona	.10000
Hexafluoropropylene oxide dimer acid	.10000
N-ethylperfluoro-octanesulfonamidoacetic acid	.10000
N-methylperfluoro-1-octanesulfonamidoacetic acid	.10000
Perfluoro-1-butanedisulfonate	.10000
Perfluoro-1-decanedisulfonate	.10100
Perfluoro-1-heptanedisulfonate	.10000
Perfluoro-1-hexanedisulfonate	.10100
Perfluoro-1-nonanedisulfonate	.10100
Perfluoro-1-octanesulfonamide	.10000
Perfluoro-1-octanesulfonate	.10100
perfluoro-1-pentanesulfonate	.10000
Perfluoro-n-butanedioic Acid	.10000
Perfluoro-n-decanedioic Acid	.10000
Perfluoro-n-dodecanedioic acid	.10000
Perfluoro-n-heptanedioic Acid	.10000
Perfluoro-n-hexanedioic acid	.10100
Perfluoro-n-octanedioic Acid	.10000
Perfluorononanedioic Acid	.10000
Perfluoro-n-pentanedioic acid	.10100
Perfluoro-n-tetradecanedioic acid	.10000
Perfluoro-n-tridecanedioic acid	.10000
Perfluoro-n-undecanedioic acid	.10000

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
200909-01	Pipette	B820865811
201006-07	Pipette	B820865811
LC24	Pipette	B814657482

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/10/2020 **Expiration Date:** 8/11/2021

Solution Volume : 40 mL X 1 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201110-)

Approved By: Schumitz, Denise **Date:** 11/11/2020 1:05:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE50

Description: PFAS - DoD High ICAL Stock

Stock Id: 200914-01

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic aci	2000	1.00	1	100.000	1	20	0.10000
1H,1H,2H,2H-Perfluorodecane sulfonate	2000	1.01	1	100.000	1	20	0.10100
1H,1H,2H,2H-Perfluorohexane sulfonate	2000	1.00	1	100.000	1	20	0.10000
1H,1H,2H,2H-Perfluorooctane sulfonate	2000	1.00	1	100.000	1	20	0.10000
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic aci	2000	1.00	1	100.000	1	20	0.10000
Adona	2000	1.00	1	100.000	1	20	0.10000
Hexafluoropropylene oxide dimer acid	2000	1.00	1	100.000	1	20	0.10000
N-ethylperfluoro-octanesulfonamidoacetic acid	2000	1.00	1	100.000	1	20	0.10000
N-methylperfluoro-1-octanesulfonamidoacetic acid	2000	1.00	1	100.000	1	20	0.10000
Perfluoro-1-butanefluoride	2000	1.00	1	100.000	1	20	0.10000
Perfluoro-1-decanesulfonate	2000	1.01	1	100.000	1	20	0.10100
Perfluoro-1-heptanesulfonate	2000	1.00	1	100.000	1	20	0.10000
Perfluoro-1-hexanesulfonate	2000	1.01	1	100.000	1	20	0.10100
Perfluoro-1-nonanesulfonate	2000	1.01	1	100.000	1	20	0.10100
Perfluoro-1-octanesulfonamide	2000	1.00	1	100.000	1	20	0.10000
Perfluoro-1-octanesulfonate	2000	1.01	1	100.000	1	20	0.10100
perfluoro-1-pentanesulfonate	2000	1.00	1	100.000	1	20	0.10000
Perfluoro-n-butanoic Acid	2000	1.00	1	100.000	1	20	0.10000
Perfluoro-n-decanoic Acid	2000	1.00	1	100.000	1	20	0.10000
Perfluoro-n-dodecanoic acid	2000	1.00	1	100.000	1	20	0.10000
Perfluoro-n-heptanoic Acid	2000	1.00	1	100.000	1	20	0.10000
Perfluoro-n-hexanoic acid	2000	1.01	1	100.000	1	20	0.10100
Perfluoro-n-octanoic Acid	2000	1.00	1	100.000	1	20	0.10000
Perfluorononanoic Acid	2000	1.00	1	100.000	1	20	0.10000
Perfluoro-n-pentanoic acid	2000	1.01	1	100.000	1	20	0.10100
Perfluoro-n-tetradecanoic acid	2000	1.00	1	100.000	1	20	0.10000
Perfluoro-n-tridecanoic acid	2000	1.00	1	100.000	1	20	0.10000
Perfluoro-n-undecanoic acid	2000	1.00	1	100.000	1	20	0.10000

Stock Id: LC24

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
3-Perfluoroheptyl propanoic acid	400	5.00	---	---	1	20	0.10000
3-Perfluoropentyl propanoic acid	400	5.00	---	---	1	20	0.10000
3-perfluoropropyl propanoic Acid	400	5.00	---	---	1	20	0.10000

Final Concentrations:

Solution Prepared By: Bailey, Kevin	Date Prepared: 11/12/2020	Expiration Date: 8/11/2021
Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121		

Comment: 96/4 methanol/milli-q (RP-201112-3)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:15:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE50

Description: PFAS - DoD High ICAL Stock

Analyte:	Conc (ug/mL):
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	.10000
1H,1H,2H,2H-Perfluorodecane sulfonate	.10100
1H,1H,2H,2H-Perfluorohexane sulfonate	.10000
1H,1H,2H,2H-Perfluorooctane sulfonate	.10000
3-Perfluoroheptyl propanoic acid	.10000
3-Perfluoropentyl propanoic acid	.10000
3-perfluoropropyl propanoic Acid	.10000
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	.10000
Adona	.10000
Hexafluoropropylene oxide dimer acid	.10000
N-ethylperfluoro-octanesulfonamidoacetic acid	.10000
N-methylperfluoro-1-octanesulfonamidoacetic acid	.10000
Perfluoro-1-butanedisulfonate	.10000
Perfluoro-1-decanedisulfonate	.10100
Perfluoro-1-heptanedisulfonate	.10000
Perfluoro-1-hexanedisulfonate	.10100
Perfluoro-1-nonanedisulfonate	.10100
Perfluoro-1-octanesulfonamide	.10000
Perfluoro-1-octanesulfonate	.10100
perfluoro-1-pentanesulfonate	.10000
Perfluoro-n-butanoic Acid	.10000
Perfluoro-n-decanoic Acid	.10000
Perfluoro-n-dodecanoic acid	.10000
Perfluoro-n-heptanoic Acid	.10000
Perfluoro-n-hexanoic acid	.10100
Perfluoro-n-octanoic Acid	.10000
Perfluorononanoic Acid	.10000
Perfluoro-n-pentanoic acid	.10100
Perfluoro-n-tetradecanoic acid	.10000
Perfluoro-n-tridecanoic acid	.10000
Perfluoro-n-undecanoic acid	.10000

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
200914-01	Pipette	B820865811
LC24	Pipette	B820865811

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/12/2020 **Expiration Date:** 8/11/2021

Solution Volume : 40 mL X 1 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 96/4 methanol/milli-q (RP-201112-3)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:15:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE51

Description: PFAS - DoD Low ICAL Stock

Stock Id: LE50

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic aci	500	0.10	---	---	1	5	0.01000
1H,1H,2H,2H-Perfluorodecane sulfonate	500	0.10	---	---	1	5	0.01010
1H,1H,2H,2H-Perfluorohexane sulfonate	500	0.10	---	---	1	5	0.01000
1H,1H,2H,2H-Perfluorooctane sulfonate	500	0.10	---	---	1	5	0.01000
3-Perfluoroheptyl propanoic acid	500	0.10	---	---	1	5	0.01000
3-Perfluoropentyl propanoic acid	500	0.10	---	---	1	5	0.01000
3-perfluoropropyl propanoic Acid	500	0.10	---	---	1	5	0.01000
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic aci	500	0.10	---	---	1	5	0.01000
Adona	500	0.10	---	---	1	5	0.01000
Hexafluoropropylene oxide dimer acid	500	0.10	---	---	1	5	0.01000
N-ethylperfluoro-octanesulfonamidoacetic acid	500	0.10	---	---	1	5	0.01000
N-methylperfluoro-1-octanesulfonamidoacetic acid	500	0.10	---	---	1	5	0.01000
Perfluoro-1-butanefluoride	500	0.10	---	---	1	5	0.01000
Perfluoro-1-decanesulfonate	500	0.10	---	---	1	5	0.01010
Perfluoro-1-heptanesulfonate	500	0.10	---	---	1	5	0.01000
Perfluoro-1-hexanesulfonate	500	0.10	---	---	1	5	0.01010
Perfluoro-1-nonanesulfonate	500	0.10	---	---	1	5	0.01010
Perfluoro-1-octanesulfonamide	500	0.10	---	---	1	5	0.01000
Perfluoro-1-octanesulfonate	500	0.10	---	---	1	5	0.01010
perfluoro-1-pentanesulfonate	500	0.10	---	---	1	5	0.01000
Perfluoro-n-butanoic Acid	500	0.10	---	---	1	5	0.01000
Perfluoro-n-decanoic Acid	500	0.10	---	---	1	5	0.01000
Perfluoro-n-dodecanoic acid	500	0.10	---	---	1	5	0.01000
Perfluoro-n-heptanoic Acid	500	0.10	---	---	1	5	0.01000
Perfluoro-n-hexanoic acid	500	0.10	---	---	1	5	0.01010
Perfluoro-n-octanoic Acid	500	0.10	---	---	1	5	0.01000
Perfluorononanoic Acid	500	0.10	---	---	1	5	0.01000
Perfluoro-n-pentanoic acid	500	0.10	---	---	1	5	0.01010
Perfluoro-n-tetradecanoic acid	500	0.10	---	---	1	5	0.01000
Perfluoro-n-tridecanoic acid	500	0.10	---	---	1	5	0.01000
Perfluoro-n-undecanoic acid	500	0.10	---	---	1	5	0.01000

Final Concentrations:

Analyte:	Conc (ug/mL):
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	.01000
1H,1H,2H,2H-Perfluorodecane sulfonate	.01010

Solution Prepared By: Bailey, Kevin Date Prepared: 11/12/2020 Expiration Date: 8/11/2021

Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121

Comment: 96/4 methanol/milli-q (RP-201112-3)

Approved By: Schumitz, Denise Date: 11/13/2020 1:15:00 PM



It can be done

Standard Solution Concentrations Approved:

Standard Laboratory ID Number: LE51

Description: PFAS - DoD Low ICAL Stock

1H,1H,2H,2H-Perfluorohexane sulfonate	.01000
1H,1H,2H,2H-Perfluorooctane sulfonate	.01000
3-Perfluoroheptyl propanoic acid	.01000
3-Perfluoropentyl propanoic acid	.01000
3-perfluoropropyl propanoic Acid	.01000
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	.01000
Adona	.01000
Hexafluoropropylene oxide dimer acid	.01000
N-ethylperfluoro-octanesulfonamidoacetic acid	.01000
N-methylperfluoro-1-octanesulfonamidoacetic acid	.01000
Perfluoro-1-butanedisulfonate	.01000
Perfluoro-1-decanedisulfonate	.01010
Perfluoro-1-heptanedisulfonate	.01000
Perfluoro-1-hexanedisulfonate	.01010
Perfluoro-1-nonanedisulfonate	.01010
Perfluoro-1-octanesulfonamide	.01000
Perfluoro-1-octanedisulfonate	.01010
perfluoro-1-pentanedisulfonate	.01000
Perfluoro-n-butanedioic Acid	.01000
Perfluoro-n-decanedioic Acid	.01000
Perfluoro-n-dodecanedioic acid	.01000
Perfluoro-n-heptanedioic Acid	.01000
Perfluoro-n-hexanedioic acid	.01010
Perfluoro-n-octanedioic Acid	.01000
Perfluorononanedioic Acid	.01000
Perfluoro-n-pentanedioic acid	.01010
Perfluoro-n-tetradecanedioic acid	.01000
Perfluoro-n-tridecanedioic acid	.01000
Perfluoro-n-undecanedioic acid	.01000

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LE50	Pipette	B820865811

Solution Prepared By: Bailey, Kevin	Date Prepared: 11/12/2020	Expiration Date: 8/11/2021
Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121		

Comment: 96/4 methanol/milli-q (RP-201112-3)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:15:00 PM



It can be done

Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **LE52**

Description: PFAS - DoD Calibration L1

Stock Id: LB78

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	125	0.10	---	---	1	10	0.00125
13C2-PFOA	125	0.10	---	---	1	10	0.00125
13C3-PFBA	125	0.10	---	---	1	10	0.00125
13C4-PFOS	125	0.10	---	---	1	10	0.00119

Stock Id: LD73

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	125	0.09	---	---	1	10	0.00117
13C2-6:2FTS	125	0.10	---	---	1	10	0.00119
13C2-8:2FTS	125	0.10	---	---	1	10	0.00120
13C2-PFDoA	125	0.10	---	---	1	10	0.00125
13C2-PFTeDA	125	0.10	---	---	1	10	0.00125
13C3-HFPO-DA	125	0.10	---	---	1	10	0.00125
13C3-PFBS	125	0.09	---	---	1	10	0.00116
13C3-PFHxS	125	0.09	---	---	1	10	0.00118
13C4-PFBA	125	0.10	---	---	1	10	0.00125
13C4-PFHpA	125	0.10	---	---	1	10	0.00125
13C5-PFHxA	125	0.10	---	---	1	10	0.00125
13C5-PFPeA	125	0.10	---	---	1	10	0.00125
13C6-PFDA	125	0.10	---	---	1	10	0.00125
13C7-PFUnA	125	0.10	---	---	1	10	0.00125
13C8-FOSA	125	0.10	---	---	1	10	0.00125
13C8-PFOA	125	0.10	---	---	1	10	0.00122
13C8-PFOS	125	0.10	---	---	1	10	0.00119
13C9-PFNA	125	0.10	---	---	1	10	0.00125
d3-MeFOSAA	125	0.10	---	---	1	10	0.00125
d5-EtFOSAA	125	0.10	---	---	1	10	0.00125

Stock Id: LE51

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic aci	250	0.01	---	---	1	10	0.00025
1H,1H,2H,2H-Perfluorodecane sulfonate	250	0.01	---	---	1	10	0.00025
1H,1H,2H,2H-Perfluorohexane sulfonate	250	0.01	---	---	1	10	0.00025
1H,1H,2H,2H-Perfluorooctane sulfonate	250	0.01	---	---	1	10	0.00025
3-Perfluoroheptyl propanoic acid	250	0.01	---	---	1	10	0.00025

Solution Prepared By: Bailey, Kevin Date Prepared: 11/12/2020 Expiration Date: 7/21/2021

Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise Date: 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: **LE52**

Description: PFAS - DoD Calibration L1

3-Perfluoropentyl propanoic acid	250	0.01	---	---	1	10	0.00025
3-perfluoropropyl propanoic Acid	250	0.01	---	---	1	10	0.00025
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic aci	250	0.01	---	---	1	10	0.00025
Adona	250	0.01	---	---	1	10	0.00025
Hexafluoropropylene oxide dimer acid	250	0.01	---	---	1	10	0.00025
N-ethylperfluoro-octanesulfonamidoacetic acid	250	0.01	---	---	1	10	0.00025
N-methylperfluoro-1-octanesulfonamidoacetic acid	250	0.01	---	---	1	10	0.00025
Perfluoro-1-butanedisulfonate	250	0.01	---	---	1	10	0.00025
Perfluoro-1-decanedisulfonate	250	0.01	---	---	1	10	0.00025
Perfluoro-1-heptanedisulfonate	250	0.01	---	---	1	10	0.00025
Perfluoro-1-hexanedisulfonate	250	0.01	---	---	1	10	0.00025
Perfluoro-1-nonanedisulfonate	250	0.01	---	---	1	10	0.00025
Perfluoro-1-octanesulfonamide	250	0.01	---	---	1	10	0.00025
Perfluoro-1-octanesulfonate	250	0.01	---	---	1	10	0.00025
perfluoro-1-pentanesulfonate	250	0.01	---	---	1	10	0.00025
Perfluoro-n-butanoic Acid	250	0.01	---	---	1	10	0.00025
Perfluoro-n-decanoic Acid	250	0.01	---	---	1	10	0.00025
Perfluoro-n-dodecanoic acid	250	0.01	---	---	1	10	0.00025
Perfluoro-n-heptanoic Acid	250	0.01	---	---	1	10	0.00025
Perfluoro-n-hexanoic acid	250	0.01	---	---	1	10	0.00025
Perfluoro-n-octanoic Acid	250	0.01	---	---	1	10	0.00025
Perfluorononanoic Acid	250	0.01	---	---	1	10	0.00025
Perfluoro-n-pentanoic acid	250	0.01	---	---	1	10	0.00025
Perfluoro-n-tetradecanoic acid	250	0.01	---	---	1	10	0.00025
Perfluoro-n-tridecanoic acid	250	0.01	---	---	1	10	0.00025
Perfluoro-n-undecanoic acid	250	0.01	---	---	1	10	0.00025

Final Concentrations:

Analyte:	Conc (ug/mL):
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	.00025
13C2-4:2FTS	.00117
13C2-6:2FTS	.00119
13C2-8:2FTS	.00120
13C2-PFDA	.00125
13C2-PFDoA	.00125
13C2-PFOA	.00125
13C2-PFTeDA	.00125
13C3-HFPO-DA	.00125
13C3-PFBA	.00125

Solution Prepared By: Bailey, Kevin	Date Prepared: 11/12/2020	Expiration Date: 7/21/2021
Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121		

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations Approved:

Standard Laboratory ID Number: LE52

Description: PFAS - DoD Calibration L1

13C3-PFBS	.00116
13C3-PFHxS	.00118
13C4-PFBA	.00125
13C4-PFHpA	.00125
13C4-PFOS	.00119
13C5-PFHxA	.00125
13C5-PFPeA	.00125
13C6-PFDA	.00125
13C7-PFUnA	.00125
13C8-FOSA	.00125
13C8-PFOA	.00122
13C8-PFOS	.00119
13C9-PFNA	.00125
1H,1H,2H,2H-Perfluorodecane sulfonate	.00025
1H,1H,2H,2H-Perfluorohexane sulfonate	.00025
1H,1H,2H,2H-Perfluorooctane sulfonate	.00025
3-Perfluoroheptyl propanoic acid	.00025
3-Perfluoropentyl propanoic acid	.00025
3-perfluoropropyl propanoic Acid	.00025
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	.00025
Adona	.00025
d3-MeFOSAA	.00125
d5-EtFOSAA	.00125
Hexafluoropropylene oxide dimer acid	.00025
N-ethylperfluoro-octanesulfonamidoacetic acid	.00025
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00025
Perfluoro-1-butanefulfonate	.00025
Perfluoro-1-decanesulfonate	.00025
Perfluoro-1-heptanesulfonate	.00025
Perfluoro-1-hexanesulfonate	.00025
Perfluoro-1-nonanesulfonate	.00025
Perfluoro-1-octanesulfonamide	.00025
Perfluoro-1-octanesulfonate	.00025
perfluoro-1-pentanesulfonate	.00025
Perfluoro-n-butanoic Acid	.00025
Perfluoro-n-decanoic Acid	.00025
Perfluoro-n-dodecanoic acid	.00025
Perfluoro-n-heptanoic Acid	.00025
Perfluoro-n-hexanoic acid	.00025

Solution Prepared By: Bailey, Kevin	Date Prepared: 11/12/2020	Expiration Date: 7/21/2021
Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121		

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE52

Description: PFAS - DoD Calibration L1

Perfluoro-n-octanoic Acid	.00025
Perfluorononanoic Acid	.00025
Perfluoro-n-pentanoic acid	.00025
Perfluoro-n-tetradecanoic acid	.00025
Perfluoro-n-tridecanoic acid	.00025
Perfluoro-n-undecanoic acid	.00025

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB78	Pipette	B814657482
LD73	Pipette	B814657482
LE51	Pipette	B814657482

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/12/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 1 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **LE53**

Description: PFAS - DoD Calibration L2

Stock Id: LB78

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	125	0.10	---	---	1	10	0.00125
13C2-PFOA	125	0.10	---	---	1	10	0.00125
13C3-PFBA	125	0.10	---	---	1	10	0.00125
13C4-PFOS	125	0.10	---	---	1	10	0.00119

Stock Id: LD73

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	125	0.09	---	---	1	10	0.00117
13C2-6:2FTS	125	0.10	---	---	1	10	0.00119
13C2-8:2FTS	125	0.10	---	---	1	10	0.00120
13C2-PFDoA	125	0.10	---	---	1	10	0.00125
13C2-PFTeDA	125	0.10	---	---	1	10	0.00125
13C3-HFPO-DA	125	0.10	---	---	1	10	0.00125
13C3-PFBS	125	0.09	---	---	1	10	0.00116
13C3-PFHxS	125	0.09	---	---	1	10	0.00118
13C4-PFBA	125	0.10	---	---	1	10	0.00125
13C4-PFHpA	125	0.10	---	---	1	10	0.00125
13C5-PFHxA	125	0.10	---	---	1	10	0.00125
13C5-PFPeA	125	0.10	---	---	1	10	0.00125
13C6-PFDA	125	0.10	---	---	1	10	0.00125
13C7-PFUnA	125	0.10	---	---	1	10	0.00125
13C8-FOSA	125	0.10	---	---	1	10	0.00125
13C8-PFOA	125	0.10	---	---	1	10	0.00122
13C8-PFOS	125	0.10	---	---	1	10	0.00119
13C9-PFNA	125	0.10	---	---	1	10	0.00125
d3-MeFOSAA	125	0.10	---	---	1	10	0.00125
d5-EtFOSAA	125	0.10	---	---	1	10	0.00125

Stock Id: LE51

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic aci	500	0.01	---	---	1	10	0.00050
1H,1H,2H,2H-Perfluorodecane sulfonate	500	0.01	---	---	1	10	0.00051
1H,1H,2H,2H-Perfluorohexane sulfonate	500	0.01	---	---	1	10	0.00050
1H,1H,2H,2H-Perfluorooctane sulfonate	500	0.01	---	---	1	10	0.00050
3-Perfluoroheptyl propanoic acid	500	0.01	---	---	1	10	0.00050

Solution Prepared By: Bailey, Kevin Date Prepared: 11/12/2020 Expiration Date: 7/21/2021

Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise Date: 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: **LE53**

Description: PFAS - DoD Calibration L2

3-Perfluoropentyl propanoic acid	500	0.01	---	---	1	10	0.00050
3-perfluoropropyl propanoic Acid	500	0.01	---	---	1	10	0.00050
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic aci	500	0.01	---	---	1	10	0.00050
Adona	500	0.01	---	---	1	10	0.00050
Hexafluoropropylene oxide dimer acid	500	0.01	---	---	1	10	0.00050
N-ethylperfluoro-octanesulfonamidoacetic acid	500	0.01	---	---	1	10	0.00050
N-methylperfluoro-1-octanesulfonamidoacetic acid	500	0.01	---	---	1	10	0.00050
Perfluoro-1-butanefulfonate	500	0.01	---	---	1	10	0.00050
Perfluoro-1-decanesulfonate	500	0.01	---	---	1	10	0.00051
Perfluoro-1-heptanesulfonate	500	0.01	---	---	1	10	0.00050
Perfluoro-1-hexanesulfonate	500	0.01	---	---	1	10	0.00051
Perfluoro-1-nonanesulfonate	500	0.01	---	---	1	10	0.00051
Perfluoro-1-octanesulfonamide	500	0.01	---	---	1	10	0.00050
Perfluoro-1-octanesulfonate	500	0.01	---	---	1	10	0.00051
perfluoro-1-pentanesulfonate	500	0.01	---	---	1	10	0.00050
Perfluoro-n-butanoic Acid	500	0.01	---	---	1	10	0.00050
Perfluoro-n-decanoic Acid	500	0.01	---	---	1	10	0.00050
Perfluoro-n-dodecanoic acid	500	0.01	---	---	1	10	0.00050
Perfluoro-n-heptanoic Acid	500	0.01	---	---	1	10	0.00050
Perfluoro-n-hexanoic acid	500	0.01	---	---	1	10	0.00051
Perfluoro-n-octanoic Acid	500	0.01	---	---	1	10	0.00050
Perfluorononanoic Acid	500	0.01	---	---	1	10	0.00050
Perfluoro-n-pentanoic acid	500	0.01	---	---	1	10	0.00051
Perfluoro-n-tetradecanoic acid	500	0.01	---	---	1	10	0.00050
Perfluoro-n-tridecanoic acid	500	0.01	---	---	1	10	0.00050
Perfluoro-n-undecanoic acid	500	0.01	---	---	1	10	0.00050

Final Concentrations:

Analyte:	Conc (ug/mL):
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	.00050
13C2-4:2FTS	.00117
13C2-6:2FTS	.00119
13C2-8:2FTS	.00120
13C2-PFDA	.00125
13C2-PFDoA	.00125
13C2-PFOA	.00125
13C2-PFTeDA	.00125
13C3-HFPO-DA	.00125
13C3-PFBA	.00125

Solution Prepared By: Bailey, Kevin	Date Prepared: 11/12/2020	Expiration Date: 7/21/2021
Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121		

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations Approved:

Standard Laboratory ID Number: LE53

Description: PFAS - DoD Calibration L2

13C3-PFBS	.00116
13C3-PFHxS	.00118
13C4-PFBA	.00125
13C4-PFHpA	.00125
13C4-PFOS	.00119
13C5-PFHxA	.00125
13C5-PFPeA	.00125
13C6-PFDA	.00125
13C7-PFUnA	.00125
13C8-FOSA	.00125
13C8-PFOA	.00122
13C8-PFOS	.00119
13C9-PFNA	.00125
1H,1H,2H,2H-Perfluorodecane sulfonate	.00051
1H,1H,2H,2H-Perfluorohexane sulfonate	.00050
1H,1H,2H,2H-Perfluorooctane sulfonate	.00050
3-Perfluoroheptyl propanoic acid	.00050
3-Perfluoropentyl propanoic acid	.00050
3-perfluoropropyl propanoic Acid	.00050
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	.00050
Adona	.00050
d3-MeFOSAA	.00125
d5-EtFOSAA	.00125
Hexafluoropropylene oxide dimer acid	.00050
N-ethylperfluoro-octanesulfonamidoacetic acid	.00050
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00050
Perfluoro-1-butanedisulfonate	.00050
Perfluoro-1-decanedisulfonate	.00051
Perfluoro-1-heptanedisulfonate	.00050
Perfluoro-1-hexanedisulfonate	.00051
Perfluoro-1-nonanedisulfonate	.00051
Perfluoro-1-octanesulfonamide	.00050
Perfluoro-1-octanedisulfonate	.00051
perfluoro-1-pentanedisulfonate	.00050
Perfluoro-n-butanedisulfonate	.00050
Perfluoro-n-decanedisulfonate	.00050
Perfluoro-n-dodecanedisulfonate	.00050
Perfluoro-n-heptanedisulfonate	.00050
Perfluoro-n-hexanedisulfonate	.00051

Solution Prepared By: Bailey, Kevin	Date Prepared: 11/12/2020	Expiration Date: 7/21/2021
Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121		

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE53

Description: PFAS - DoD Calibration L2

Perfluoro-n-octanoic Acid	.00050
Perfluorononanoic Acid	.00050
Perfluoro-n-pentanoic acid	.00051
Perfluoro-n-tetradecanoic acid	.00050
Perfluoro-n-tridecanoic acid	.00050
Perfluoro-n-undecanoic acid	.00050

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB78	Pipette	B814657482
LD73	Pipette	B814657482
LE51	Pipette	B820865811

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/12/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 1 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **LE54**

Description: PFAS - DoD Calibration L3

Stock Id: LB78

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	500	0.10	---	---	1	40	0.00125
13C2-PFOA	500	0.10	---	---	1	40	0.00125
13C3-PFBA	500	0.10	---	---	1	40	0.00125
13C4-PFOS	500	0.10	---	---	1	40	0.00119

Stock Id: LD73

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	500	0.09	---	---	1	40	0.00117
13C2-6:2FTS	500	0.10	---	---	1	40	0.00119
13C2-8:2FTS	500	0.10	---	---	1	40	0.00120
13C2-PFDoA	500	0.10	---	---	1	40	0.00125
13C2-PFTeDA	500	0.10	---	---	1	40	0.00125
13C3-HFPO-DA	500	0.10	---	---	1	40	0.00125
13C3-PFBS	500	0.09	---	---	1	40	0.00116
13C3-PFHxS	500	0.09	---	---	1	40	0.00118
13C4-PFBA	500	0.10	---	---	1	40	0.00125
13C4-PFHpA	500	0.10	---	---	1	40	0.00125
13C5-PFHxA	500	0.10	---	---	1	40	0.00125
13C5-PFPeA	500	0.10	---	---	1	40	0.00125
13C6-PFDA	500	0.10	---	---	1	40	0.00125
13C7-PFUnA	500	0.10	---	---	1	40	0.00125
13C8-FOSA	500	0.10	---	---	1	40	0.00125
13C8-PFOA	500	0.10	---	---	1	40	0.00122
13C8-PFOS	500	0.10	---	---	1	40	0.00119
13C9-PFNA	500	0.10	---	---	1	40	0.00125
d3-MeFOSAA	500	0.10	---	---	1	40	0.00125
d5-EtFOSAA	500	0.10	---	---	1	40	0.00125

Stock Id: LE50

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic aci	400	0.10	---	---	1	40	0.00100
1H,1H,2H,2H-Perfluorodecane sulfonate	400	0.10	---	---	1	40	0.00101
1H,1H,2H,2H-Perfluorohexane sulfonate	400	0.10	---	---	1	40	0.00100
1H,1H,2H,2H-Perfluorooctane sulfonate	400	0.10	---	---	1	40	0.00100
3-Perfluoroheptyl propanoic acid	400	0.10	---	---	1	40	0.00100

Solution Prepared By: Bailey, Kevin Date Prepared: 11/12/2020 Expiration Date: 7/21/2021

Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise Date: 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE54

Description: PFAS - DoD Calibration L3

3-Perfluoropentyl propanoic acid	400	0.10	---	---	1	40	0.00100
3-perfluoropropyl propanoic Acid	400	0.10	---	---	1	40	0.00100
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic aci	400	0.10	---	---	1	40	0.00100
Adona	400	0.10	---	---	1	40	0.00100
Hexafluoropropylene oxide dimer acid	400	0.10	---	---	1	40	0.00100
N-ethylperfluoro-octanesulfonamidoacetic acid	400	0.10	---	---	1	40	0.00100
N-methylperfluoro-1-octanesulfonamidoacetic acid	400	0.10	---	---	1	40	0.00100
Perfluoro-1-butanefulfonate	400	0.10	---	---	1	40	0.00100
Perfluoro-1-decanesulfonate	400	0.10	---	---	1	40	0.00101
Perfluoro-1-heptanesulfonate	400	0.10	---	---	1	40	0.00100
Perfluoro-1-hexanesulfonate	400	0.10	---	---	1	40	0.00101
Perfluoro-1-nonanesulfonate	400	0.10	---	---	1	40	0.00101
Perfluoro-1-octanesulfonamide	400	0.10	---	---	1	40	0.00100
Perfluoro-1-octanesulfonate	400	0.10	---	---	1	40	0.00101
perfluoro-1-pentanesulfonate	400	0.10	---	---	1	40	0.00100
Perfluoro-n-butanoic Acid	400	0.10	---	---	1	40	0.00100
Perfluoro-n-decanoic Acid	400	0.10	---	---	1	40	0.00100
Perfluoro-n-dodecanoic acid	400	0.10	---	---	1	40	0.00100
Perfluoro-n-heptanoic Acid	400	0.10	---	---	1	40	0.00100
Perfluoro-n-hexanoic acid	400	0.10	---	---	1	40	0.00101
Perfluoro-n-octanoic Acid	400	0.10	---	---	1	40	0.00100
Perfluorononanoic Acid	400	0.10	---	---	1	40	0.00100
Perfluoro-n-pentanoic acid	400	0.10	---	---	1	40	0.00101
Perfluoro-n-tetradecanoic acid	400	0.10	---	---	1	40	0.00100
Perfluoro-n-tridecanoic acid	400	0.10	---	---	1	40	0.00100
Perfluoro-n-undecanoic acid	400	0.10	---	---	1	40	0.00100

Final Concentrations:

Analyte:	Conc (ug/mL):
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	.00100
13C2-4:2FTS	.00117
13C2-6:2FTS	.00119
13C2-8:2FTS	.00120
13C2-PFDA	.00125
13C2-PFDoA	.00125
13C2-PFOA	.00125
13C2-PFTeDA	.00125
13C3-HFPO-DA	.00125
13C3-PFBA	.00125

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/12/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 1 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations Approved:

Standard Laboratory ID Number: LE54

Description: PFAS - DoD Calibration L3

13C3-PFBS	.00116
13C3-PFHxS	.00118
13C4-PFBA	.00125
13C4-PFHpA	.00125
13C4-PFOS	.00119
13C5-PFHxA	.00125
13C5-PFPeA	.00125
13C6-PFDA	.00125
13C7-PFUnA	.00125
13C8-FOSA	.00125
13C8-PFOA	.00122
13C8-PFOS	.00119
13C9-PFNA	.00125
1H,1H,2H,2H-Perfluorodecane sulfonate	.00101
1H,1H,2H,2H-Perfluorohexane sulfonate	.00100
1H,1H,2H,2H-Perfluorooctane sulfonate	.00100
3-Perfluoroheptyl propanoic acid	.00100
3-Perfluoropentyl propanoic acid	.00100
3-perfluoropropyl propanoic Acid	.00100
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	.00100
Adona	.00100
d3-MeFOSAA	.00125
d5-EtFOSAA	.00125
Hexafluoropropylene oxide dimer acid	.00100
N-ethylperfluoro-octanesulfonamidoacetic acid	.00100
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00100
Perfluoro-1-butanedisulfonate	.00100
Perfluoro-1-decanedisulfonate	.00101
Perfluoro-1-heptanedisulfonate	.00100
Perfluoro-1-hexanedisulfonate	.00101
Perfluoro-1-nonanedisulfonate	.00101
Perfluoro-1-octanesulfonamide	.00100
Perfluoro-1-octanedisulfonate	.00101
perfluoro-1-pentanedisulfonate	.00100
Perfluoro-n-butanedisulfonate	.00100
Perfluoro-n-decanedisulfonate	.00100
Perfluoro-n-dodecanedisulfonate	.00100
Perfluoro-n-heptanedisulfonate	.00100
Perfluoro-n-hexanedisulfonate	.00101

Solution Prepared By: Bailey, Kevin	Date Prepared: 11/12/2020	Expiration Date: 7/21/2021
Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121		

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE54

Description: PFAS - DoD Calibration L3

Perfluoro-n-octanoic Acid	.00100
Perfluorononanoic Acid	.00100
Perfluoro-n-pentanoic acid	.00101
Perfluoro-n-tetradecanoic acid	.00100
Perfluoro-n-tridecanoic acid	.00100
Perfluoro-n-undecanoic acid	.00100

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB78	Pipette	B820865811
LD73	Pipette	B820865811
LE50	Pipette	B820865811

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/12/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 1 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **LE55**

Description: PFAS - DoD Calibration L4

Stock Id: LB78

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	500	0.10	---	---	1	40	0.00125
13C2-PFOA	500	0.10	---	---	1	40	0.00125
13C3-PFBA	500	0.10	---	---	1	40	0.00125
13C4-PFOS	500	0.10	---	---	1	40	0.00119

Stock Id: LD73

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	500	0.09	---	---	1	40	0.00117
13C2-6:2FTS	500	0.10	---	---	1	40	0.00119
13C2-8:2FTS	500	0.10	---	---	1	40	0.00120
13C2-PFDoA	500	0.10	---	---	1	40	0.00125
13C2-PFTeDA	500	0.10	---	---	1	40	0.00125
13C3-HFPO-DA	500	0.10	---	---	1	40	0.00125
13C3-PFBS	500	0.09	---	---	1	40	0.00116
13C3-PFHxS	500	0.09	---	---	1	40	0.00118
13C4-PFBA	500	0.10	---	---	1	40	0.00125
13C4-PFHpA	500	0.10	---	---	1	40	0.00125
13C5-PFHxA	500	0.10	---	---	1	40	0.00125
13C5-PFPeA	500	0.10	---	---	1	40	0.00125
13C6-PFDA	500	0.10	---	---	1	40	0.00125
13C7-PFUnA	500	0.10	---	---	1	40	0.00125
13C8-FOSA	500	0.10	---	---	1	40	0.00125
13C8-PFOA	500	0.10	---	---	1	40	0.00122
13C8-PFOS	500	0.10	---	---	1	40	0.00119
13C9-PFNA	500	0.10	---	---	1	40	0.00125
d3-MeFOSAA	500	0.10	---	---	1	40	0.00125
d5-EtFOSAA	500	0.10	---	---	1	40	0.00125

Stock Id: LE50

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic aci	1000	0.10	---	---	1	40	0.00250
1H,1H,2H,2H-Perfluorodecane sulfonate	1000	0.10	---	---	1	40	0.00253
1H,1H,2H,2H-Perfluorohexane sulfonate	1000	0.10	---	---	1	40	0.00250
1H,1H,2H,2H-Perfluorooctane sulfonate	1000	0.10	---	---	1	40	0.00250
3-Perfluoroheptyl propanoic acid	1000	0.10	---	---	1	40	0.00250

Solution Prepared By: Bailey, Kevin Date Prepared: 11/12/2020 Expiration Date: 7/21/2021

Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise Date: 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE55

Description: PFAS - DoD Calibration L4

3-Perfluoropentyl propanoic acid	1000	0.10	---	---	1	40	0.00250
3-perfluoropropyl propanoic Acid	1000	0.10	---	---	1	40	0.00250
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic aci	1000	0.10	---	---	1	40	0.00250
Adona	1000	0.10	---	---	1	40	0.00250
Hexafluoropropylene oxide dimer acid	1000	0.10	---	---	1	40	0.00250
N-ethylperfluoro-octanesulfonamidoacetic acid	1000	0.10	---	---	1	40	0.00250
N-methylperfluoro-1-octanesulfonamidoacetic acid	1000	0.10	---	---	1	40	0.00250
Perfluoro-1-butanefluoride	1000	0.10	---	---	1	40	0.00250
Perfluoro-1-decanesulfonate	1000	0.10	---	---	1	40	0.00253
Perfluoro-1-heptanesulfonate	1000	0.10	---	---	1	40	0.00250
Perfluoro-1-hexanesulfonate	1000	0.10	---	---	1	40	0.00253
Perfluoro-1-nonanesulfonate	1000	0.10	---	---	1	40	0.00253
Perfluoro-1-octanesulfonamide	1000	0.10	---	---	1	40	0.00250
Perfluoro-1-octanesulfonate	1000	0.10	---	---	1	40	0.00253
perfluoro-1-pentanesulfonate	1000	0.10	---	---	1	40	0.00250
Perfluoro-n-butanoic Acid	1000	0.10	---	---	1	40	0.00250
Perfluoro-n-decanoic Acid	1000	0.10	---	---	1	40	0.00250
Perfluoro-n-dodecanoic acid	1000	0.10	---	---	1	40	0.00250
Perfluoro-n-heptanoic Acid	1000	0.10	---	---	1	40	0.00250
Perfluoro-n-hexanoic acid	1000	0.10	---	---	1	40	0.00253
Perfluoro-n-octanoic Acid	1000	0.10	---	---	1	40	0.00250
Perfluorononanoic Acid	1000	0.10	---	---	1	40	0.00250
Perfluoro-n-pentanoic acid	1000	0.10	---	---	1	40	0.00253
Perfluoro-n-tetradecanoic acid	1000	0.10	---	---	1	40	0.00250
Perfluoro-n-tridecanoic acid	1000	0.10	---	---	1	40	0.00250
Perfluoro-n-undecanoic acid	1000	0.10	---	---	1	40	0.00250

Final Concentrations:

Analyte:	Conc (ug/mL):
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	.00250
13C2-4:2FTS	.00117
13C2-6:2FTS	.00119
13C2-8:2FTS	.00120
13C2-PFDA	.00125
13C2-PFDoA	.00125
13C2-PFOA	.00125
13C2-PFTeDA	.00125
13C3-HFPO-DA	.00125
13C3-PFBA	.00125

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/12/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 1 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations Approved:

Standard Laboratory ID Number: LE55

Description: PFAS - DoD Calibration L4

13C3-PFBS	.00116
13C3-PFHxS	.00118
13C4-PFBA	.00125
13C4-PFHpA	.00125
13C4-PFOS	.00119
13C5-PFHxA	.00125
13C5-PFPeA	.00125
13C6-PFDA	.00125
13C7-PFUnA	.00125
13C8-FOSA	.00125
13C8-PFOA	.00122
13C8-PFOS	.00119
13C9-PFNA	.00125
1H,1H,2H,2H-Perfluorodecane sulfonate	.00253
1H,1H,2H,2H-Perfluorohexane sulfonate	.00250
1H,1H,2H,2H-Perfluorooctane sulfonate	.00250
3-Perfluoroheptyl propanoic acid	.00250
3-Perfluoropentyl propanoic acid	.00250
3-perfluoropropyl propanoic Acid	.00250
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	.00250
Adona	.00250
d3-MeFOSAA	.00125
d5-EtFOSAA	.00125
Hexafluoropropylene oxide dimer acid	.00250
N-ethylperfluoro-octanesulfonamidoacetic acid	.00250
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00250
Perfluoro-1-butanedisulfonate	.00250
Perfluoro-1-decanedisulfonate	.00253
Perfluoro-1-heptanedisulfonate	.00250
Perfluoro-1-hexanedisulfonate	.00253
Perfluoro-1-nonanedisulfonate	.00253
Perfluoro-1-octanesulfonamide	.00250
Perfluoro-1-octanedisulfonate	.00253
perfluoro-1-pentanedisulfonate	.00250
Perfluoro-n-butanedisulfonate	.00250
Perfluoro-n-decanedisulfonate	.00250
Perfluoro-n-dodecanedisulfonate	.00250
Perfluoro-n-heptanedisulfonate	.00250
Perfluoro-n-hexanedisulfonate	.00253

Solution Prepared By: Bailey, Kevin	Date Prepared: 11/12/2020	Expiration Date: 7/21/2021
Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121		

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE55

Description: PFAS - DoD Calibration L4

Perfluoro-n-octanoic Acid	.00250
Perfluorononanoic Acid	.00250
Perfluoro-n-pentanoic acid	.00253
Perfluoro-n-tetradecanoic acid	.00250
Perfluoro-n-tridecanoic acid	.00250
Perfluoro-n-undecanoic acid	.00250

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB78	Pipette	B820865811
LD73	Pipette	B820865811
LE50	Pipette	B820865811

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/12/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 1 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **LE56**

Description: PFAS - DoD Calibration L5

Stock Id: LB78

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	125	0.10	---	---	1	10	0.00125
13C2-PFOA	125	0.10	---	---	1	10	0.00125
13C3-PFBA	125	0.10	---	---	1	10	0.00125
13C4-PFOS	125	0.10	---	---	1	10	0.00119

Stock Id: LD73

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	125	0.09	---	---	1	10	0.00117
13C2-6:2FTS	125	0.10	---	---	1	10	0.00119
13C2-8:2FTS	125	0.10	---	---	1	10	0.00120
13C2-PFDoA	125	0.10	---	---	1	10	0.00125
13C2-PFTeDA	125	0.10	---	---	1	10	0.00125
13C3-HFPO-DA	125	0.10	---	---	1	10	0.00125
13C3-PFBS	125	0.09	---	---	1	10	0.00116
13C3-PFHxS	125	0.09	---	---	1	10	0.00118
13C4-PFBA	125	0.10	---	---	1	10	0.00125
13C4-PFHpA	125	0.10	---	---	1	10	0.00125
13C5-PFHxA	125	0.10	---	---	1	10	0.00125
13C5-PFPeA	125	0.10	---	---	1	10	0.00125
13C6-PFDA	125	0.10	---	---	1	10	0.00125
13C7-PFUnA	125	0.10	---	---	1	10	0.00125
13C8-FOSA	125	0.10	---	---	1	10	0.00125
13C8-PFOA	125	0.10	---	---	1	10	0.00122
13C8-PFOS	125	0.10	---	---	1	10	0.00119
13C9-PFNA	125	0.10	---	---	1	10	0.00125
d3-MeFOSAA	125	0.10	---	---	1	10	0.00125
d5-EtFOSAA	125	0.10	---	---	1	10	0.00125

Stock Id: LE50

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic aci	1000	0.10	---	---	1	10	0.01000
1H,1H,2H,2H-Perfluorodecane sulfonate	1000	0.10	---	---	1	10	0.01010
1H,1H,2H,2H-Perfluorohexane sulfonate	1000	0.10	---	---	1	10	0.01000
1H,1H,2H,2H-Perfluorooctane sulfonate	1000	0.10	---	---	1	10	0.01000
3-Perfluoroheptyl propanoic acid	1000	0.10	---	---	1	10	0.01000

Solution Prepared By: Bailey, Kevin Date Prepared: 11/12/2020 Expiration Date: 7/21/2021

Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise Date: 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE56

Description: PFAS - DoD Calibration L5

3-Perfluoropentyl propanoic acid	1000	0.10	---	---	1	10	0.01000
3-perfluoropropyl propanoic Acid	1000	0.10	---	---	1	10	0.01000
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic aci	1000	0.10	---	---	1	10	0.01000
Adona	1000	0.10	---	---	1	10	0.01000
Hexafluoropropylene oxide dimer acid	1000	0.10	---	---	1	10	0.01000
N-ethylperfluoro-octanesulfonamidoacetic acid	1000	0.10	---	---	1	10	0.01000
N-methylperfluoro-1-octanesulfonamidoacetic acid	1000	0.10	---	---	1	10	0.01000
Perfluoro-1-butanefulfonate	1000	0.10	---	---	1	10	0.01000
Perfluoro-1-decanesulfonate	1000	0.10	---	---	1	10	0.01010
Perfluoro-1-heptanesulfonate	1000	0.10	---	---	1	10	0.01000
Perfluoro-1-hexanesulfonate	1000	0.10	---	---	1	10	0.01010
Perfluoro-1-nonanesulfonate	1000	0.10	---	---	1	10	0.01010
Perfluoro-1-octanesulfonamide	1000	0.10	---	---	1	10	0.01000
Perfluoro-1-octanesulfonate	1000	0.10	---	---	1	10	0.01010
perfluoro-1-pentanesulfonate	1000	0.10	---	---	1	10	0.01000
Perfluoro-n-butanoic Acid	1000	0.10	---	---	1	10	0.01000
Perfluoro-n-decanoic Acid	1000	0.10	---	---	1	10	0.01000
Perfluoro-n-dodecanoic acid	1000	0.10	---	---	1	10	0.01000
Perfluoro-n-heptanoic Acid	1000	0.10	---	---	1	10	0.01000
Perfluoro-n-hexanoic acid	1000	0.10	---	---	1	10	0.01010
Perfluoro-n-octanoic Acid	1000	0.10	---	---	1	10	0.01000
Perfluorononanoic Acid	1000	0.10	---	---	1	10	0.01000
Perfluoro-n-pentanoic acid	1000	0.10	---	---	1	10	0.01010
Perfluoro-n-tetradecanoic acid	1000	0.10	---	---	1	10	0.01000
Perfluoro-n-tridecanoic acid	1000	0.10	---	---	1	10	0.01000
Perfluoro-n-undecanoic acid	1000	0.10	---	---	1	10	0.01000

Final Concentrations:

Analyte:	Conc (ug/mL):
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	.01000
13C2-4:2FTS	.00117
13C2-6:2FTS	.00119
13C2-8:2FTS	.00120
13C2-PFDA	.00125
13C2-PFDoA	.00125
13C2-PFOA	.00125
13C2-PFTeDA	.00125
13C3-HFPO-DA	.00125
13C3-PFBA	.00125

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/12/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 1 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations Approved:

Standard Laboratory ID Number: LE56

Description: PFAS - DoD Calibration L5

13C3-PFBS	.00116
13C3-PFHxS	.00118
13C4-PFBA	.00125
13C4-PFHpA	.00125
13C4-PFOS	.00119
13C5-PFHxA	.00125
13C5-PFPeA	.00125
13C6-PFDA	.00125
13C7-PFUnA	.00125
13C8-FOSA	.00125
13C8-PFOA	.00122
13C8-PFOS	.00119
13C9-PFNA	.00125
1H,1H,2H,2H-Perfluorodecane sulfonate	.01010
1H,1H,2H,2H-Perfluorohexane sulfonate	.01000
1H,1H,2H,2H-Perfluorooctane sulfonate	.01000
3-Perfluoroheptyl propanoic acid	.01000
3-Perfluoropentyl propanoic acid	.01000
3-perfluoropropyl propanoic Acid	.01000
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	.01000
Adona	.01000
d3-MeFOSAA	.00125
d5-EtFOSAA	.00125
Hexafluoropropylene oxide dimer acid	.01000
N-ethylperfluoro-octanesulfonamidoacetic acid	.01000
N-methylperfluoro-1-octanesulfonamidoacetic acid	.01000
Perfluoro-1-butanedisulfonate	.01000
Perfluoro-1-decanedisulfonate	.01010
Perfluoro-1-heptanedisulfonate	.01000
Perfluoro-1-hexanedisulfonate	.01010
Perfluoro-1-nonanedisulfonate	.01010
Perfluoro-1-octanesulfonamide	.01000
Perfluoro-1-octanedisulfonate	.01010
perfluoro-1-pentanedisulfonate	.01000
Perfluoro-n-butanedisulfonate	.01000
Perfluoro-n-decanedisulfonate	.01000
Perfluoro-n-dodecanedisulfonate	.01000
Perfluoro-n-heptanedisulfonate	.01000
Perfluoro-n-hexanedisulfonate	.01010

Solution Prepared By: Bailey, Kevin	Date Prepared: 11/12/2020	Expiration Date: 7/21/2021
Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121		

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE56

Description: PFAS - DoD Calibration L5

Perfluoro-n-octanoic Acid	.01000
Perfluorononanoic Acid	.01000
Perfluoro-n-pentanoic acid	.01010
Perfluoro-n-tetradecanoic acid	.01000
Perfluoro-n-tridecanoic acid	.01000
Perfluoro-n-undecanoic acid	.01000

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB78	Pipette	B814657482
LD73	Pipette	B814657482
LE50	Pipette	B820865811

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/12/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 1 **Vials Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **LE57**

Description: PFAS - DoD Calibration L6

Stock Id: LB78

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	125	0.10	---	---	1	10	0.00125
13C2-PFOA	125	0.10	---	---	1	10	0.00125
13C3-PFBA	125	0.10	---	---	1	10	0.00125
13C4-PFOS	125	0.10	---	---	1	10	0.00119

Stock Id: LD73

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	125	0.09	---	---	1	10	0.00117
13C2-6:2FTS	125	0.10	---	---	1	10	0.00119
13C2-8:2FTS	125	0.10	---	---	1	10	0.00120
13C2-PFDoA	125	0.10	---	---	1	10	0.00125
13C2-PFTeDA	125	0.10	---	---	1	10	0.00125
13C3-HFPO-DA	125	0.10	---	---	1	10	0.00125
13C3-PFBS	125	0.09	---	---	1	10	0.00116
13C3-PFHxS	125	0.09	---	---	1	10	0.00118
13C4-PFBA	125	0.10	---	---	1	10	0.00125
13C4-PFHpA	125	0.10	---	---	1	10	0.00125
13C5-PFHxA	125	0.10	---	---	1	10	0.00125
13C5-PFPeA	125	0.10	---	---	1	10	0.00125
13C6-PFDA	125	0.10	---	---	1	10	0.00125
13C7-PFUnA	125	0.10	---	---	1	10	0.00125
13C8-FOSA	125	0.10	---	---	1	10	0.00125
13C8-PFOA	125	0.10	---	---	1	10	0.00122
13C8-PFOS	125	0.10	---	---	1	10	0.00119
13C9-PFNA	125	0.10	---	---	1	10	0.00125
d3-MeFOSAA	125	0.10	---	---	1	10	0.00125
d5-EtFOSAA	125	0.10	---	---	1	10	0.00125

Stock Id: LE50

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic aci	2500	0.10	---	---	1	10	0.02500
1H,1H,2H,2H-Perfluorodecane sulfonate	2500	0.10	---	---	1	10	0.02525
1H,1H,2H,2H-Perfluorohexane sulfonate	2500	0.10	---	---	1	10	0.02500
1H,1H,2H,2H-Perfluorooctane sulfonate	2500	0.10	---	---	1	10	0.02500
3-Perfluoroheptyl propanoic acid	2500	0.10	---	---	1	10	0.02500

Solution Prepared By: Bailey, Kevin Date Prepared: 11/12/2020 Expiration Date: 7/21/2021

Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise Date: 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE57

Description: PFAS - DoD Calibration L6

3-Perfluoropentyl propanoic acid	2500	0.10	---	---	1	10	0.02500
3-perfluoropropyl propanoic Acid	2500	0.10	---	---	1	10	0.02500
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic aci	2500	0.10	---	---	1	10	0.02500
Adona	2500	0.10	---	---	1	10	0.02500
Hexafluoropropylene oxide dimer acid	2500	0.10	---	---	1	10	0.02500
N-ethylperfluoro-octanesulfonamidoacetic acid	2500	0.10	---	---	1	10	0.02500
N-methylperfluoro-1-octanesulfonamidoacetic acid	2500	0.10	---	---	1	10	0.02500
Perfluoro-1-butanefulfonate	2500	0.10	---	---	1	10	0.02500
Perfluoro-1-decanesulfonate	2500	0.10	---	---	1	10	0.02525
Perfluoro-1-heptanesulfonate	2500	0.10	---	---	1	10	0.02500
Perfluoro-1-hexanesulfonate	2500	0.10	---	---	1	10	0.02525
Perfluoro-1-nonanesulfonate	2500	0.10	---	---	1	10	0.02525
Perfluoro-1-octanesulfonamide	2500	0.10	---	---	1	10	0.02500
Perfluoro-1-octanesulfonate	2500	0.10	---	---	1	10	0.02525
perfluoro-1-pentanesulfonate	2500	0.10	---	---	1	10	0.02500
Perfluoro-n-butanoic Acid	2500	0.10	---	---	1	10	0.02500
Perfluoro-n-decanoic Acid	2500	0.10	---	---	1	10	0.02500
Perfluoro-n-dodecanoic acid	2500	0.10	---	---	1	10	0.02500
Perfluoro-n-heptanoic Acid	2500	0.10	---	---	1	10	0.02500
Perfluoro-n-hexanoic acid	2500	0.10	---	---	1	10	0.02525
Perfluoro-n-octanoic Acid	2500	0.10	---	---	1	10	0.02500
Perfluorononanoic Acid	2500	0.10	---	---	1	10	0.02500
Perfluoro-n-pentanoic acid	2500	0.10	---	---	1	10	0.02525
Perfluoro-n-tetradecanoic acid	2500	0.10	---	---	1	10	0.02500
Perfluoro-n-tridecanoic acid	2500	0.10	---	---	1	10	0.02500
Perfluoro-n-undecanoic acid	2500	0.10	---	---	1	10	0.02500

Final Concentrations:

Analyte:	Conc (ug/mL):
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	.02500
13C2-4:2FTS	.00117
13C2-6:2FTS	.00119
13C2-8:2FTS	.00120
13C2-PFDA	.00125
13C2-PFDoA	.00125
13C2-PFOA	.00125
13C2-PFTeDA	.00125
13C3-HFPO-DA	.00125
13C3-PFBA	.00125

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/12/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 1 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE57

Description: PFAS - DoD Calibration L6

13C3-PFBS	.00116
13C3-PFHxS	.00118
13C4-PFBA	.00125
13C4-PFHpA	.00125
13C4-PFOS	.00119
13C5-PFHxA	.00125
13C5-PFPeA	.00125
13C6-PFDA	.00125
13C7-PFUnA	.00125
13C8-FOSA	.00125
13C8-PFOA	.00122
13C8-PFOS	.00119
13C9-PFNA	.00125
1H,1H,2H,2H-Perfluorodecane sulfonate	.02525
1H,1H,2H,2H-Perfluorohexane sulfonate	.02500
1H,1H,2H,2H-Perfluorooctane sulfonate	.02500
3-Perfluoroheptyl propanoic acid	.02500
3-Perfluoropentyl propanoic acid	.02500
3-perfluoropropyl propanoic Acid	.02500
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	.02500
Adona	.02500
d3-MeFOSAA	.00125
d5-EtFOSAA	.00125
Hexafluoropropylene oxide dimer acid	.02500
N-ethylperfluoro-octanesulfonamidoacetic acid	.02500
N-methylperfluoro-1-octanesulfonamidoacetic acid	.02500
Perfluoro-1-butanedisulfonate	.02500
Perfluoro-1-decanedisulfonate	.02525
Perfluoro-1-heptanedisulfonate	.02500
Perfluoro-1-hexanedisulfonate	.02525
Perfluoro-1-nonanedisulfonate	.02525
Perfluoro-1-octanesulfonamide	.02500
Perfluoro-1-octanedisulfonate	.02525
perfluoro-1-pentanedisulfonate	.02500
Perfluoro-n-butanedisulfonate	.02500
Perfluoro-n-decanedisulfonate	.02500
Perfluoro-n-dodecanedisulfonate	.02500
Perfluoro-n-heptanedisulfonate	.02500
Perfluoro-n-hexanedisulfonate	.02525

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/12/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 1 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE57

Description: PFAS - DoD Calibration L6

Perfluoro-n-octanoic Acid	.02500
Perfluorononanoic Acid	.02500
Perfluoro-n-pentanoic acid	.02525
Perfluoro-n-tetradecanoic acid	.02500
Perfluoro-n-tridecanoic acid	.02500
Perfluoro-n-undecanoic acid	.02500

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB78	Pipette	B814657482
LD73	Pipette	B814657482
LE50	Pipette	B814657482

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/12/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 1 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **LE59**

Description: PFAS - DoD ICC

Stock Id: LB78

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-PFDA	125	0.10	---	---	1	10	0.00125
13C2-PFOA	125	0.10	---	---	1	10	0.00125
13C3-PFBA	125	0.10	---	---	1	10	0.00125
13C4-PFOS	125	0.10	---	---	1	10	0.00119

Stock Id: LD73

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
13C2-4:2FTS	125	0.09	---	---	1	10	0.00117
13C2-6:2FTS	125	0.10	---	---	1	10	0.00119
13C2-8:2FTS	125	0.10	---	---	1	10	0.00120
13C2-PFDoA	125	0.10	---	---	1	10	0.00125
13C2-PFTeDA	125	0.10	---	---	1	10	0.00125
13C3-HFPO-DA	125	0.10	---	---	1	10	0.00125
13C3-PFBS	125	0.09	---	---	1	10	0.00116
13C3-PFHxS	125	0.09	---	---	1	10	0.00118
13C4-PFBA	125	0.10	---	---	1	10	0.00125
13C4-PFHpA	125	0.10	---	---	1	10	0.00125
13C5-PFHxA	125	0.10	---	---	1	10	0.00125
13C5-PFPeA	125	0.10	---	---	1	10	0.00125
13C6-PFDA	125	0.10	---	---	1	10	0.00125
13C7-PFUnA	125	0.10	---	---	1	10	0.00125
13C8-FOSA	125	0.10	---	---	1	10	0.00125
13C8-PFOA	125	0.10	---	---	1	10	0.00122
13C8-PFOS	125	0.10	---	---	1	10	0.00119
13C9-PFNA	125	0.10	---	---	1	10	0.00125
d3-MeFOSAA	125	0.10	---	---	1	10	0.00125
d5-EtFOSAA	125	0.10	---	---	1	10	0.00125

Stock Id: LE49

Chemical Name	Stock Amount uL	Initial Conc. (ug/mL)	Density (g/mL)	Purity	Conv. Factor	Final Vol mL	Concentration (ug/mL)
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic aci	250	0.10	---	---	1	10	0.00250
1H,1H,2H,2H-Perfluorodecane sulfonate	250	0.10	---	---	1	10	0.00253
1H,1H,2H,2H-Perfluorohexane sulfonate	250	0.10	---	---	1	10	0.00250
1H,1H,2H,2H-Perfluorooctane sulfonate	250	0.10	---	---	1	10	0.00250
3-Perfluoroheptyl propanoic acid	250	0.10	---	---	1	10	0.00250

Solution Prepared By: Bailey, Kevin Date Prepared: 11/12/2020 Expiration Date: 7/21/2021

Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise Date: 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **LE59**

Description: PFAS - DoD ICC

3-Perfluoropentyl propanoic acid	250	0.10	---	---	1	10	0.00250
3-perfluoropropyl propanoic Acid	250	0.10	---	---	1	10	0.00250
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic aci	250	0.10	---	---	1	10	0.00250
Adona	250	0.10	---	---	1	10	0.00250
Hexafluoropropylene oxide dimer acid	250	0.10	---	---	1	10	0.00250
N-ethylperfluoro-octanesulfonamidoacetic acid	250	0.10	---	---	1	10	0.00250
N-methylperfluoro-1-octanesulfonamidoacetic acid	250	0.10	---	---	1	10	0.00250
Perfluoro-1-buthanesulfonate	250	0.10	---	---	1	10	0.00250
Perfluoro-1-decanesulfonate	250	0.10	---	---	1	10	0.00253
Perfluoro-1-heptanesulfonate	250	0.10	---	---	1	10	0.00250
Perfluoro-1-hexanesulfonate	250	0.10	---	---	1	10	0.00253
Perfluoro-1-nonanesulfonate	250	0.10	---	---	1	10	0.00253
Perfluoro-1-octanesulfonamide	250	0.10	---	---	1	10	0.00250
Perfluoro-1-octanesulfonate	250	0.10	---	---	1	10	0.00253
perfluoro-1-pentanesulfonate	250	0.10	---	---	1	10	0.00250
Perfluoro-n-butanoic Acid	250	0.10	---	---	1	10	0.00250
Perfluoro-n-decanoic Acid	250	0.10	---	---	1	10	0.00250
Perfluoro-n-dodecanoic acid	250	0.10	---	---	1	10	0.00250
Perfluoro-n-heptanoic Acid	250	0.10	---	---	1	10	0.00250
Perfluoro-n-hexanoic acid	250	0.10	---	---	1	10	0.00253
Perfluoro-n-octanoic Acid	250	0.10	---	---	1	10	0.00250
Perfluorononanoic Acid	250	0.10	---	---	1	10	0.00250
Perfluoro-n-pentanoic acid	250	0.10	---	---	1	10	0.00253
Perfluoro-n-tetradecanoic acid	250	0.10	---	---	1	10	0.00250
Perfluoro-n-tridecanoic acid	250	0.10	---	---	1	10	0.00250
Perfluoro-n-undecanoic acid	250	0.10	---	---	1	10	0.00250

Final Concentrations:

Analyte:	Conc (ug/mL):
11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	.00250
13C2-4:2FTS	.00117
13C2-6:2FTS	.00119
13C2-8:2FTS	.00120
13C2-PFDA	.00125
13C2-PFDoA	.00125
13C2-PFOA	.00125
13C2-PFTeDA	.00125
13C3-HFPO-DA	.00125
13C3-PFBA	.00125

Solution Prepared By: Bailey, Kevin Date Prepared: 11/12/2020 Expiration Date: 7/21/2021

Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise Date: 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE59

Description: PFAS - DoD ICC

13C3-PFBS	.00116
13C3-PFHxS	.00118
13C4-PFBA	.00125
13C4-PFHpA	.00125
13C4-PFOS	.00119
13C5-PFHxA	.00125
13C5-PFPeA	.00125
13C6-PFDA	.00125
13C7-PFUnA	.00125
13C8-FOSA	.00125
13C8-PFOA	.00122
13C8-PFOS	.00119
13C9-PFNA	.00125
1H,1H,2H,2H-Perfluorodecane sulfonate	.00253
1H,1H,2H,2H-Perfluorohexane sulfonate	.00250
1H,1H,2H,2H-Perfluorooctane sulfonate	.00250
3-Perfluoroheptyl propanoic acid	.00250
3-Perfluoropentyl propanoic acid	.00250
3-perfluoropropyl propanoic Acid	.00250
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	.00250
Adona	.00250
d3-MeFOSAA	.00125
d5-EtFOSAA	.00125
Hexafluoropropylene oxide dimer acid	.00250
N-ethylperfluoro-octanesulfonamidoacetic acid	.00250
N-methylperfluoro-1-octanesulfonamidoacetic acid	.00250
Perfluoro-1-butanefulfonate	.00250
Perfluoro-1-decanesulfonate	.00253
Perfluoro-1-heptanesulfonate	.00250
Perfluoro-1-hexanesulfonate	.00253
Perfluoro-1-nonanesulfonate	.00253
Perfluoro-1-octanesulfonamide	.00250
Perfluoro-1-octanesulfonate	.00253
perfluoro-1-pentanesulfonate	.00250
Perfluoro-n-butanoic Acid	.00250
Perfluoro-n-decanoic Acid	.00250
Perfluoro-n-dodecanoic acid	.00250
Perfluoro-n-heptanoic Acid	.00250
Perfluoro-n-hexanoic acid	.00253

Solution Prepared By: Bailey, Kevin Date Prepared: 11/12/2020 Expiration Date: 7/21/2021

Solution Volume : 40 mL X 1 Vials Refrigerator/Freezer No: VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise Date: 11/13/2020 1:16:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE59

Description: PFAS - DoD ICC

Perfluoro-n-octanoic Acid	.00250
Perfluorononanoic Acid	.00250
Perfluoro-n-pentanoic acid	.00253
Perfluoro-n-tetradecanoic acid	.00250
Perfluoro-n-tridecanoic acid	.00250
Perfluoro-n-undecanoic acid	.00250

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB78	Pipette	B814657482
LD73	Pipette	B814657482
LE49	Pipette	B814657482

Solution Prepared By: Bailey, Kevin **Date Prepared:** 11/12/2020 **Expiration Date:** 7/21/2021

Solution Volume : 40 mL X 1 Vials **Refrigerator/Freezer No:** VOC Laboratory: Refrigerator - R0121

Comment: 80/20 methanol/milli-q (RP-201112-19)

Approved By: Schumitz, Denise **Date:** 11/13/2020 1:16:00 PM



It can be done

BDO Id: 200721-01

Reagent Receipt Report

Approved:

Name: MPFBA Received: 7/21/2020
 Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
 Catalogue No: MPFBA Expires: 5/13/2025
 Type: Solution Consumed: _____
 Lot No: MPFBA0420 Stored In: VOC Laboratory - R0123
 Quantity: 1 ea mL % Moisture: _____
 Description: MPFBA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Lower Limit:	Upper Limit:
13C4-PFBA	BDO-2105	50.0000	98.00	--	--	<input type="checkbox"/>		

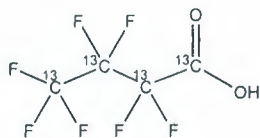
Total Analytes: 1

Notes:

Approved by: _____ Approved on: _____
 Authorized by: _____ Authorized on: _____

**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION

PRODUCT CODE: MPFBA
COMPOUND: Perfluoro-n-[1,2,3,4-¹³C₄]butanoic acid
LOT NUMBER: MPFBA0420
STRUCTURE:
CAS #: Not available



MOLECULAR FORMULA: ¹³C₄HF₇O₂
CONCENTRATION: 50.0 ± 2.5 µg/ml
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/13/2020
EXPIRY DATE: (mm/dd/yyyy) 05/13/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 218.01
SOLVENT(S): Methanol
Water (<1%)
ISOTOPIC PURITY: ≥99%¹³C
(1,2,3,4-¹³C₄)

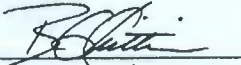
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: 
B.G. Chittim, General Manager
Date: 05/20/2020
(mm/dd/yyyy)

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It can be done

BDO Id:

200721-02

Reagent Receipt Report

Approved:

Authorized:

Name: M5PFPeA

Received: 7/21/2020

Vendor: Wellington Laboratories

Custodian: Schultz, Stephanie

Catalogue No: M5PFPeA

Expires: 1/22/2025

Type: Solution

Consumed:

Lot No: M5PFPeA0120

Stored In: VOC Laboratory - R0123

Quantity: 1 ea mL % Moisture:

Description: M5PFPeA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Lower Limit:	Upper Limit:
13C5-PFPeA	BDO-2216	50.0000	98.00	--	--	<input type="checkbox"/>		

Total Analytes: 1

Notes:

Approved by: _____

Approved on: _____

Authorized by: _____

Authorized on: _____



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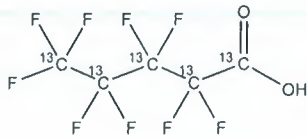
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M5PFPeA
COMPOUND: Perfluoro-n-[¹³C₅]pentanoic acid

LOT NUMBER: M5PFPeA0120

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: ¹³C₅HF₉O₂
CONCENTRATION: 50.0 ± 2.5 µg/ml

MOLECULAR WEIGHT: 269.01
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/22/2020
EXPIRY DATE: (mm/dd/yyyy) 01/22/2025

ISOTOPIC PURITY: >99% ¹³C
(¹³C₅)

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.25% of perfluoro-n-pentanoic acid.

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Certified By: 
B.G. Chittim, General Manager

Date: 01/24/2020
(mm/dd/yyyy)

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It can be done

BDO Id: _____

200721-03

Reagent Receipt Report

Approved: _____

Name: M5PFHxA Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: M5PFHxA Expires: 4/3/2025
Type: Solution Consumed: _____
Lot No: M5PFHxA0320 Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture: _____
Description: M5PFHxA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Lower Limit:	Upper Limit:
13C5-PFHxA	BDO-2217	50.0000	98.00	--	--	<input type="checkbox"/>		
Total Analytes:	1							

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____



WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M5PFHxA **LOT NUMBER:** M5PFHxA0320
COMPOUND: Perfluoro-n-[1,2,3,4,6-¹³C₅]hexanoic acid

STRUCTURE:  **CAS #:** Not available

MOLECULAR FORMULA: ¹³C₅¹²C₁HF₁₁O₂ **MOLECULAR WEIGHT:** 319.02
CONCENTRATION: 50.0 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2,3,4,6-¹³C₅)
LAST TESTED: (mm/dd/yyyy) 04/03/2020
EXPIRY DATE: (mm/dd/yyyy) 04/03/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

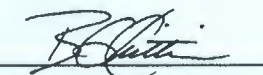
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 04/15/2020
 B.G. Chittim, General Manager (mm/dd/yyyy)

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It can be done

BDO Id:

200721-04

Reagent Receipt Report

Approved:

AM 07/21/20

Name: M4PFHpA Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: M4PFHpA Expires: 1/8/2025
Type: Solution Consumed: _____
Lot No: M4PFHpA0120 Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture: _____
Description: M4PFHpA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Lower Limit:	Upper Limit:
13C4-PFHpA	BDO-2218	50.0000	98.00	--	--	<input type="checkbox"/>		
Total Analytes:	1							

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____

It can be done

BDO Id:

200721-05

Reagent Receipt Report

Approved: Number:

Name: M8PFOA Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: M8PFOA Expires: 1/23/2025
Type: Solution Consumed: _____
Lot No: M8PFOA0220 Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture: _____
Description: M8PFOA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Lower Limit:	Upper Limit:
13C8-PFOA	BDO-2219	48.9000	97.80	--	--	<input type="checkbox"/>		
Total Analytes:	1							

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____

200721-05

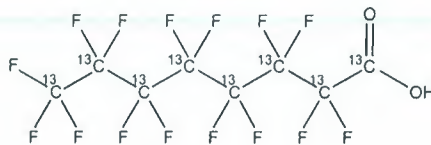


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M8PFOA **LOT NUMBER:** M8PFOA0220
COMPOUND: Perfluoro-n-[$^{13}\text{C}_8$]octanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: $^{13}\text{C}_8\text{HF}_{15}\text{O}_2$ **MOLECULAR WEIGHT:** 422.01
CONCENTRATION: $48.9 \pm 2.4 \mu\text{g/ml}$ **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: 97.8% (M8PFOA) **ISOTOPIC PURITY:** $\geq 99\% \text{ }^{13}\text{C}$
 2.2% (MPFOA [M+4]) ($^{13}\text{C}_8$)
LAST TESTED: (mm/dd/yyyy) 01/23/2020
EXPIRY DATE: (mm/dd/yyyy) 01/23/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

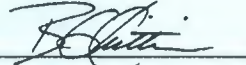
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of native perfluoro-n-octanoic acid (PFOA) and ~ 2.2% of [M+4] perfluoro-n-octanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager **Date:** 01/24/2020
 (mm/dd/yyyy)

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It can be done

BDO Id:

200721-06

Reagent Receipt Report

Approved: Authorized:

Name: M9PFNA Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: M9PFNA Expires: 9/8/2023
Type: Solution Consumed: _____
Lot No: M9PFNA0918 Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture: _____
Description: M9PFNA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Lower Limit:	Upper Limit:
13C9-PFNA	BDO-2221	50.0000	98.00	--	--	<input type="checkbox"/>		
Total Analytes:	1							

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____

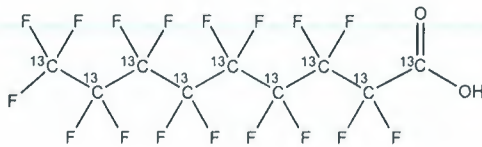


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M9PFNA **LOT NUMBER:** M9PFNA0918
COMPOUND: Perfluoro-n-[¹³C₉]nonanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₉HF₁₇O₂ **MOLECULAR WEIGHT:** 473.01
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 09/08/2018 (¹³C₉)
EXPIRY DATE: (mm/dd/yyyy) 09/08/2023
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 1.0% of ¹³C₅¹²C₄HF₁₇O₂ (MPFNA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager **Date:** 09/19/2018
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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It can be done

BDO Id:

200721-07

Reagent Receipt Report

Approved: Authorized:

Name: M6PFDA Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: M6PFDA Expires: 7/25/2024
Type: Solution Consumed: _____
Lot No: M6PFDA0719 Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture: _____
Description: M6PFDA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Lower Limit:	Upper Limit:
13C6-PFDA	BDO-2222	50.0000	98.00	--	--	<input type="checkbox"/>		
Total Analytes:	1							

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____

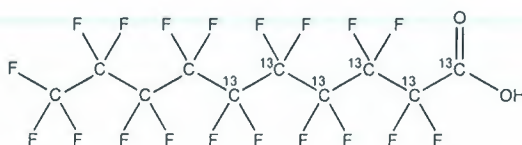
26072-07



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M6PFDA **LOT NUMBER:** M6PFDA0719
COMPOUND: Perfluoro-n-[1,2,3,4,5,6-¹³C₆]decanoic acid
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₆¹²C₄HF₁₉O₂ **MOLECULAR WEIGHT:** 520.04
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2,3,4,5,6-¹³C₆)
LAST TESTED: (mm/dd/yyyy) 07/25/2019
EXPIRY DATE: (mm/dd/yyyy) 07/25/2024
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 

B.G. Chittim, General Manager

Date: 07/26/2019

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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It can be done

BDO Id:

200721-08

Acquisition Receipt Report

Approved: Authorized:

Name: M7PFUdA Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: M7PFUdA Expires: 7/22/2024
Type: Solution Consumed: _____
Lot No: M7PFUdA0719 Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture: _____
Description: M7PFUdA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Lower Limit:	Upper Limit:
13C7-PFUnA	BDO-2223	50.0000	98.00	--	--	<input type="checkbox"/>		
Total Analytes:								1

Notes:

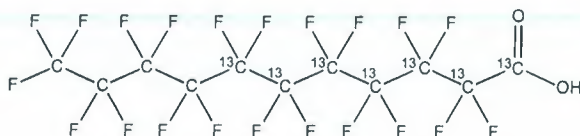
Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M7PFUdA **LOT NUMBER:** M7PFUdA0719
COMPOUND: Perfluoro-n-[1,2,3,4,5,6,7-¹³C₇]undecanoic acid
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₇¹²C₄HF₂₁O₂ **MOLECULAR WEIGHT:** 571.04
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
(1,2,3,4,5,6,7-¹³C₇)
LAST TESTED: (mm/dd/yyyy) 07/22/2019
EXPIRY DATE: (mm/dd/yyyy) 07/22/2024
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 09/12/2019
(mm/dd/yyyy)

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It can be done

BDO Id:

200721-09

Reagent Receipt Report

Approved: Authorized:

Name: MPFDoA Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: MPFDoA Expires: 11/22/2024
Type: Solution Consumed: _____
Lot No: MPFDoA1119 Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture: _____
Description: MPFDoA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Lower Limit:	Upper Limit:
13C2-PFDoA	BDO-2112	50.0000	98.00	--	--	<input type="checkbox"/>		
Total Analytes:	1							

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____

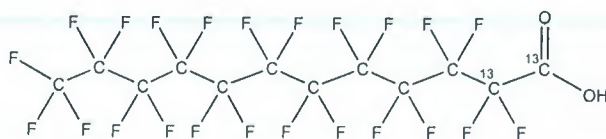
200721-09



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFDoA **LOT NUMBER:** MPFDoA1119
COMPOUND: Perfluoro-n-[1,2-¹³C₂]dodecanoic acid
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₁₀HF₂₃O₂ **MOLECULAR WEIGHT:** 616.08
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 11/22/2019
EXPIRY DATE: (mm/dd/yyyy) 11/22/2024
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

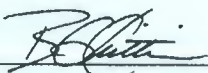
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____


 B.G. Chittim, General Manager

Date: 11/27/2019
 (mm/dd/yyyy)

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It can be done

BDO Id:

200721-10

Reagent Receipt ReportApproved: Authorized:

Name: M2PFTeDA Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: M2PFTeDA Expires: 11/14/2024
Type: Solution Consumed: _____
Lot No: M2PFTeDA1119 Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture: _____
Description: M2PFTeDA

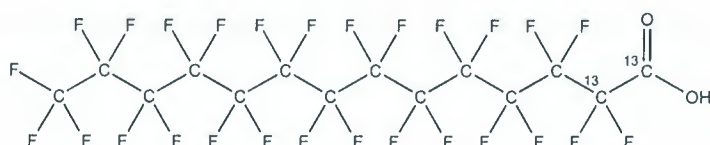
Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Lower Limit:	Upper Limit:
13C2-PFTeDA	BDO-2224	50.0000	98.00	--	--	<input type="checkbox"/>		
Total Analytes:	1							

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____

**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION

PRODUCT CODE: M2PFTeDA **LOT NUMBER:** M2PFTeDA1119
COMPOUND: Perfluoro-n-[1,2-¹³C₂]tetradecanoic acid
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₁₂HF₂₇O₂ **MOLECULAR WEIGHT:** 716.10
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
(1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 11/14/2019
EXPIRY DATE: (mm/dd/yyyy) 11/14/2024
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of perfluoro-n-tetradecanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 11/26/2019
(mm/dd/yyyy)

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It can be done

BDO Id: 200721-11

Reagent Receipt Report

Approved: Authorized:

Name: M2-4:2FTS Received: 7/21/2020
 Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
 Catalogue No: M2-4:2FTS Expires: 4/16/2025
 Type: Solution Consumed:
 Lot No: M242FTS0420 Stored In: VOC Laboratory - R0123
 Quantity: 1 ea mL % Moisture:
 Description: M2-4:2FTS

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Cert Val:	Lower Limit:	Upper Limit:
13C2-4:2FTS	BDO-2229	46.7000	98.00	--	--	<input type="checkbox"/>			

Total Analytes: 1

Notes:

Approved by: _____ Approved on: _____
 Authorized by: _____ Authorized on: _____

200721-11

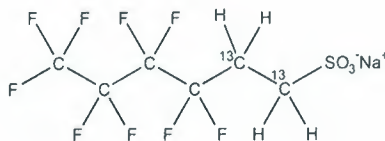


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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-4:2FTS **LOT NUMBER:** M242FTS0420
COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-[1,2-¹³C₂]hexane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₄H₄F₉SO₃Na **MOLECULAR WEIGHT:** 352.12
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
 46.9 ± 2.3 µg/ml (M2-4:2FTS acid)
 46.7 ± 2.3 µg/ml (M2-4:2FTS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 04/16/2020 (1,2-¹³C₂)
EXPIRY DATE: (mm/dd/yyyy) 04/16/2025
RECOMMENDED STORAGE: Refrigerate ampoule


DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 4:2FTS contains 4.22% of ³⁴S (due to natural isotopic abundance) therefore both native 4:2FTS and M2-4:2FTS will produce signals in the m/z 329 to m/z 309 channel during SRM analysis. We recommend using the m/z 329 to m/z 81 transition to monitor for M2-4:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

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Certified By: 
 B.G. Chittim, General Manager **Date:** 04/20/2020
 (mm/dd/yyyy)

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It can be done

BDO Id:

200721-12

Reagent Receipt Report

Approved:

Name: M2-6:2FTS Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: M2-6:2FTS Expires: 5/20/2025
Type: Solution Consumed: _____
Lot No: M262FTS0520 Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture: _____
Description: M2-6:2FTS

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Lower Limit:	Upper Limit:
13C2-6:2FTS	BDO-2230	47.5000	98.00	--	--	<input type="checkbox"/>		

Total Analytes: 1

Notes:

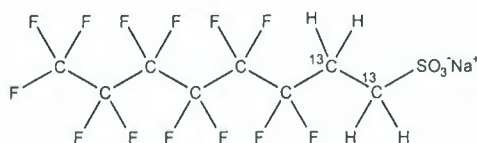
Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2-6:2FTS **LOT NUMBER:** M262FTS0520
COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-[1,2-¹³C₂]octane sulfonate
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₆H₄F₁₃SO₃Na **MOLECULAR WEIGHT:** 452.13
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
 47.6 ± 2.4 µg/ml (M2-6:2FTS acid)
 47.5 ± 2.4 µg/ml (M2-6:2FTS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 05/20/2020 (1,2-¹³C₂)
EXPIRY DATE: (mm/dd/yyyy) 05/20/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

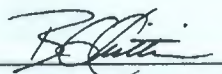
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 6:2FTS contains 4.22% of ³⁴S (due to natural isotopic abundance) therefore both native 6:2FTS and M2-6:2FTS will produce signals in the m/z 429 to m/z 409 channel during SRM analysis. We recommend using the m/z 429 to m/z 81 transition to monitor for M2-6:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____


 B.G. Chittim, General Manager

Date: 06/02/2020
 (mm/dd/yyyy)

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It can be done

BDO Id: 200721-13

Reagent Receipt Report

Approved: Authorized:

Name: M2-8:2FTS Received: 7/21/2020
 Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
 Catalogue No: M2-8:2FTS Expires: 3/18/2025
 Type: Solution Consumed:
 Lot No: M282FTS0320 Stored In: VOC Laboratory - R0123
 Quantity: 1 ea mL % Moisture:
 Description: M2-8:2FTS

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Lower Limit:	Upper Limit:
13C2-8:2FTS	BDO-2220	47.9000	98.00	--	--	<input type="checkbox"/>		

Total Analytes: 1

Notes:

Approved by: _____ Approved on: _____
 Authorized by: _____ Authorized on: _____

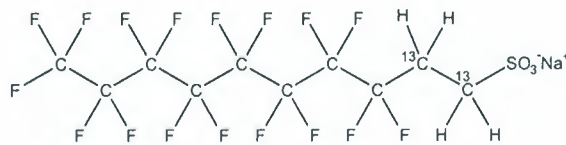


WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M2-8:2FTS **LOT NUMBER:** M282FTS0320
COMPOUND: Sodium 1H,1H,2H,2H-perfluoro-[1,2-¹³C₂]decane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₈H₄F₁₇SO₃Na **MOLECULAR WEIGHT:** 552.15
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
 48.0 ± 2.4 µg/ml (M2-8:2FTS acid)
 47.9 ± 2.4 µg/ml (M2-8:2FTS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 03/18/2020 (1,2-¹³C₂)
EXPIRY DATE: (mm/dd/yyyy) 03/18/2025
RECOMMENDED STORAGE: Refrigerate ampoule

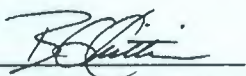
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- The native 8:2FTS contains 4.22% of ³⁴S (due to natural isotopic abundance) therefore both native 8:2FTS and M2-8:2FTS will produce signals in the m/z 529 to m/z 509 channel during SRM analysis. We recommend using the m/z 529 to m/z 81 transition to monitor for M2-8:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager **Date:** 03/18/2020
(mm/dd/yyyy)

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It can be done

BDO Id:

200721-14

Reagent Receipt Report

Approved:

Date: _____

Name: M3PFBSReceived: 7/21/2020Vendor: Wellington LaboratoriesCustodian: Schultz, StephanieCatalogue No: M3PFBSExpires: 3/17/2025Type: Solution

Consumed: _____

Lot No: M3PFBS1019Stored In: VOC Laboratory - R0123Quantity: 1 ea mL % Moisture: _____Description: M3PFBS

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Cert Val:	Lower Limit:	Upper Limit:
13C3-PFBS	BDO-2226	46.5000	98.00	--	--	<input type="checkbox"/>			

Total Analytes: 1

Notes:

Approved by: _____

Approved on: _____

Authorized by: _____

Authorized on: _____

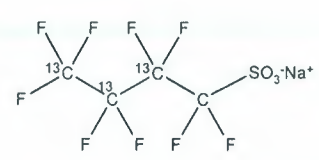


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3PFBS **LOT NUMBER:** M3PFBS1019
COMPOUND: Sodium perfluoro-1-[2,3,4-¹³C₃]butanesulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	¹³ C ₃ ¹² CF ₉ SO ₃ Na	MOLECULAR WEIGHT:	325.06
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 46.6 ± 2.3 µg/ml (M3PFBS acid) 46.5 ± 2.3 µg/ml (M3PFBS anion)	SOLVENT(S):	Methanol
CHEMICAL PURITY:	>98%	ISOTOPIC PURITY:	≥99% ¹³ C (2,3,4- ¹³ C ₃)
LAST TESTED: (mm/dd/yyyy)	03/17/2020		
EXPIRY DATE: (mm/dd/yyyy)	03/17/2025		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

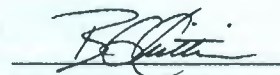
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains < 0.1% of perfluoro-1-butanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 03/18/2020
(mm/dd/yyyy)
 B.G. Chittim, General Manager

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It can be done

BDO Id:

200721-15

Reagent Receipt Report

Approved: Authorized on:

Name: M3PFHxS Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: M3PFHxS Expires: 10/15/2024
Type: Solution Consumed: _____
Lot No: M3PFHxS1019 Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture: _____
Description: M3PFHxS

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Lower Limit:	Upper Limit:
13C3-PFHxS	BDO-2227	47.3000	98.00	--	--	<input type="checkbox"/>		
Total Analytes:	1							

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3PFHxS **LOT NUMBER:** M3PFHxS1019
COMPOUND: Sodium perfluoro-1-[1,2,3-¹³C₃]hexanesulfonate
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₃¹²C₃F₁₃SO₃Na **MOLECULAR WEIGHT:** 425.07
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
47.3 ± 2.4 µg/ml (M3PFHxS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 10/15/2019 (1,2,3-¹³C₃)
EXPIRY DATE: (mm/dd/yyyy) 10/15/2024
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

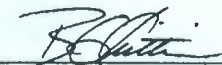
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.1% perfluoro-1-[1,2-¹³C₂]pentanesulfonate, ~ 0.1% perfluoro-1-octanesulfonate, and ~ 0.05% of perfluoro-1-hexanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 10/16/2019
B.G. Chittim, General Manager (mm/dd/yyyy)

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It can be done

BDO Id:

200721-16

Reagent Receipt Report

Approved: Authorized:

Name: M8PFOS Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: M8PFOS Expires: 2/21/2025
Type: Solution Consumed: _____
Lot No: M8PFOS0120 Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture: _____
Description: M8PFOS

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Cert Val:	Lower Limit:	Upper Limit:
13C8-PFOS	BDO-2228	47.8000	98.00	--	--	<input type="checkbox"/>			
Total Analytes:	1								

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____

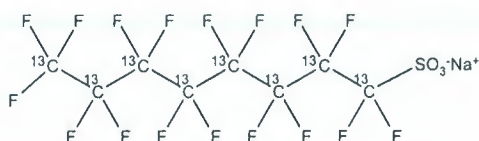
200721-16



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M8PFOS **LOT NUMBER:** M8PFOS0120
COMPOUND: Sodium perfluoro-1-[¹³C₈]octanesulfonate
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₈F₁₇SO₃Na **MOLECULAR WEIGHT:** 530.05
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
 47.9 ± 2.4 µg/ml (M8PFOS acid)
 47.8 ± 2.4 µg/ml (M8PFOS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** >99% ¹³C
LAST TESTED: (mm/dd/yyyy) 02/21/2020 (¹³C₈)
EXPIRY DATE: (mm/dd/yyyy) 02/21/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.2% of sodium perfluoro-1-[¹³C₇]heptanesulfonate (¹³C₇-PFHpS) and ~ 1.0% of sodium perfluoro-1-[¹³C₈]octanesulfonate (MPFOS).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 02/21/2020
 (mm/dd/yyyy)

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It can be done

BDO Id:

200721-17

Reagent Receipt Report

Approved: Authorized:

Name: d3-N-MeFOSAA

Received: 7/21/2020

Vendor: Wellington Laboratories

Custodian: Schultz, Stephanie

Catalogue No: d3-N-MeFOSAA

Expires: 12/2/2024

Type: Solution

Consumed:

Lot No: d3NMeFOSAA1119

Stored In: VOC Laboratory - R0123

Quantity: 1 ea mL % Moisture:

Description: d3-N-MeFOSAA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Cert Val:	Lower Limit:	Upper Limit:
d3-MeFOSAA	BDO-1838	50.0000	98.00	--	--	<input type="checkbox"/>			

Total Analytes: 1

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____

200721-17

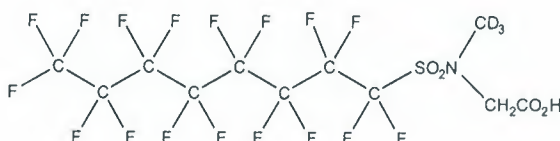


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: d3-N-MeFOSAA **LOT NUMBER:** d3NMeFOSAA1119
COMPOUND: N-methyl-d3-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** 1400690-70-1



MOLECULAR FORMULA: C₁₁D₃H₃F₁₇NO₄S **MOLECULAR WEIGHT:** 574.23
CONCENTRATION: 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥98% ²H₃
LAST TESTED: (mm/dd/yyyy) 12/02/2019
EXPIRY DATE: (mm/dd/yyyy) 12/02/2024
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

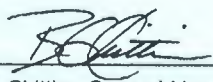
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____


 B.G. Chittim, General Manager

Date: 12/04/2019
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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It can be done

BDO Id:

200721-18

Reagent Receipt Report

Approved: Authorized:

Name: d5-N-EtFOSAA Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: d5-N-EtFOSAA Expires: 5/20/2025
Type: Solution Consumed: _____
Lot No: d5NEtFOSAA0520 Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture: _____
Description: d5-N-EtFOSAA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Cert Val:	Lower Limit:	Upper Limit:
d5-EtFOSAA	BDO-1839	50.0000	98.00	--	--	<input type="checkbox"/>			
Total Analytes:	1								

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____

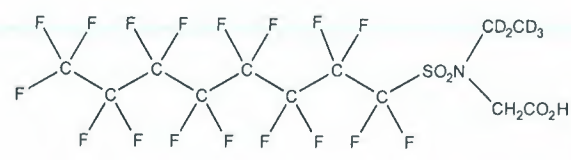


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: d5-N-EtFOSAA **LOT NUMBER:** d5NEtFOSAA0520
COMPOUND: N-ethyl-d5-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: C₁₂D₅H₃F₁₇NO₄S
CONCENTRATION: 50.0 ± 2.5 µg/ml

MOLECULAR WEIGHT: 590.26
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/20/2020
EXPIRY DATE: (mm/dd/yyyy) 05/20/2025
RECOMMENDED STORAGE: Refrigerate ampoule

ISOTOPIC PURITY: ≥98% ²H₅

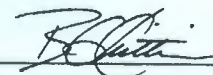
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 05/22/2020
B.G. Chittim, General Manager (mm/dd/yyyy)

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It can be done

BDO Id:

200721-19

Reagent Receipt Report

Approved: Authorized:

Name: M8FOSA-I Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: M8FOSA-I Expires: 2/28/2025
Type: Solution Consumed:
Lot No: M8FOSA0220I Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture:
Description: M8FOSA-I

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Lower Limit:	Upper Limit:
13C8-FOSA	BDO-2225	50.0000	98.00	--	--	<input type="checkbox"/>		

Total Analytes: 1

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____

200721-19



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M8FOSA-I **LOT NUMBER:** M8FOSA0220I
COMPOUND: Perfluoro-1-[¹³C₈]octanesulfonamide
STRUCTURE: **CAS #:** 1365803-60-6



MOLECULAR FORMULA: ¹³C₈H₂F₁₇NO₂S **MOLECULAR WEIGHT:** 507.09
CONCENTRATION: 50.0 ± 2.5 µg/ml **SOLVENT(S):** Isopropanol
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 02/28/2020 (¹³C₈)
EXPIRY DATE: (mm/dd/yyyy) 02/28/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

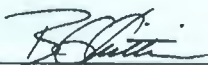
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 1.2% of perfluoro-1-[¹³C₈]octanesulfonamide and ~ 0.03% of perfluoro-1-[¹³C₇]heptanesulfonamide.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:


 B.G. Chittim, General Manager

Date: 03/03/2020
 (mm/dd/yyyy)

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It can be done

BDO Id:

200721-20

Reagent Receipt Report

Approved: Sub:

Name: M3HFPO-DA Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: M3HFPO-DA Expires: 5/13/2023
Type: Solution Consumed:
Lot No: M3HFPODA0520 Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture:
Description: M3HFPO-DA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Lower Limit:	Upper Limit:
13C3-HFPO-DA	BDO-2276	50.0000	98.00	--	--	<input type="checkbox"/>		
Total Analytes:	1							

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____

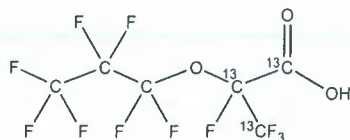


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3HFPO-DA **LOT NUMBER:** M3HFPODA0520
COMPOUND: 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-¹³C₃-propanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	¹³ C ₃ ¹² C ₃ HF ₁₁ O ₃	MOLECULAR WEIGHT:	333.03
CONCENTRATION:	50.0 ± 2.5 µg/ml	SOLVENT(S):	Methanol
CHEMICAL PURITY:	>98%	ISOTOPIC PURITY:	≥99% ¹³ C
LAST TESTED: (mm/dd/yyyy)	05/13/2020		(¹³ C ₃)
EXPIRY DATE: (mm/dd/yyyy)	05/13/2023		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 1.9% of the linear M3HFPO-DA isomer.
- Product is commercially known as GenX.

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Certified By:

B.G. Chittim, General Manager

Date: 05/22/2020

(mm/dd/yyyy)

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It can be done

BDO Id: _____

200721-21

Reagent Receipt Report

Approved: Authorized:

Name: MPFDA Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: MPFDA Expires: 3/24/2025
Type: Solution Consumed: _____
Lot No: MPFDA0320 Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture: _____
Description: MPFDA

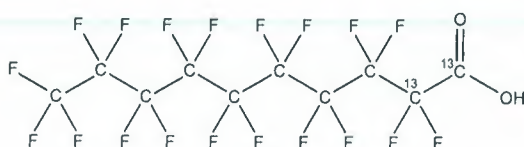
Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Lower Limit:	Upper Limit:
13C2-PFDA	BDO-2110	50.0000	98.00	--	--	<input type="checkbox"/>		
Total Analytes:	1							

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____

**WELLINGTON**
LABORATORIES**CERTIFICATE OF ANALYSIS**
DOCUMENTATION

PRODUCT CODE: MPFDA **LOT NUMBER:** MPFDA0320
COMPOUND: Perfluoro-n-[1,2-¹³C₂]decanoic acid
STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₈HF₁₉O₂ **MOLECULAR WEIGHT:** 516.07
CONCENTRATION: 50.0 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
(1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 03/24/2020
EXPIRY DATE: (mm/dd/yyyy) 03/24/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 04/06/2020
(mm/dd/yyyy)

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It can be done

BDO Id:

200721-22

Reagent Receipt Report

Approved: Authorized:

Name: M2PFOA Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: M2PFOA Expires: 1/8/2025
Type: Solution Consumed: _____
Lot No: M2PFOA0120 Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture: _____
Description: M2PFOA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Cert Val:	Lower Limit:	Upper Limit:
13C2-PFOA	BDO-2107	50.0000	98.00	--	--	<input type="checkbox"/>			
Total Analytes:	1								

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____

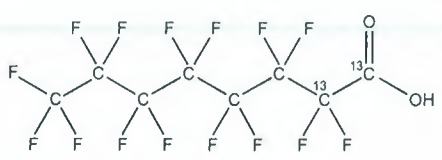


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M2PFOA **LOT NUMBER:** M2PFOA0120
COMPOUND: Perfluoro-n-[1,2-¹³C₂]octanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₂¹²C₆HF₁₅O₂ **MOLECULAR WEIGHT:** 416.05
CONCENTRATION: 50.0 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
LAST TESTED: (mm/dd/yyyy) 01/08/2020 (1,2-¹³C₂)
EXPIRY DATE: (mm/dd/yyyy) 01/08/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

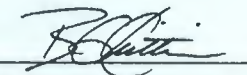
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of perfluoro-n-[¹³C₁]heptanoic acid (¹³C₁-PFHpA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 01/15/2020
B.G. Chittim, General Manager (mm/dd/yyyy)

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It can be done

BDO Id:

200721-23

Reagent Receipt Report

Approved:

Authorized:

Name: M3PFBA

Received: 7/21/2020

Vendor: Wellington Laboratories

Custodian: Schultz, Stephanie

Catalogue No: M3PFBA

Expires: 2/24/2025

Type: Solution

Consumed:

Lot No: M3PFBA0120

Stored In: VOC Laboratory - R0123

Quantity: 1 ea mL % Moisture:

Description: M3PFBA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:
13C3-PFBA	BDO-2231	50.0000	98.00	--	--	<input type="checkbox"/>			

Total Analytes: 1

Notes:

Approved by: _____

Approved on: _____

Authorized by: _____

Authorized on: _____

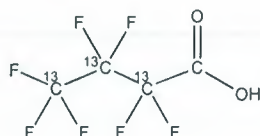


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3PFBA **LOT NUMBER:** M3PFBA0120
COMPOUND: Perfluoro-n-[2,3,4-¹³C₃]butanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₃¹²CHF₇O₂ **MOLECULAR WEIGHT:** 217.02
CONCENTRATION: 50.0 ± 2.5 µg/ml **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
 (2,3,4-¹³C₃)
LAST TESTED: (mm/dd/yyyy) 02/24/2020
EXPIRY DATE: (mm/dd/yyyy) 02/24/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

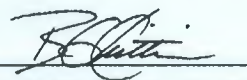
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of perfluoro-n-[¹³C₃]propanoic acid and also contains ~ 1.0% of perfluoro-n-[1,2,3,4-¹³C₄]butanoic acid due to the naturally occurring isotopic abundance of ¹³C in the unlabelled carbon atom.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager **Date:** 03/27/2020
 (mm/dd/yyyy)

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It can be done

BDO Id: 200721-24

Reagent Receipt Report

Approved: Authorized:

Name: MPFOS Received: 7/21/2020
Vendor: Wellington Laboratories Custodian: Schultz, Stephanie
Catalogue No: MPFOS Expires: 4/15/2025
Type: Solution Consumed:
Lot No: MPFOS0420 Stored In: VOC Laboratory - R0123
Quantity: 1 ea mL % Moisture:
Description: MPFOS

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Cert Val:	Lower Limit:	Upper Limit:
13C4-PFOS	BDO-2121	47.8000	98.00	--	--	<input type="checkbox"/>			
Total Analytes:	1								

Notes:

Approved by: _____ Approved on: _____
Authorized by: _____ Authorized on: _____



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFOS **LOT NUMBER:** MPFOS0420
COMPOUND: Sodium perfluoro-1-[1,2,3,4-¹³C₄]octanesulfonate

STRUCTURE: **CAS #:** 960315-53-1



MOLECULAR FORMULA: ¹³C₄¹²C₄F₁₇SO₃Na **MOLECULAR WEIGHT:** 526.08
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
47.9 ± 2.4 µg/ml (MPFOS acid)
47.8 ± 2.4 µg/ml (MPFOS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 04/15/2020 (1,2,3,4-¹³C₄)
EXPIRY DATE: (mm/dd/yyyy) 04/15/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

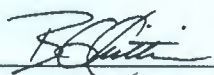
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.3% Sodium perfluoro-1-[1,2,3-¹³C₃]heptanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 04/20/2020
B.G. Chittim, General Manager (mm/dd/yyyy)

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BATTELLE

It can be done

BDO Id: 200811-01

Reagent Receipt Report

Approved: Authorized

Name: 3-Perfluoropropyl propanoic acid **Received:** 8/11/2020
Vendor: Wellington Laboratories **Custodian:** Bailey, Kevin
Catalogue No: FPrPA **Expires:** 1/7/2023
Type: Solution **Consumed:** _____
Lot No: FPrPA1219 **Stored In:** VOC Laboratory - R0123
Quantity: 1 ea ml **% Moisture:** _____
Description: FPrPA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:
3-perfluoropropyl propanoic Acid	356-02-5	50.0000	98.00	--	--	<input type="checkbox"/>	50	47.5	52.5

Total Analytes: 1

Notes:

Approved by: _____ **Approved on:** _____
Authorized by: _____ **Authorized on:** _____



WELLINGTON LABORATORIES

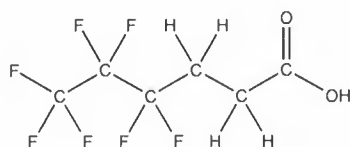
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPrPA
COMPOUND: 3-Perfluoropropyl propanoic acid

LOT NUMBER: FPrPA1219

STRUCTURE:

CAS #: 356-02-5



MOLECULAR FORMULA: $C_6H_5F_7O_2$
CONCENTRATION: $50 \pm 2.5 \mu\text{g/ml}$
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/07/2020
EXPIRY DATE: (mm/dd/yyyy) 01/07/2023
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 242.09
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid ($C_6H_3F_7O_2$) as an impurity determined by ^{19}F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 01/08/2020
(mm/dd/yyyy)

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BATTELLE

It can be done

BDO Id: 200811-02

Reagent Receipt Report

Approved: Authorized

Name: 3-Perfluoroheptyl propanoic acid **Received:** 8/11/2020
Vendor: Wellington Laboratories **Custodian:** Bailey, Kevin
Catalogue No: FHpPA **Expires:** 3/31/2023
Type: Solution **Consumed:** _____
Lot No: FHpPA0320 **Stored In:** VOC Laboratory - R0123
Quantity: 1 ea ml **% Moisture:** _____
Description: FHpPA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:
3-Perfluoroheptyl propanoic acid	812-70-4	50.0000	98.00	--	--	<input type="checkbox"/>	50	47.5	52.5

Total Analytes: 1

Notes:

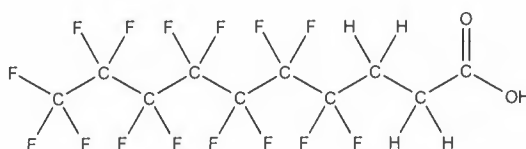
Approved by: _____ **Approved on:** _____
Authorized by: _____ **Authorized on:** _____



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FHpPA **LOT NUMBER:** FHpPA0320
COMPOUND: 3-Perfluoroheptyl propanoic acid
STRUCTURE: **CAS #:** 812-70-4



MOLECULAR FORMULA: C₁₀H₅F₁₅O₂ **MOLECULAR WEIGHT:** 442.12
CONCENTRATION: 50.0 ± 2.5 µg/ml **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/31/2020
EXPIRY DATE: (mm/dd/yyyy) 03/31/2023
RECOMMENDED STORAGE: Refrigerate ampoule


DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 04/01/2020
 B.G. Chittim, General Manager (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

BATTELLE

It can be done

BDO Id: 200811-03

Reagent Receipt Report

Approved: Authorized

Name: 3-Perfluoropentyl propanoic acid **Received:** 8/11/2020
Vendor: Wellington Laboratories **Custodian:** Bailey, Kevin
Catalogue No: FPePA **Expires:** 10/2/2022
Type: Solution **Consumed:** _____
Lot No: FPePA0919 **Stored In:** VOC Laboratory - R0123
Quantity: 1 ea ml **% Moisture:** _____
Description: FPePA

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert Val:	Cert Val:	Lower Limit:	Upper Limit:
3-Perfluoropentyl propanoic acid	914637-49-3	50.0000	98.00	--	--	<input type="checkbox"/>	50	47.5	52.5

Total Analytes: 1

Notes:

Approved by: _____ **Approved on:** _____
Authorized by: _____ **Authorized on:** _____



WELLINGTON LABORATORIES

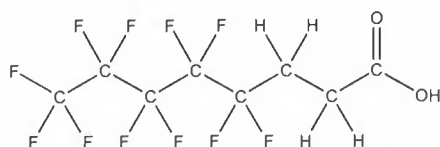
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPePA
COMPOUND: 3-Perfluoropentyl propanoic acid

LOT NUMBER: FPePA0919

STRUCTURE:

CAS #: 914637-49-3



MOLECULAR FORMULA: $C_8H_5F_{11}O_2$
CONCENTRATION: $50 \pm 2.5 \mu\text{g/ml}$
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 10/02/2019
EXPIRY DATE: (mm/dd/yyyy) 10/02/2022
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 342.11
SOLVENT(S): Methanol


DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 5:3 telomer acid ($C_8H_3F_{11}O_2$) as an impurity determined by ^{19}F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 10/04/2019
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com



It can be done

BDO Id: 200909-01

Reagent Receipt Report

Approved: Authorized

Name: PFOA DOD **Received:** 9/9/2020
Vendor: ABSOLUTE STANDARDS **Custodian:** Bailey, Kevin
Catalogue No: 64029 **Expires:** 7/28/2025
Type: Solution **Consumed:** _____
Lot No: 072820 **Stored In:** LC Laboratory - F0111
Quantity: 5 ea ml **% Moisture:** _____
Description: PFOA DOD

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:
11-chloroeicosafuoro-3-oxaundecan	763051-92-9	1.0000	100.00	--	--	<input type="checkbox"/>			
1H,1H,2H,2H-Perfluorodecane sulfon	39108-34-4	1.0100	100.00	--	--	<input type="checkbox"/>			
1H,1H,2H,2H-Perfluorohexane sulfon	757124-72-4	1.0000	100.00	--	--	<input type="checkbox"/>			
1H,1H,2H,2H-Perfluorooctane sulfon	27619-97-2	1.0000	100.00	--	--	<input type="checkbox"/>			
9-chlorohexadecafluoro-3-oxanonane	756426-58-1	1.0000	100.00	--	--	<input type="checkbox"/>			
Adona	919005-14-4	1.0000	100.00	--	--	<input type="checkbox"/>			
Hexafluoropropylene oxide dimer aci	13252-13-6	1.0000	100.00	--	--	<input type="checkbox"/>			
N-ethylperfluoro-octanesulfonamidoa	2991-50-6	1.0000	100.00	--	--	<input type="checkbox"/>			
N-methylperfluoro-1-octanesulfonami	2355-31-9	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-butanesulfonate	375-73-5	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-decanesulfonate	335-77-3	1.0100	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-heptanesulfonate	375-92-8	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-hexanesulfonate	355-46-4	1.0100	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-nonanesulfonate	68259-12-1	1.0100	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-octanesulfonamide	754-91-6	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-octanesulfonate	1763-23-1	1.0100	100.00	--	--	<input type="checkbox"/>			
perfluoro-1-pentanesulfonate	2706-91-4	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-butanoic Acid	375-22-4	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-decanoic Acid	335-76-2	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-dodecanoic acid	307-55-1	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-heptanoic Acid	375-85-9	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-hexanoic acid	307-24-4	1.0100	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-octanoic Acid	335-67-1	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluorononanoic Acid	375-95-1	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-pentanoic acid	2706-90-3	1.0100	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-tetradecanoic acid	376-06-7	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-tridecanoic acid	72629-94-8	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-undecanoic acid	2058-94-8	1.0000	100.00	--	--	<input type="checkbox"/>			

Total Analytes: 28

Notes:

Approved by: _____ **Approved on:** _____
Authorized by: _____ **Authorized on:** _____



200909-01

CERTIFIED WEIGHT REPORT

Part Number: 64029
Lot Number: 072820
Description: PFOA - DOD
26 components
Solvent(s): Methanol (1 mM KOH) Lot# 042920 (98%)
2-Propanol 23214 (2%)
Expiration Date: 072825
Recommended Storage: Freezer (0 °C)
Nominal Concentration (µg/mL): 1.0
NIST Test ID#: 23050
5E-05 Balance Uncertainty
0.007 Flask Uncertainty

Formulated By: Benson Chan	072820	DATE
Reviewed By: Pedro L. Rantes	072820	DATE

Volume(s) shown below were combined and diluted to (mL): 50.0
Note: All assigned values are anion concentrations.

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty (+/-) µg/mL	SDS Information (Solvent Safety Info. On Attached pg.)		
									CAS#	OSHA PEL (TWA)	LD50
1. Perfluoro-n-butanolic acid (linear)	99542	110419	0.02	1.00	0.004	50.2	1.00	0.01	375-22-4	N/A	N/A
2. Perfluoro-n-pentanolic acid	99543	110419	0.02	1.00	0.004	50.7	1.01	0.02	2706-90-3	N/A	N/A
3. Perfluorohexanolic acid	99199	010820	0.02	1.00	0.004	50.3	1.01	0.01	307-24-4	N/A	N/A
4. Perfluoroheptanolic acid	99197	071219	0.02	1.00	0.004	50.1	1.00	0.01	375-85-9	N/A	N/A
5. Perfluorooctanoic acid (branched)*	99202	021820	0.02	1.00	0.004	50.3	1.01	0.01	335-67-1	N/A	ipr-rel 189mg/kg
6. Perfluorononanolic acid	99200	110419	0.02	1.00	0.004	50.1	1.00	0.01	375-95-1	N/A	N/A
7. Perfluorodecanolic acid	99195	110419	0.02	1.00	0.004	50.1	1.00	0.01	335-76-2	N/A	ori-rel 57mg/kg
8. Perfluoroundecanolic acid	99205	110419	0.02	1.00	0.004	50.1	1.00	0.01	2058-94-8	N/A	N/A
9. Tricosulfurododecanolic acid	99196	010820	0.02	1.00	0.004	50.1	1.00	0.01	307-55-1	N/A	N/A
10. Perfluorotridecanolic acid	99204	110419	0.02	1.00	0.004	50.1	1.00	0.01	72829-94-8	N/A	N/A
11. Perfluorotetradecanolic acid	99203	120319	0.02	1.00	0.004	50.1	1.00	0.01	376-06-7	N/A	N/A
12. Perfluoro-1-octanesulfonamide	3677	FOSA04201	0.02	1.00	0.004	50.0	1.00	0.05	754-91-8	N/A	N/A
13. N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0119	0.02	1.00	0.004	50.0	1.00	0.05	00-00-0	N/A	N/A
14. N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEIFOSAA0819	0.02	1.00	0.004	50.0	1.00	0.05	00-00-0	N/A	N/A
15. Perfluorobutanesulfonic acid	99194	021820	0.02	1.00	0.004	50.2	1.00	0.01	375-73-5	N/A	N/A
16. Perfluoro-1-pentanesulfonic acid	99544	011420	0.02	0.98	0.004	51.3	1.00	0.02	830402-22-1	N/A	N/A
17. Perfluorohexanesulfonic acid (branched)*	99198	091219	0.02	1.00	0.004	50.6	1.01	0.01	355-46-4	N/A	N/A
18. Perfluoro-1-heptanesulfonic acid	3672	LPFHpS0120	0.021	1.05	0.004	47.6	1.00	0.05	375-92-8	N/A	N/A
19. Heptadecafluorooctanesulfonic acid (branched)*	99201	021820	0.02	1.00	0.004	50.2	1.00	0.01	1763-23-1	N/A	N/A
20. Perfluoro-1-nonanesulfonic acid	3957	LPFNS1119	0.021	1.05	0.004	46.0	1.01	0.05	98789-57-2	N/A	N/A
21. Perfluoro-1-decane sulfonic acid	3671	LPFDS0419	0.021	1.05	0.004	48.2	1.01	0.05	2808-15-7	N/A	N/A
22. 1H,1H,2H,2H-Perfluorohexane sulfonic acid	3955	42FTS1019	0.0214	1.07	0.004	46.7	1.00	0.05	27819-93-8	N/A	N/A
23. 1H,1H,2H,2H-Perfluorooctane sulfonic acid	3661	82FTS0919	0.021	1.05	0.004	47.4	1.00	0.05	27819-94-9	N/A	N/A
24. 1H,1H,2H,2H-Perfluorodecane sulfonic acid	3662	82FTS0520	0.021	1.05	0.004	47.9	1.01	0.05	27819-96-1	N/A	N/A
25. 2-(Heptafluoropropoxy)-2,3,3,3-tetrafluoropropionic acid	99668	071219	0.020	1.00	0.004	50.1	1.00	0.01	13252-13-6	N/A	N/A
26. 11-Chloroicosasulfuro-3-oxaundecane-1-sulfonic acid	4165	11CIPF3OUdS0320	0.021	1.06	0.004	47.1	1.00	0.05	83329-89-9	N/A	N/A
27. 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	4164	9CIPF3ONS0420	0.021	1.07	0.004	46.6	1.00	0.05	73606-19-6	N/A	N/A
28. Dodecafluoro-3H-4,8-dioxanonanolic acid (ADONA)	4103	NaDONA1119	0.021	1.06	0.004	47.1	1.00	0.05	958445-44-8	N/A	N/A
Perfluorooctanoic acid (linear)*	99202	021820	0.02	1.00	0.004	44.2	0.88	0.012	335-67-1	N/A	ipr-rel 189mg/kg
Perfluorooctanoic acid (branched isomer)*	99202	021820	0.02	1.00	0.004	6.0	0.12	0.002	335-67-1	N/A	ipr-rel 189mg/kg
Perfluorohexanesulfonic acid (linear)*	99198	091219	0.02	1.00	0.004	50.0	1.00	0.01	355-46-4	N/A	N/A
Perfluorohexanesulfonic acid (branched isomer)*	99198	091219	0.02	1.00	0.004	0.6	0.01	0.0002	355-46-4	N/A	N/A
Heptadecafluorooctanesulfonic acid (linear)*	99201	021820	0.02	1.00	0.004	38.2	0.76	0.01	1763-23-1	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	021820	0.02	1.00	0.004	7.5	0.15	0.002	1763-23-1	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	021820	0.02	1.00	0.004	4.0	0.08	0.001	1763-23-1	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	021820	0.02	1.00	0.004	0.5	0.010	0.0001	1763-23-1	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (linear)*	4162	brNMeFOSAA0119	0.02	1.00	0.004	34.2	0.68	0.03	2355-31-9	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0119	0.02	1.00	0.004	10.5	0.21	0.011	00-00-0	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0119	0.02	1.00	0.004	5.1	0.10	0.005	00-00-0	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0119	0.02	1.00	0.004	0.3	0.005	0.00026	00-00-0	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (linear)*	4163	brNEIFOSAA0819	0.02	1.00	0.004	36.2	0.72	0.04	2991-50-6	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEIFOSAA0819	0.02	1.00	0.004	8.7	0.17	0.009	00-00-0	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEIFOSAA0819	0.02	1.00	0.004	4.5	0.09	0.005	00-00-0	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEIFOSAA0819	0.02	1.00	0.004	0.6	0.012	0.0006	00-00-0	N/A	N/A

*Concentrations for branched and linear isomers are based on LCMS chromatographic analysis only.

A qualitative standard (Sect. 3.19) is available for PFOA that contains the linear and branched isomers (Wellington Labs, Cat. No. T-PFOA, or equivalent). This qualitative PFOA standard must be purchased and used to identify the retention times of the branched PFOA isomers, but the linear only PFOA standard must be used for quantitation (Sect. 12.2) until a quantitative PFOA standard containing the branched and linear isomers becomes commercially available.1

• The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
 • Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
 • Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
 • All Standards, after opening ampule, should be stored with cap tight and under appropriate laboratory conditions.
 • Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).



It can be done

BDO Id: 200914-01

Reagent Receipt Report

Approved: Authorized

Name: PFOA DOD **Received:** 9/14/2020
Vendor: ABSOLUTE STANDARDS **Custodian:** Schumitz, Matt
Catalogue No: 64029 **Expires:** 8/26/2025
Type: Solution **Consumed:** _____
Lot No: 082620 **Stored In:** LC Laboratory - F0111
Quantity: 5 ea ML **% Moisture:** _____
Description: PFOA DOD

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:
11-chloroeicosafuoro-3-oxaundecan	763051-92-9	1.0000	100.00	--	--	<input type="checkbox"/>			
1H,1H,2H,2H-Perfluorodecane sulfon	39108-34-4	1.0100	100.00	--	--	<input type="checkbox"/>			
1H,1H,2H,2H-Perfluorohexane sulfon	757124-72-4	1.0000	100.00	--	--	<input type="checkbox"/>			
1H,1H,2H,2H-Perfluorooctane sulfon	27619-97-2	1.0000	100.00	--	--	<input type="checkbox"/>			
9-chlorohexadecafluoro-3-oxanonane	756426-58-1	1.0000	100.00	--	--	<input type="checkbox"/>			
Adona	919005-14-4	1.0000	100.00	--	--	<input type="checkbox"/>			
Hexafluoropropylene oxide dimer aci	13252-13-6	1.0000	100.00	--	--	<input type="checkbox"/>			
N-ethylperfluoro-octanesulfonamidoa	2991-50-6	1.0000	100.00	--	--	<input type="checkbox"/>			
N-methylperfluoro-1-octanesulfonami	2355-31-9	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-butanefluoride	375-73-5	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-decanesulfonate	335-77-3	1.0100	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-heptanesulfonate	375-92-8	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-hexanesulfonate	355-46-4	1.0100	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-nonanesulfonate	68259-12-1	1.0100	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-octanesulfonamide	754-91-6	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-octanesulfonate	1763-23-1	1.0100	100.00	--	--	<input type="checkbox"/>			
perfluoro-1-pentanesulfonate	2706-91-4	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-butanoic Acid	375-22-4	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-decanoic Acid	335-76-2	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-dodecanoic acid	307-55-1	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-heptanoic Acid	375-85-9	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-hexanoic acid	307-24-4	1.0100	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-octanoic Acid	335-67-1	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluorononanoic Acid	375-95-1	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-pentanoic acid	2706-90-3	1.0100	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-tetradecanoic acid	376-06-7	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-tridecanoic acid	72629-94-8	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-undecanoic acid	2058-94-8	1.0000	100.00	--	--	<input type="checkbox"/>			

Total Analytes: 28

Notes:

Approved by: _____ **Approved on:** _____
Authorized by: _____ **Authorized on:** _____



CERTIFIED WEIGHT REPORT

Part Number: **64029**
Lot Number: **082620**
Description: **PFOA - DOD**
28 components
Expiration Date: **082625**
Recommended Storage: **Freezer (0 °C)**
Nominal Concentration (µg/mL): **1.0**
NIST Test ID#: **23060**

Solvent(s):
Methanol (1 mM KOH) **042920 (98%)**
2-Propanol **23214 (2%)**

Lot#
042920 (98%)
23214 (2%)

5E-05 Balance Uncertainty
0.007 Flask Uncertainty

Formulated By: *Benson Cran* **082620**
DATE

Reviewed By: *Pedro L. Rentas* **082620**
DATE

Volume(s) shown below were combined and diluted to (mL):

Note: All assigned values are anion concentrations.

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty (+/-) µg/mL	SDS Information (Solvent Safety Info. On Attached pg.)		
									CAS#	OSHA PEL (TWA)	LD50
1. Perfluoro-n-butyric acid (linear)	99542	110419	0.02	1.00	0.004	50.2	1.00	0.01	375-22-4	N/A	N/A
2. Perfluoro-n-pentanoic acid	99543	110419	0.02	1.00	0.004	50.7	1.01	0.02	2706-90-3	N/A	N/A
3. Perfluorohexanoic acid	99199	010820	0.02	1.00	0.004	50.3	1.01	0.01	307-24-4	N/A	N/A
4. Perfluorooctanoic acid (linear)*	99202	021820	0.02	1.00	0.004	50.1	1.00	0.01	375-85-9	N/A	N/A
5. Perfluorooctanoic acid (branched)*	99202	021820	0.02	1.00	0.004	50.3	1.01	0.01	335-67-1	N/A	or-rel 180mg/kg
6. Perfluorononanoic acid	99200	110419	0.02	1.00	0.004	50.1	1.00	0.01	375-95-1	N/A	N/A
7. Perfluorodecanoic acid	99195	110419	0.02	1.00	0.004	50.1	1.00	0.01	335-76-2	N/A	or-rel 57mg/kg
8. Perfluoroundecanoic acid	99205	110419	0.02	1.00	0.004	50.1	1.00	0.01	2058-94-8	N/A	N/A
9. Tricosulfurododecanoic acid	99196	010820	0.02	1.00	0.004	50.1	1.00	0.01	307-55-1	N/A	N/A
10. Perfluorotridecanoic acid	99204	110419	0.02	1.00	0.004	50.1	1.00	0.01	72629-94-8	N/A	N/A
11. Perfluorotetradecanoic acid	99203	120319	0.02	1.00	0.004	50.1	1.00	0.01	376-06-7	N/A	N/A
12. Perfluoro-1-octanesulfonamide	3677	FOSA04201	0.02	1.00	0.004	50.0	1.00	0.05	754-91-6	N/A	N/A
13. N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brMeFOSAA1119	0.02	1.00	0.004	50.0	1.00	0.05	00-00-0	N/A	N/A
14. N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEFOSAA0819	0.02	1.00	0.004	50.0	1.00	0.05	00-00-0	N/A	N/A
15. Perfluorobutanesulfonic acid	99194	021820	0.02	1.00	0.004	50.2	1.00	0.01	375-73-5	N/A	N/A
16. Perfluoro-1-pentanesulfonic acid	99544	011420	0.02	0.98	0.004	51.3	1.00	0.02	630402-22-1	N/A	N/A
17. Perfluorohexanesulfonic acid (branched)*	99198	081920	0.02	1.00	0.004	50.2	1.00	0.01	355-46-4	N/A	N/A
18. Perfluoro-1-heptanesulfonic acid	3672	LPFHs0120	0.021	1.05	0.004	47.6	1.00	0.05	375-92-8	N/A	N/A
19. Heptadecafluorooctanesulfonic acid (branched)*	99201	021820	0.02	1.00	0.004	50.2	1.00	0.01	1783-23-1	N/A	N/A
20. Perfluoro-1-nonanesulfonic acid	3957	LFFNS1119	0.021	1.05	0.004	48.0	1.01	0.05	98789-57-2	N/A	N/A
21. Perfluoro-1-decane sulfonic acid	3671	LFFDS1119	0.021	1.05	0.004	48.2	1.01	0.05	2806-15-7	N/A	N/A
22. 1H,1H,2H,2H-Perfluorohexane sulfonic acid	3955	42FTS0720	0.0214	1.07	0.004	46.7	1.00	0.05	27619-93-8	N/A	N/A
23. 1H,1H,2H,2H-Perfluorooctane sulfonic acid	3661	62FTS0420	0.021	1.05	0.004	47.4	1.00	0.05	27819-94-9	N/A	N/A
24. 1H,1H,2H,2H-Perfluorodecane sulfonic acid	3662	82FTS0520	0.021	1.05	0.004	47.9	1.01	0.05	27619-96-1	N/A	N/A
25. 2-(Heptafluoropropoxy)-2,3,3,3-tetrafluoropropionic acid	99966	061820	0.020	1.00	0.004	50.1	1.00	0.01	13252-13-6	N/A	N/A
26. 11-Chlorooctadecafluoro-3-oxaundecane-1-sulfonic acid	4165	11ClPF3OudS0320	0.021	1.06	0.004	47.1	1.00	0.05	83329-89-9	N/A	N/A
27. 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	4164	9ClPF3ONS0420	0.021	1.07	0.004	46.6	1.00	0.05	72606-19-6	N/A	N/A
28. Dodecafluoro-3H-4,8-dioxanonanoic acid (ADONA)	4103	NaDONA1119	0.021	1.06	0.004	47.1	1.00	0.05	958445-44-8	N/A	N/A
Perfluorooctanoic acid (linear)*	99202	021820	0.02	1.00	0.004	44.2	0.88	0.012	335-67-1	N/A	or-rel 180mg/kg
Perfluorooctanoic acid (branched isomer)*	99202	021820	0.02	1.00	0.004	6.0	0.12	0.002	335-67-1	N/A	or-rel 180mg/kg
Perfluorohexanesulfonic acid (linear)*	99198	081920	0.02	1.00	0.004	49.6	0.99	0.01	355-46-4	N/A	N/A
Perfluorohexanesulfonic acid (branched isomer)*	99198	081920	0.02	1.00	0.004	0.6	0.01	0.0002	355-46-4	N/A	N/A
Heptadecafluorooctanesulfonic acid (linear)*	99201	021820	0.02	1.00	0.004	38.2	0.76	0.01	1783-23-1	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	021820	0.02	1.00	0.004	7.5	0.15	0.002	1783-23-1	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	021820	0.02	1.00	0.004	4.0	0.08	0.001	1783-23-1	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	021820	0.02	1.00	0.004	0.5	0.010	0.0001	1783-23-1	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (linear)*	4162	brMeFOSAA0119	0.02	1.00	0.004	34.2	0.68	0.03	2355-31-9	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brMeFOSAA0119	0.02	1.00	0.004	10.5	0.21	0.011	00-00-0	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brMeFOSAA0119	0.02	1.00	0.004	5.1	0.10	0.005	00-00-0	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brMeFOSAA0119	0.02	1.00	0.004	0.3	0.005	0.00026	00-00-0	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (linear)*	4163	brNEFOSAA0819	0.02	1.00	0.004	36.2	0.72	0.04	2991-50-6	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEFOSAA0819	0.02	1.00	0.004	6.7	0.17	0.009	00-00-0	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEFOSAA0819	0.02	1.00	0.004	4.5	0.09	0.005	00-00-0	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	brNEFOSAA0819	0.02	1.00	0.004	0.6	0.012	0.0006	00-00-0	N/A	N/A

*Concentrations for branched and linear isomers are based on LCMS chromatographic analysis only.

A qualitative standard (Sect. 3.19) is available for PFOA that contains the linear and branched isomers (Wellington Labs, Cat. No. T-PFOA, or equivalent). This qualitative PFOA standard must be purchased and used to identify the retention times of the branched PFOA isomers, but the linear only PFOA standard must be used for quantitation (Sect. 12.2) until a quantitative PFOA standard containing the branched and linear isomers becomes commercially available. 1

- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certified to ± 0.25% of the stated value, unless otherwise stated.
- All standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kaye, C.E., "Guidelines for Establishing and Expressing the Uncertainty of NIST Measurement Results," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).



It can be done

BDO Id: 201006-07

Reagent Receipt Report

Approved: Authorized

Name: PFOA DOD **Received:** 10/6/2020
Vendor: ABSOLUTE STANDARDS **Custodian:** Bailey, Kevin
Catalogue No: 64029 **Expires:** 7/28/2025
Type: Solution **Consumed:** _____
Lot No: 072820 **Stored In:** LC Laboratory - F0111
Quantity: 5 ea ml **% Moisture:** _____
Description: PFOA DOD

Analyte:	CAS No:	Concentration (ug/mL):	Purity:	Density:	Density Units:	Cert	Cert Val:	Lower Limit:	Upper Limit:
11-chloroeicosafuoro-3-oxaundecan	763051-92-9	1.0000	100.00	--	--	<input type="checkbox"/>			
1H,1H,2H,2H-Perfluorodecane sulfon	39108-34-4	1.0100	100.00	--	--	<input type="checkbox"/>			
1H,1H,2H,2H-Perfluorohexane sulfon	757124-72-4	1.0000	100.00	--	--	<input type="checkbox"/>			
1H,1H,2H,2H-Perfluorooctane sulfon	27619-97-2	1.0000	100.00	--	--	<input type="checkbox"/>			
9-chlorohexadecafluoro-3-oxanonane	756426-58-1	1.0000	100.00	--	--	<input type="checkbox"/>			
Adona	919005-14-4	1.0000	100.00	--	--	<input type="checkbox"/>			
Hexafluoropropylene oxide dimer aci	13252-13-6	1.0000	100.00	--	--	<input type="checkbox"/>			
N-ethylperfluoro-octanesulfonamidoa	2991-50-6	1.0000	100.00	--	--	<input type="checkbox"/>			
N-methylperfluoro-1-octanesulfonami	2355-31-9	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-butanefluoride	375-73-5	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-decanesulfonate	335-77-3	1.0100	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-heptanesulfonate	375-92-8	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-hexanesulfonate	355-46-4	1.0100	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-nonanesulfonate	68259-12-1	1.0100	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-octanesulfonamide	754-91-6	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-1-octanesulfonate	1763-23-1	1.0100	100.00	--	--	<input type="checkbox"/>			
perfluoro-1-pentanesulfonate	2706-91-4	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-butanoic Acid	375-22-4	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-decanoic Acid	335-76-2	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-dodecanoic acid	307-55-1	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-heptanoic Acid	375-85-9	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-hexanoic acid	307-24-4	1.0100	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-octanoic Acid	335-67-1	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluorononanoic Acid	375-95-1	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-pentanoic acid	2706-90-3	1.0100	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-tetradecanoic acid	376-06-7	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-tridecanoic acid	72629-94-8	1.0000	100.00	--	--	<input type="checkbox"/>			
Perfluoro-n-undecanoic acid	2058-94-8	1.0000	100.00	--	--	<input type="checkbox"/>			

Total Analytes: 28

Notes:

Approved by: _____ **Approved on:** _____
Authorized by: _____ **Authorized on:** _____



201006-07

CERTIFIED WEIGHT REPORT

Part Number: 64029
Lot Number: 072820
Description: PFOA - DOD
28 components

Expiration Date: 072825
Recommended Storage: Freezer (0 °C)
Nominal Concentration (µg/mL): 1.0
NIST Test ID#: 23060

Solvent(s): Methanol (1 mM KOH)
2-Propanol

Lot#
042920 (98%)
23214 (2%)

5E-05 Balance Uncertainty
0.007 Flask Uncertainty

Formulated By: Benson Chan	DATE	072820
Reviewed By: Pedro L. Rentas	DATE	072820

Volume(s) shown below were combined and diluted to (mL): 50.0
Note: All assigned values are anion concentrations.

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Initial Conc. (µg/mL)	Final Conc. (µg/mL)	Expanded Uncertainty (+/-) µg/mL	SDS Information (Solvent Safety Info. On Attached pg.)		
									CAS#	OSHA PEL (TWA)	LD50
1. Perfluoro-n-butanolic acid (linear)	99542	110419	0.02	1.00	0.004	50.2	1.00	0.01	375-22-4	N/A	N/A
2. Perfluoro-n-pentanoic acid	99543	110419	0.02	1.00	0.004	50.7	1.01	0.02	2708-90-3	N/A	N/A
3. Perfluorohexanoic acid	99199	010820	0.02	1.00	0.004	50.3	1.01	0.01	307-24-4	N/A	N/A
4. Perfluoroheptanoic acid	99197	071219	0.02	1.00	0.004	50.1	1.00	0.01	375-85-9	N/A	N/A
5. Perfluorooctanoic acid (branched)*	99202	021820	0.02	1.00	0.004	50.3	1.01	0.01	335-87-1	N/A	lpr-rat 189mg/kg
6. Perfluorononanoic acid	99200	110419	0.02	1.00	0.004	50.1	1.00	0.01	375-95-1	N/A	N/A
7. Perfluorodecanoic acid	99195	110419	0.02	1.00	0.004	50.1	1.00	0.01	335-78-2	N/A	ort-rat 57mg/kg
8. Perfluoroundecanoic acid	99205	110419	0.02	1.00	0.004	50.1	1.00	0.01	2058-94-6	N/A	N/A
9. Tricosulfurododecanoic acid	99198	010820	0.02	1.00	0.004	50.1	1.00	0.01	307-55-1	N/A	N/A
10. Perfluorotridecanoic acid	99204	110419	0.02	1.00	0.004	50.1	1.00	0.01	72829-94-8	N/A	N/A
11. Perfluorotetradecanoic acid	99203	120319	0.02	1.00	0.004	50.1	1.00	0.01	378-08-7	N/A	N/A
12. Perfluoro-1-octanesulfonamide	3677	FOSA04201	0.02	1.00	0.004	50.0	1.00	0.05	754-91-8	N/A	N/A
13. N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4182	brNmFOSAA0119	0.02	1.00	0.004	50.0	1.00	0.05	00-00-0	N/A	N/A
14. N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4183	brNEIFOSAA0819	0.02	1.00	0.004	50.0	1.00	0.05	00-00-0	N/A	N/A
15. Perfluorobutanesulfonic acid	99194	021820	0.02	1.00	0.004	50.2	1.00	0.01	375-73-5	N/A	N/A
16. Perfluoro-1-pentanesulfonic acid	99544	011420	0.02	0.98	0.004	51.3	1.00	0.02	830402-22-1	N/A	N/A
17. Perfluorohexanesulfonic acid (branched)*	99198	091219	0.02	1.00	0.004	50.6	1.01	0.01	355-48-4	N/A	N/A
18. Perfluoro-1-heptanesulfonic acid	3672	LPFHPS0120	0.021	1.05	0.004	47.8	1.00	0.05	375-92-8	N/A	N/A
19. Heptadecalluoroctanesulfonic acid (branched)*	99201	021820	0.02	1.00	0.004	50.2	1.00	0.01	1783-23-1	N/A	N/A
20. Perfluoro-1-nonanesulfonic acid	3957	LPFN51119	0.021	1.05	0.004	48.0	1.01	0.05	98789-57-2	N/A	N/A
21. Perfluoro-1-decanesulfonic acid	3671	LPFDS0419	0.021	1.05	0.004	48.2	1.01	0.05	2808-15-7	N/A	N/A
22. 1H,1H,2H,2H-Perfluorohexane sulfonic acid	3955	42FTS1019	0.0214	1.07	0.004	48.7	1.00	0.05	27819-93-8	N/A	N/A
23. 1H,1H,2H,2H-Perfluorooctane sulfonic acid	3681	82FTS0919	0.021	1.05	0.004	47.4	1.00	0.05	27819-94-9	N/A	N/A
24. 1H,1H,2H,2H-Perfluorodecane sulfonic acid	3682	82FTS0520	0.021	1.05	0.004	47.9	1.01	0.05	27819-98-1	N/A	N/A
25. 2-(Heptafluoropropoxy)-2,3,3,3-tetrafluoropropionic acid	99668	071219	0.020	1.00	0.004	50.1	1.00	0.01	13252-13-6	N/A	N/A
26. 11-Chloroicosasulfuro-3-oxaundecane-1-sulfonic acid	4185	11CIPF3OUdS0320	0.021	1.06	0.004	47.1	1.00	0.05	83329-89-9	N/A	N/A
27. 9-Chlorohexadecasulfuro-3-oxanonane-1-sulfonic acid	4184	9CIPF3ONS0420	0.021	1.07	0.004	46.6	1.00	0.05	73608-19-6	N/A	N/A
28. Dodecalsulfuro-3H-4,8-dioxanonanoic acid (ADONA)	4103	NaDONA1119	0.021	1.06	0.004	47.1	1.00	0.05	958445-44-8	N/A	N/A
Perfluorooctanoic acid (linear)*	99202	021820	0.02	1.00	0.004	44.2	0.88	0.012	335-87-1	N/A	lpr-rat 189mg/kg
Perfluorooctanoic acid (branched isomer)*	99202	021820	0.02	1.00	0.004	6.0	0.12	0.002	335-87-1	N/A	lpr-rat 189mg/kg
Perfluorohexanesulfonic acid (linear)*	99198	091219	0.02	1.00	0.004	50.0	1.00	0.01	355-48-4	N/A	N/A
Perfluorohexanesulfonic acid (branched isomer)*	99198	091219	0.02	1.00	0.004	0.6	0.01	0.0002	355-48-4	N/A	N/A
Heptadecalluoroctanesulfonic acid (linear)*	99201	021820	0.02	1.00	0.004	38.2	0.78	0.01	1783-23-1	N/A	N/A
Heptadecalluoroctanesulfonic acid (branched isomer)*	99201	021820	0.02	1.00	0.004	7.5	0.15	0.002	1783-23-1	N/A	N/A
Heptadecalluoroctanesulfonic acid (branched isomer)*	99201	021820	0.02	1.00	0.004	4.0	0.08	0.001	1783-23-1	N/A	N/A
Heptadecalluoroctanesulfonic acid (branched isomer)*	99201	021820	0.02	1.00	0.004	0.5	0.010	0.0001	1783-23-1	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (linear)*	4182	brNmFOSAA0119	0.02	1.00	0.004	34.2	0.68	0.03	2355-31-9	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4182	brNmFOSAA0119	0.02	1.00	0.004	10.5	0.21	0.011	00-00-0	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4152	brNmFOSAA0119	0.02	1.00	0.004	5.1	0.10	0.005	00-00-0	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4182	brNmFOSAA0119	0.02	1.00	0.004	0.3	0.005	0.00026	00-00-0	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (linear)*	4183	brNEIFOSAA0819	0.02	1.00	0.004	38.2	0.72	0.04	2991-50-6	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4183	brNEIFOSAA0819	0.02	1.00	0.004	8.7	0.17	0.009	00-00-0	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4183	brNEIFOSAA0819	0.02	1.00	0.004	4.5	0.09	0.005	00-00-0	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4183	brNEIFOSAA0819	0.02	1.00	0.004	0.8	0.012	0.0006	00-00-0	N/A	N/A

*Concentrations for branched and linear isomers are based on LCMS chromatographic analysis only.

A qualitative standard (Sect. 3.19) is available for PFOA that contains the linear and branched isomers (Wellington Labs, Cat. No. T-PFOA, or equivalent). This qualitative PFOA standard must be purchased and used to identify the retention times of the branched PFOA isomers, but the linear only PFOA standard must be used for quantitation (Sect. 1.2.2) until a quantitative PFOA standard containing the branched and linear isomers becomes commercially available.1

- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- All standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

ACCREDITATIONS

Accrediting Authority	Laboratory ID
U.S. Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP)	91667
State of Florida Department of Health	E87856
State of New York Department of Health	12105
State of Washington Department of Ecology	C1050
State of California	3045
Commonwealth of Massachusetts	E87856
State of Maine	MA00056
State of Vermont	VT 87856
State of New Hampshire	2137
Commonwealth of Pennsylvania Department of Environmental Protection	68-05687
State of Alaska Department of Environmental Conservation	19-005
State of Rhode Island	E87856

Current certificates and lists of accredited parameters are available upon request.



Sample Preparation



It can be done

**BATTELLE - NORWELL OPERATIONS
SAMPLE PREPARATION RECORDS**

<u>Project Title(s)</u>	<u>Project No.(s)</u>
CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10	100142218
20-1481	
CTO-4532: PFAS in Water	
GW	
SOP Numbers (see workplan for modifications)	
ExtractionSOP No.	5-370

This Batch Contains The Following Samples:
DB386PB-FS DB387LCS-FS G1773-FS1

Laboratory Preparation Records
COMPLETE AND VALIDATED

Prep Task Leader: Kelsey Harnden

Approved By:	Date	Initials
Denise Schumitz	11/17/2020	DMS



It can be done

**BATTELLE - NORWELL OPERATIONS
SAMPLE IDENTIFICATION PAGE**

Project Title(s)

CTO-4532: NRL Chesapeake Bay Detachment (NRL-
CBD) Site 10

Project No.(s)

100142218

20-1481

CTO-4532: PFAS in Water

GW

Sample ID	Description
DB386PB-FS	Procedural Blank
DB387LCS-FS	Laboratory Control Sample
G1773-FS1	CBD-AOA-MW18-1020

Samples Assigned By:

Denise Schumitz

Date : November 13, 2020

Comments: Re-Extract of 20-1321



It can be done

**BATTELLE - NORWELL OPERATIONS
SAMPLE CUSTODY LOG**

Project Title(s)

CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10

Project No.(s)

100142218

20-1481

**CTO-4532: PFAS in Water
GW**

Requested On/By:	11/16/2020 KH	Purpose:	Sample Preparation
Relinquished On/By:	11/16/2020 BTM	Last Activity:	Transfer

<p>Accepted On/By: 11/16/2020 KH</p> <p>Stored In Facility: Sample Preparation</p> <p>Stored Until:</p> <p>Stored Comment: NA</p>	<p>Returned On/To:</p> <p>Returned To Facility:</p> <p>Returned Comment: NA</p>
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No.	BDO-ID:	Ctrs	*	Condition:	Custody Comment:
1	G1773	2	C	Consumed	NA
Total Samples		1		* "C" = Consumed Container	



It can be done

**BATTELLE - NORWELL OPERATIONS
LIQUID SAMPLE ID FORM**

Project Title(s)

CTO-4532: NRL Chesapeake Bay Detachment (NRL-
CBD) Site 10

Project No.(s)

100142218

20-1481

**CTO-4532: PFAS in Water
GW**

Sample ID	Description	Volume (mL)	Bottles	*	Date Initials
DB386PB-FS	Procedural Blank	260.0	NA	--	11/16/20 TN
DB387LCS-FS	Laboratory Control Sample	265.0	NA	--	11/16/20 TN
G1773-FS1	CBD-AOA-MW18-1020	240.0	2	C	11/16/20 TN

Comments:

Samples Assigned By:

Denise Schumitz

Date : November 13, 2020

* - "C" = Sample is Consumed



It can be done

**BATTELLE - NORWELL OPERATIONS
SURROGATE SPIKE FORM**

Project Title(s)

CTO-4532: NRL Chesapeake Bay Detachment (NRL-
CBD) Site 10

Project No.(s)

100142218

20-1481

CTO-4532: PFAS in Water

GW

Sample ID	Standard ID	Type	Vial No.	Vol Added (uL)	Date Spiked/ Spiked By	Witn'd By	Comment
DB386PB-FS	LE39	SIS	3	125	11/16/20 KH	TN	NA
DB387LCS-FS	LE39	SIS	3	125	11/16/20 KH	TN	NA
DB387LCS-FS	LE49	LCS/MS	1	100	11/16/20 KH	TN	NA
G1773-FS1	LE39	SIS	3	125	11/16/20 KH	TN	NA

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
LE39	Pipette	B814657482
LE49	Pipette	B814657482



It can be done

BATTELLE - NORWELL OPERATIONS SAMPLE EXTRACTION FORM

Project Title(s)

CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10

Project No.(s)

100142218

20-1481

**CTO-4532: PFAS in Water
GW**

Sample ID	1st Extraction	2nd Extraction	3rd Extraction	Conc. ID	Turbo °C	Turbo PSI	KD °C	Comment
DB386PB-FS	11/16/20 KH	NA	NA	KDVAP_3	NA	NA	NA	NA
DB387LCS-FS	11/16/20 KH	NA	NA	KDVAP_3	NA	NA	NA	NA
G1773-FS1	11/16/20 KH	NA	NA	KDVAP_3	NA	NA	NA	NA

Solvents/Reagent Preparations:

Name	ID	Expires	Lot No	Procedure	Comments
pH Indicator Strips 0-14	201111-01	11/11/25	10D4191	NA	
0.5% NH3 in Methanol (w/v)	RP-201116-4	11/16/20	A0409799	Per 100 mL, 4.25 mL ammonia solution brought to 100 mL with methanol	
0.5% NH3 in Methanol (w/v)	RP-201116-4	11/16/20	202381	Per 100 mL, 4.25 mL ammonia solution brought to 100 mL with methanol	
Pre-packed SPE Column	RP-201116-7	11/16/20	S308-0116/S20-004413	Pre-packed SPE Column	

Solvents/Reagents:

Name	Lot No	Comments
Methanol HPLC (201109-01)	202381	



It can be done

**BATTELLE - NORWELL OPERATIONS
EXTRACT CLEANUP FORM**

Project Title(s)

CTO-4532: NRL Chesapeake Bay Detachment (NRL-
CBD) Site 10

Project No.(s)

100142218

20-1481

**CTO-4532: PFAS in Water
GW**

Extract Id	Date	Init.	Comments
DB386PB-FS(0)	11/16/20	AW	NA
DB387LCS-FS(0)	11/16/20	AW	NA
G1773-FS1(0)	11/16/20	AW	NA

Cleanup:

Envi-Carb

Reagents:

Reagent Prep	Name	Expires	Lot No	Procedure
191209-01	Supelclean ENVI- Carb SPE Bulk Packing	12/09/24	122395	NA



It can be done

**BATTELLE - NORWELL OPERATIONS
EXTRACT CLEANUP FORM**

Project Title(s)

CTO-4532: NRL Chesapeake Bay Detachment (NRL-
CBD) Site 10

Project No.(s)

100142218

20-1481

**CTO-4532: PFAS in Water
GW**

Extract Id	Date	Init.	Comments
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It can be done

BATTELLE - NORWELL OPERATIONS INTERNAL STANDARD SPIKING FORM

Project Title(s)

CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10

Project No.(s)

100142218

20-1481**CTO-4532: PFAS in Water****GW****(N/A Fraction)**

Extract Id	Extr. Vol. (uL)	Added (uL)	Std. Id	Accm. (uL)	Vial No.	Pre Inj. Vol. (uL)^	Final Dilution *	Date Spiked/ Spiked By	Witn'd By
DB386PB-FS(0)	875	125	LE40	125	4	1000	1.000	11/17/20 AW	RPK
DB387LCS-FS(0)	875	125	LE40	125	4	1000	1.000	11/17/20 AW	RPK
G1773-FS1(0)	875	125	LE40	125	4	1000	1.000	11/17/20 AW	RPK
G1773-FS1-D(3)	900	100	LE40	125	4	1000	5.000	11/17/20 KB	RPK
G1773-FS1-D(5)	925	75	LE40	125	4	1000	12.500	11/17/20 KB	RPK
G1773-FS1-D(7)	925	75	LE40	125	4	1000	31.250	11/17/20 KB	RPK
G1773-FS1-D(9)	900	100	LE40	125	4	1000	156.250	11/17/20 KB	RPK

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
LE39	Pipette	B814657482
LE40	Pipette	B814657482

* - Final Dilution is any HPLC, dilutions, or other manipulation

^ - Pre Injection Volume (PIV) includes any RIS spikes.



It can be done

BATTELLE - NORWELL OPERATIONS EXTRACT SPIKE FORM

Project Title(s)

CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10

Project No.(s)

100142218

20-1481

CTO-4532: PFAS in Water

GW

Extract Id	DF	Std. ID	Type	Vial No.	Vol. Added (uL)	Conc (ug/mL)	Added (ng)	Date Spiked/ Spiked By	Witn'd By
G1773-FS1-D(3)	5	LE39	SIS	4	100	0	0	11/17/20 KB	RPK
G1773-FS1-D(5)	12.5	LE39	SIS	4	75	0	0	11/17/20 KB	RPK
G1773-FS1-D(7)	31.25	LE39	SIS	4	75	0	0	11/17/20 KB	RPK
G1773-FS1-D(9)	156.25	LE39	SIS	4	100	0	0	11/17/20 KB	RPK

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
LE39	Pipette	B814657482
LE40	Pipette	B814657482



It can be done

BATTELLE - NORWELL OPERATIONS PREPARATION EXTRACT SPLIT FORM

Project Title(s)

CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10

Project No.(s)

100142218

20-1481**CTO-4532: PFAS in Water****GW**

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
DB386PB-FS	0	--	11/16/2020 11:45:00 AM	NA		NA	NA	1.000	1.000	11/16/20 KH
DB387LCS-FS	0	--	11/16/2020 11:45:00 AM	NA		NA	NA	1.000	1.000	11/16/20 KH
G1773-FS1	0	C	11/16/2020 11:45:00 AM	NA		NA	NA	1.000	1.000	11/16/20 AW
G1773-FS1	2	--	11/17/2020 9:12:00 AM	G1773-FS1	0	1000	800	1.250	1.250	11/17/20 KB
G1773-FS1-D	3	C	11/17/2020 9:12:00 AM	G1773-FS1	0	1000	200	5.000	5.000	11/17/20 KB
G1773-FS1-D	4	--	11/17/2020 9:14:00 AM	G1773-FS1-D	3	1000	600	1.667	8.333	11/17/20 KB
G1773-FS1-D	5	C	11/17/2020 9:14:00 AM	G1773-FS1-D	3	1000	400	2.500	12.500	11/17/20 KB
G1773-FS1-D	6	--	11/17/2020 9:16:00 AM	G1773-FS1-D	5	1000	600	1.667	20.833	11/17/20 KB
G1773-FS1-D	7	C	11/17/2020 9:16:00 AM	G1773-FS1-D	5	1000	400	2.500	31.250	11/17/20 KB
G1773-FS1-D	8	--	11/17/2020 9:17:00 AM	G1773-FS1-D	7	1000	800	1.250	39.063	11/17/20 KB
G1773-FS1-D	9	--	11/17/2020 9:17:00 AM	G1773-FS1-D	7	1000	200	5.000	156.250	11/17/20 KB

Total Oil = [Sample Volume (uL) / Aliquot Volume (uL)] * [Aliquot Weight (mg)]

Dilution Factor = [Sample Volume (uL) / Aliquot Volume (uL)] * Prior Dilution Factor

* - "C" = Extract is Consumed



It can be done

**BATTELLE - NORWELL OPERATIONS
EXTRACT - INSTRUMENT FACILITY CUSTODY PAGE**

Project Title(s)

CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10

Project No.(s)

100142218

20-1481

**CTO-4532: PFAS in Water
GW**

Purpose: LC-MS/MS TRANSFER		Last Activity: Prep->Inst	
Relinquished On/By: Nov 17 2020 9:54AM KB		Received On/By: Nov 17 2020 9:54AM DMS	
Relinquished From: Sample Preparation: NA		Received Location: LC Laboratory: NA	
Relinquish Comment: NA		Received Comment: NA	

No.	BDO-ID:	PIV:	DF:	Condition:	Custody Comment:
1	DB386PB-FS(0)	1000	1	Intact	NA
2	DB387LCS-FS(0)	1000	1	Intact	NA
3	G1773-FS1(0)	1000	1	Intact	NA
4	G1773-FS1-D(3)	1000	5	Intact	NA
5	G1773-FS1-D(5)	1000	12.5	Intact	NA
6	G1773-FS1-D(7)	1000	31.25	Intact	NA
7	G1773-FS1-D(9)	1000	156.25	Intact	NA

Total Extracts: 7



It can be done

BATTELLE - NORWELL OPERATIONS SAMPLE SPECIFIC COMMENTS

Project Title(s)

CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10

Project No.(s)

100142218

20-1481**CTO-4532: PFAS in Water****GW**

Sample ID:	Comment:	Date/Initials:
DB386PB-FS	Extraction started at 11:45 AM, manifold 6, ended at 12:40 PM	11/16/20 KH
DB386PB-FS	Sample was fortified per project plan, poured into a centrifuge bottle and centrifuged at 3500 RPM for 5 minutes. Sample was then poured back into original container for extraction.	11/16/20 AW
DB387LCS-FS	Extraction started at 11:45 AM, manifold 6, ended at 12:39 PM	11/16/20 KH
DB387LCS-FS	Sample was fortified per project plan, poured into a centrifuge bottle and centrifuged at 3500 RPM for 5 minutes. Sample was then poured back into original container for extraction.	11/16/20 AW
G1773-FS1	Extraction started at 11:45 AM, manifold 4, ended 12:43 PM	11/16/20 AW
G1773-FS1	Sample was fortified per project plan, poured into a centrifuge bottle and centrifuged at 3500 RPM for 5 minutes. Sample was then poured back into original container for extraction.	11/16/20 AW



It can be done

**BATTELLE - NORWELL OPERATIONS
MISCELLANEOUS DOCUMENTATION FORM**

Project Title(s)

CTO-4532: NRL Chesapeake Bay Detachment (NRL-
CBD) Site 10

Project No.(s)

100142218

20-1481

**CTO-4532: PFAS in Water
GW**

Entered By:

On:

Task Leader Approval:

On:

SupervisorApproval:

On:

PM Approval:

On:

Analytical Calibrations



Sequence Report

Created with Analyst Reporter
Printed: 17/11/2020 2:28:37 PM

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
2	LE52	L1	11/16/2020 8:07:30 PM	5-369.dam	AE_11162020_5-369.wiff
3	LE53	L2	11/16/2020 8:17:56 PM	5-369.dam	AE_11162020_5-369.wiff
4	LE54	L3	11/16/2020 8:28:24 PM	5-369.dam	AE_11162020_5-369.wiff
5	LE55	L4	11/16/2020 8:38:51 PM	5-369.dam	AE_11162020_5-369.wiff
6	LE56	L5	11/16/2020 8:49:18 PM	5-369.dam	AE_11162020_5-369.wiff
7	LE57	L6	11/16/2020 8:59:46 PM	5-369.dam	AE_11162020_5-369.wiff
8	LE58 IB	Instrument Blank	11/16/2020 9:10:14 PM	5-369.dam	AE_11162020_5-369.wiff
9	LE59 ICC	ICC	11/16/2020 9:20:41 PM	5-369.dam	AE_11162020_5-369.wiff
10	LE25 Branch	Branch Standard	11/16/2020 9:31:09 PM	5-369.dam	AE_11162020_5-369.wiff
11	MeOH		11/16/2020 9:41:36 PM	5-369.dam	AE_11162020_5-369.wiff
12	DB114PB-FS(0)		11/16/2020 9:52:04 PM	5-369.dam	AE_11162020_5-369.wiff
13	DB115LCS-FS(0)		11/16/2020 10:02:33 PM	5-369.dam	AE_11162020_5-369.wiff
14	G2139-FS(0)		11/16/2020 10:13:01 PM	5-369.dam	AE_11162020_5-369.wiff
15	G2140-FS(0)		11/16/2020 10:23:30 PM	5-369.dam	AE_11162020_5-369.wiff
16	G2141-FS(0)		11/16/2020 10:33:58 PM	5-369.dam	AE_11162020_5-369.wiff
17	G2142-FS(0)		11/16/2020 10:44:26 PM	5-369.dam	AE_11162020_5-369.wiff
18	G2142-FS-D(5)		11/16/2020 10:54:53 PM	5-369.dam	AE_11162020_5-369.wiff
19	G2142-FS-D(7)		11/16/2020 11:05:21 PM	5-369.dam	AE_11162020_5-369.wiff
20	MeOH		11/16/2020 11:15:48 PM	5-369.dam	AE_11162020_5-369.wiff
21	LE55 CCV		11/16/2020 11:26:16 PM	5-369.dam	AE_11162020_5-369.wiff
22	G2143-FS(0)		11/16/2020 11:36:45 PM	5-369.dam	AE_11162020_5-369.wiff
23	G2143-FS-D(5)		11/16/2020 11:47:12 PM	5-369.dam	AE_11162020_5-369.wiff
24	G2143-FS-D(7)		11/16/2020 11:57:41 PM	5-369.dam	AE_11162020_5-369.wiff
25	G2144-FS(0)		11/17/2020 12:08:09 AM	5-369.dam	AE_11162020_5-369.wiff
26	G2144-FS-D(5)		11/17/2020 12:18:37 AM	5-369.dam	AE_11162020_5-369.wiff
27	G2144-FS-D(7)		11/17/2020 12:29:06 AM	5-369.dam	AE_11162020_5-369.wiff
28	G2145-FS(0)		11/17/2020 12:39:34 AM	5-369.dam	AE_11162020_5-369.wiff
29	G2145-FS-D(5)		11/17/2020 12:50:02 AM	5-369.dam	AE_11162020_5-369.wiff
30	G2145-FS-D(7)		11/17/2020 1:00:30 AM	5-369.dam	AE_11162020_5-369.wiff
31	MeOH		11/17/2020 1:10:57 AM	5-369.dam	AE_11162020_5-369.wiff
32	LE54 CCV		11/17/2020 1:21:25 AM	5-369.dam	AE_11162020_5-369.wiff
33	G2146-FS(0)		11/17/2020 1:31:52 AM	5-369.dam	AE_11162020_5-369.wiff
34	G2146-FS-D(5)		11/17/2020 1:42:20 AM	5-369.dam	AE_11162020_5-369.wiff
35	G2146-FS-D(7)		11/17/2020 1:52:48 AM	5-369.dam	AE_11162020_5-369.wiff
36	G2147-FS(0)		11/17/2020 2:03:16 AM	5-369.dam	AE_11162020_5-369.wiff
37	G2147-FS-D(5)		11/17/2020 2:13:45 AM	5-369.dam	AE_11162020_5-369.wiff
38	G2147-FS-D(7)		11/17/2020 2:24:13 AM	5-369.dam	AE_11162020_5-369.wiff
39	G2148-FS(0)		11/17/2020 2:34:43 AM	5-369.dam	AE_11162020_5-369.wiff
40	G2148-FS-D(5)		11/17/2020 2:45:10 AM	5-369.dam	AE_11162020_5-369.wiff

1. Samples from another batch, not reported with this one. DMS 11/17/2020



Sequence Report

Created with Analyst Reporter
Printed: 17/11/2020 2:28:37 PM

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
41	G2148-FS-D(7)		11/17/2020 2:55:38 AM	5-369.dam	AE_11162020_5-369.wiff
42	MeOH		11/17/2020 3:06:05 AM	5-369.dam	AE_11162020_5-369.wiff
43	LE55-CCV		11/17/2020 3:16:33 AM	5-369.dam	AE_11162020_5-369.wiff
44	G2149-FS(0)		11/17/2020 3:27:01 AM	5-369.dam	AE_11162020_5-369.wiff
45	G2149-FS-D(5)		11/17/2020 3:37:28 AM	5-369.dam	AE_11162020_5-369.wiff
46	G2149-FS-D(7)		11/17/2020 3:47:56 AM	5-369.dam	AE_11162020_5-369.wiff
47	G2150-FS(0)		11/17/2020 3:58:23 AM	5-369.dam	AE_11162020_5-369.wiff
48	G2150-FS-D(5)		11/17/2020 4:08:51 AM	5-369.dam	AE_11162020_5-369.wiff
49	G2150-FS-D(7)		11/17/2020 4:19:19 AM	5-369.dam	AE_11162020_5-369.wiff
50	G2151-FS(0)		11/17/2020 4:29:46 AM	5-369.dam	AE_11162020_5-369.wiff
51	G2152-FS(0)		11/17/2020 4:40:15 AM	5-369.dam	AE_11162020_5-369.wiff
52	G2153-FS(0)		11/17/2020 4:50:43 AM	5-369.dam	AE_11162020_5-369.wiff
53	MeOH		11/17/2020 5:01:11 AM	5-369.dam	AE_11162020_5-369.wiff
54	LE54-CCV		11/17/2020 5:11:39 AM	5-369.dam	AE_11162020_5-369.wiff
1	G2154-FS(0)		11/17/2020 5:22:06 AM	5-369.dam	AE_11162020_5-369.wiff
2	G2154-FS-D(5)		11/17/2020 5:32:34 AM	5-369.dam	AE_11162020_5-369.wiff
3	G2154-FS-D(7)		11/17/2020 5:43:02 AM	5-369.dam	AE_11162020_5-369.wiff
4	G2155-FS(0)		11/17/2020 5:53:30 AM	5-369.dam	AE_11162020_5-369.wiff
5	G2155-FS-D(5)		11/17/2020 6:03:58 AM	5-369.dam	AE_11162020_5-369.wiff
6	G2155-FS-D(7)		11/17/2020 6:14:26 AM	5-369.dam	AE_11162020_5-369.wiff
7	G2156-FS(0)		11/17/2020 6:24:55 AM	5-369.dam	AE_11162020_5-369.wiff
8	G2156-FS-D(5)		11/17/2020 6:35:25 AM	5-369.dam	AE_11162020_5-369.wiff
9	G2156-FS-D(7)		11/17/2020 6:45:55 AM	5-369.dam	AE_11162020_5-369.wiff
10	MeOH		11/17/2020 6:56:25 AM	5-369.dam	AE_11162020_5-369.wiff
11	LE55-CCV		11/17/2020 7:06:55 AM	5-369.dam	AE_11162020_5-369.wiff
12	DB116PB-FS(0)		11/17/2020 7:17:23 AM	5-369.dam	AE_11162020_5-369.wiff
13	DB117LCS-FS(0)		11/17/2020 7:27:51 AM	5-369.dam	AE_11162020_5-369.wiff
14	G2157-FS(0)		11/17/2020 7:38:19 AM	5-369.dam	AE_11162020_5-369.wiff
15	G2157-FS-D(5)		11/17/2020 7:48:48 AM	5-369.dam	AE_11162020_5-369.wiff
16	G2157-FS-D(7)		11/17/2020 8:12:51 AM	5-369.dam	AE_11162020_5-369.wiff
17	G2158-FS(0)		11/17/2020 8:23:20 AM	5-369.dam	AE_11162020_5-369.wiff
18	G2158-FS-D(5)		11/17/2020 8:33:48 AM	5-369.dam	AE_11162020_5-369.wiff
19	G2158-FS-D(7)		11/17/2020 8:44:16 AM	5-369.dam	AE_11162020_5-369.wiff
20	MeOH		11/17/2020 8:54:45 AM	5-369.dam	AE_11162020_5-369.wiff
21	LE54-CCV		11/17/2020 9:05:13 AM	5-369.dam	AE_11162020_5-369.wiff
22	G2159-FS(0)		11/17/2020 9:15:40 AM	5-369.dam	AE_11162020_5-369.wiff
23	G2159-FS-D(5)		11/17/2020 9:26:09 AM	5-369.dam	AE_11162020_5-369.wiff
24	G2159-FS-D(7)		11/17/2020 9:36:38 AM	5-369.dam	AE_11162020_5-369.wiff
25	G2160-FS(0)		11/17/2020 9:47:07 AM	5-369.dam	AE_11162020_5-369.wiff

1. Samples from another batch, not reported with this one. DMS 11/17/2020



Sequence Report

Created with Analyst Reporter
Printed: 17/11/2020 2:28:37 PM

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
26	G2160-FS-D(5)		11/17/2020 9:57:35 AM	5-369.dam	AE_11162020_5-369.wiff
27	G2160-FS-D(7)		11/17/2020 10:08:04 AM	5-369.dam	AE_11162020_5-369.wiff
28	G2161-FS(0)		11/17/2020 10:18:34 AM	5-369.dam	AE_11162020_5-369.wiff
29	G2161-FS-D(5)		11/17/2020 10:29:04 AM	5-369.dam	AE_11162020_5-369.wiff
30	G2161-FS-D(7)		11/17/2020 10:39:33 AM	5-369.dam	AE_11162020_5-369.wiff
31	MeOH		11/17/2020 10:50:01 AM	5-369.dam	AE_11162020_5-369.wiff
32	LE55 CCV	CCV	11/17/2020 11:00:30 AM	5-369.dam	AE_11162020_5-369.wiff
1	MeOH		11/17/2020 11:10:59 AM	5-369.dam	AE_11162020_5-369.wiff
2	DB386PB-FS(0)	Procedural Blank	11/17/2020 11:21:28 AM	5-369.dam	AE_11162020_5-369.wiff
3	DB387LCS-FS(0)	Laboratory Control Sample	11/17/2020 11:31:57 AM	5-369.dam	AE_11162020_5-369.wiff
4	G1773-FS1(0)	CBD-AOA-MW18-1020	11/17/2020 11:42:26 AM	5-369.dam	AE_11162020_5-369.wiff
5	G1773-FS1-D(3)	CBD-AOA-MW18-1020	11/17/2020 11:52:54 AM	5-369.dam	AE_11162020_5-369.wiff
6	G1773-FS1-D(5)	CBD-AOA-MW18-1020	11/17/2020 12:03:23 PM	5-369.dam	AE_11162020_5-369.wiff
7	G1773-FS1-D(7)	CBD-AOA-MW18-1020	11/17/2020 12:13:52 PM	5-369.dam	AE_11162020_5-369.wiff
8	G1773-FS1-D(9)	CBD-AOA-MW18-1020	11/17/2020 12:24:21 PM	5-369.dam	AE_11162020_5-369.wiff
9	LE54 CCV	CCV	11/17/2020 12:34:49 PM	5-369.dam	AE_11162020_5-369.wiff

1



1. Samples from another batch, not reported with this one. DMS 11/17/2020



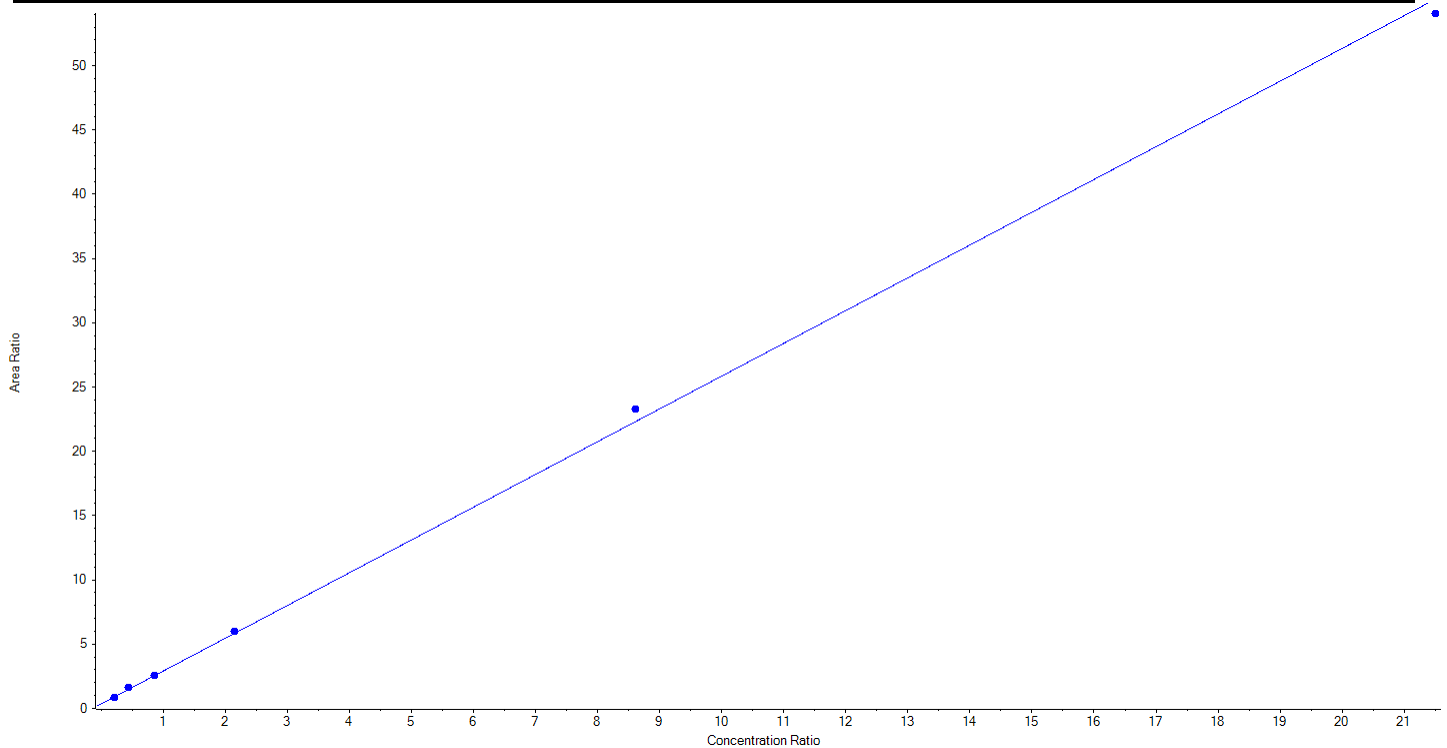
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Printed: 17/11/2020 3:14:05 PM

Analyte Name	PFBS_1	Data File	AE_11162020_5-369.wiff
MRM Transition	298.9 / 80.0	Result Table	20-1481
Internal Standard	13C3-PFBS	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 2.54832x + 0.37351$ ($r = 0.99936$) (weighting: $1/x$) $r^2: 0.9987$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	210.34	84.1
3	LE53	L2	True	500.00	558.26	111.7
4	LE54	L3	True	1000.00	998.23	99.8
5	LE55	L4	True	2500.00	2549.66	102.0
6	LE56	L5	True	10000.00	10444.89	104.5
7	LE57	L6	True	25000.00	24488.63	98.0





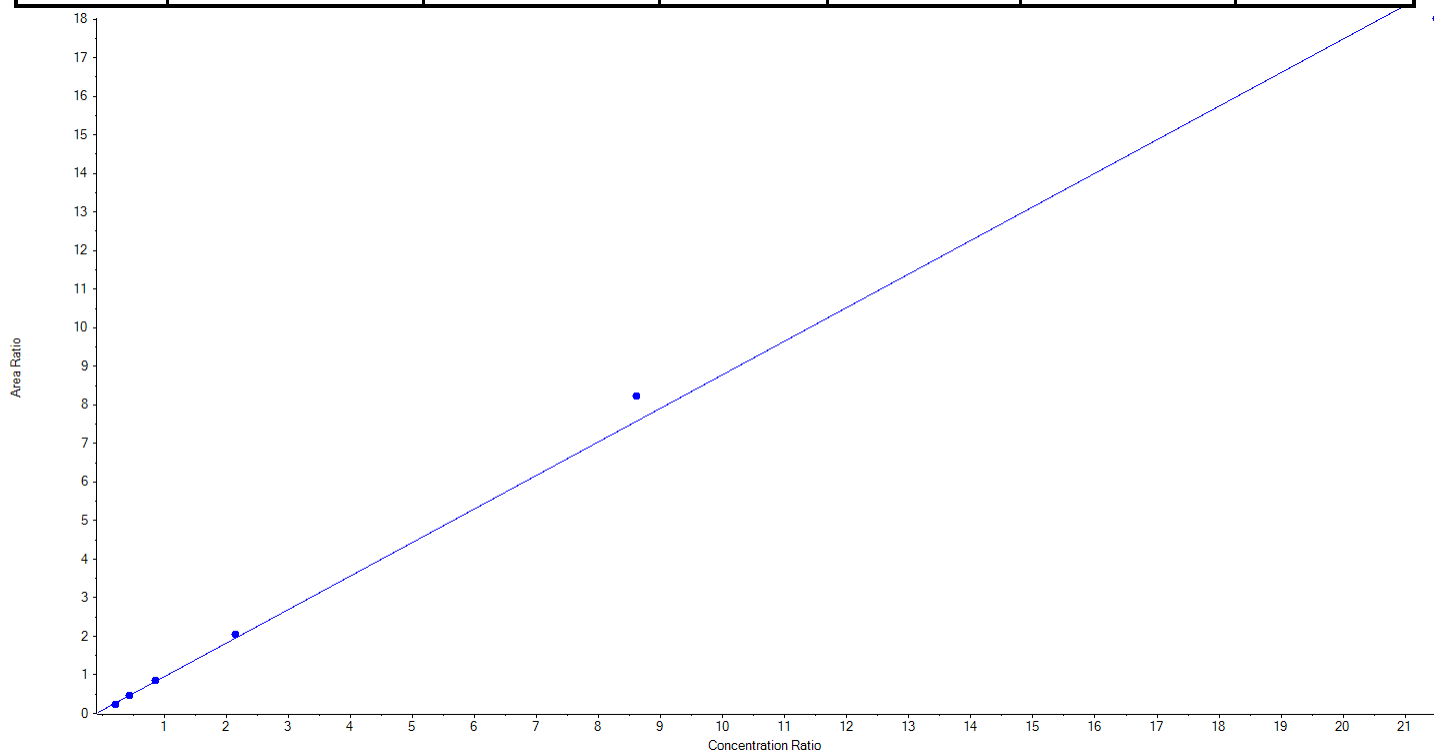
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Analyte Name	PFBS_2	Data File	AE_11162020_5-369.wiff
MRM Transition	298.9 / 99.0	Result Table	20-1481
Internal Standard	13C3-PFBS	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.86985x + 0.08665$ ($r = 0.99800$) (weighting: $1/x$) $r^2:0.9960$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	209.49	83.8
3	LE53	L2	True	500.00	510.30	102.1
4	LE54	L3	True	1000.00	1037.63	103.8
5	LE55	L4	True	2500.00	2640.83	105.6
6	LE56	L5	True	10000.00	10889.94	108.9
7	LE57	L6	True	25000.00	23961.80	95.9





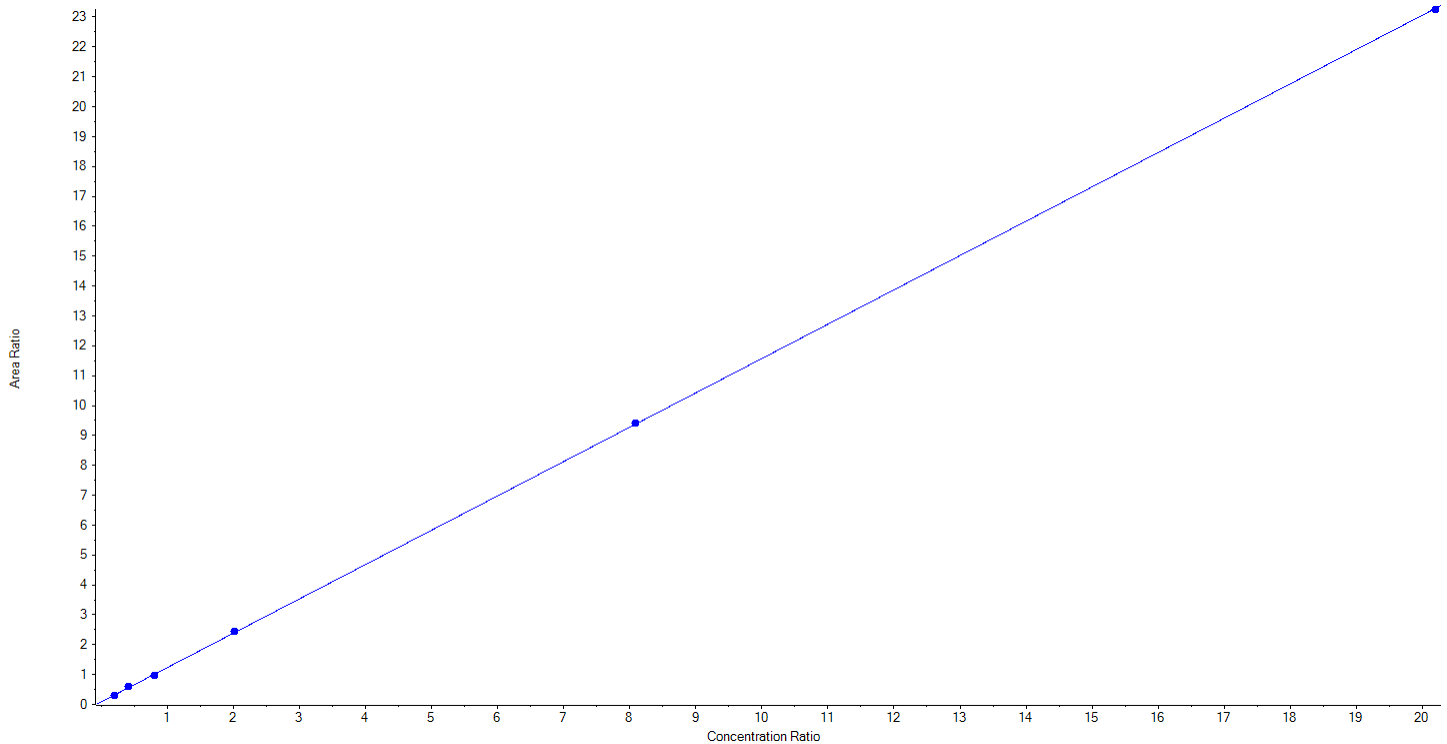
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Analyte Name	PFHxA_1	Data File	AE_11162020_5-369.wiff
MRM Transition	313.0 / 269.0	Result Table	20-1481
Internal Standard	13C5-PFHxA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.14847x + 0.09010$ ($r = 0.99986$) (weighting: $1/x$) $r^2: 0.9997$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	252.50	243.02	96.2
3	LE53	L2	True	505.00	549.22	108.8
4	LE54	L3	True	1010.00	941.33	93.2
5	LE55	L4	True	2525.00	2565.96	101.6
6	LE56	L5	True	10100.00	10134.33	100.3
7	LE57	L6	True	25250.00	25208.64	99.8





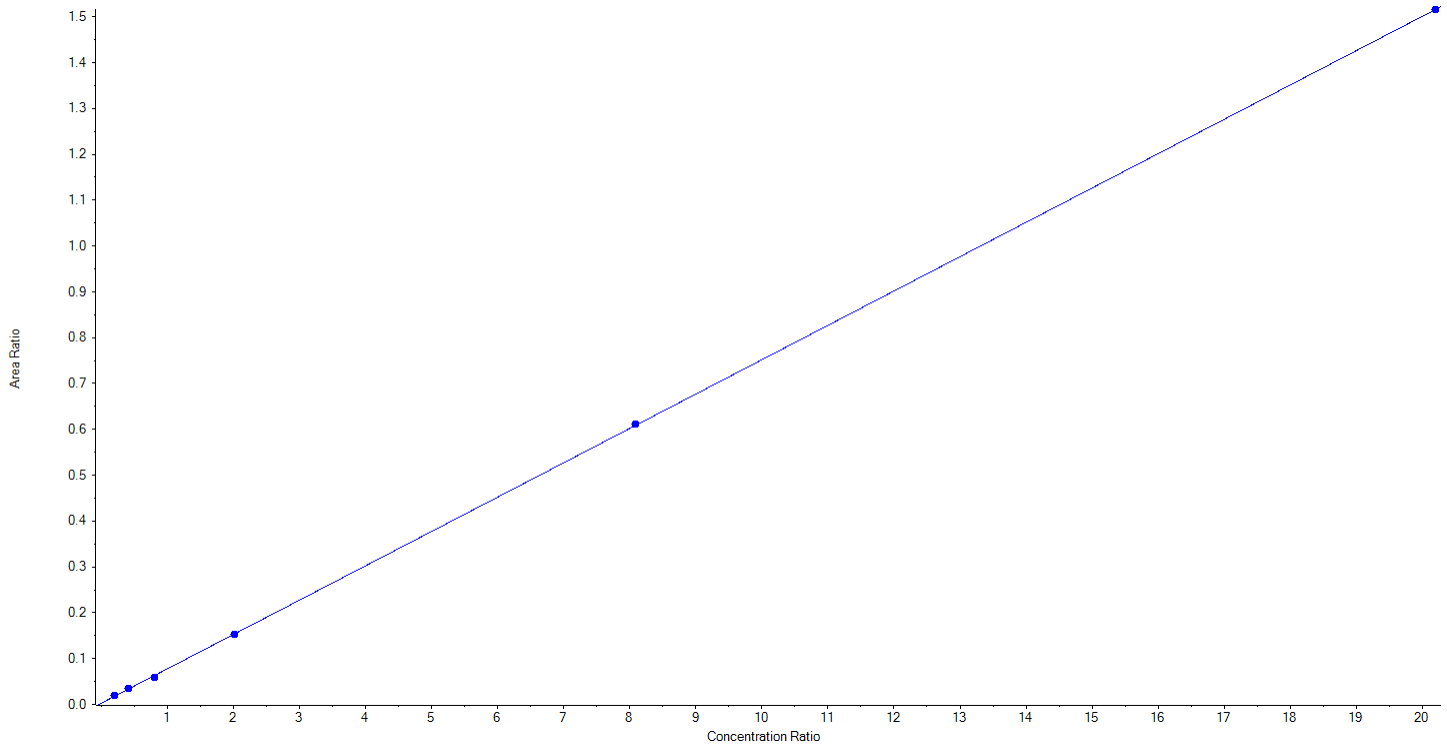
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Analyte Name	PFHxA_2	Data File	AE_11162020_5-369.wiff
MRM Transition	313.0 / 119.0	Result Table	20-1481
Internal Standard	13C5-PFHxA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.07488x + 0.00305$ ($r = 0.99993$) (weighting: $1/x$) $r^2: 0.9999$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	252.50	260.47	103.2
3	LE53	L2	True	505.00	519.95	103.0
4	LE54	L3	True	1010.00	950.96	94.2
5	LE55	L4	True	2525.00	2503.49	99.2
6	LE56	L5	True	10100.00	10159.23	100.6
7	LE57	L6	True	25250.00	25248.40	100.0





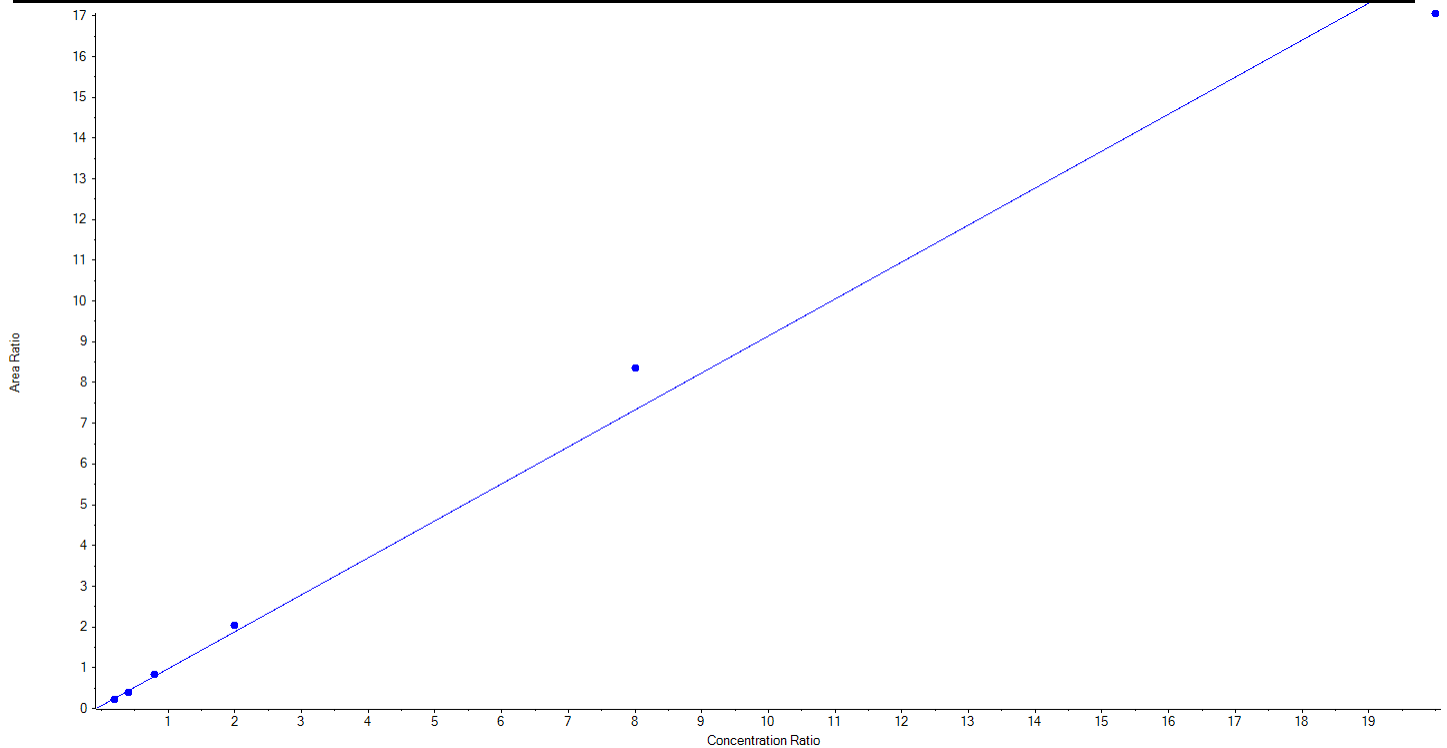
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Analyte Name	PFHpA_1	Data File	AE_11162020_5-369.wiff
MRM Transition	363.0 / 319.0	Result Table	20-1481
Internal Standard	13C4-PFHpA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.90742x + 0.06839$ ($r = 0.99520$) (weighting: $1/x$) $r^2: 0.9904$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	224.84	89.9
3	LE53	L2	True	500.00	439.25	87.9
4	LE54	L3	True	1000.00	1057.04	105.7
5	LE55	L4	True	2500.00	2720.66	108.8
6	LE56	L5	True	10000.00	11408.48	114.1
7	LE57	L6	True	25000.00	23399.73	93.6





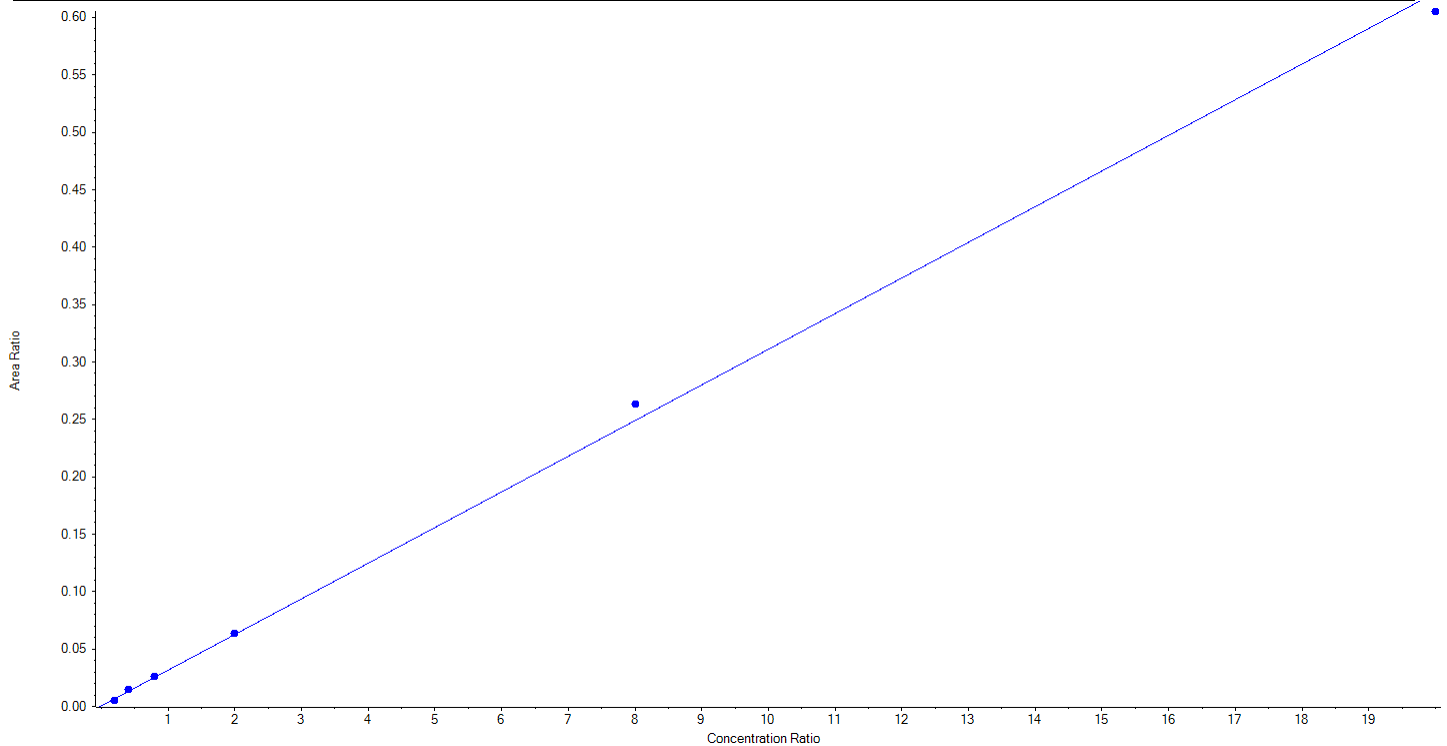
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Analyte Name	PFHpA_2	Data File	AE_11162020_5-369.wiff
MRM Transition	363.0 / 169.0	Result Table	20-1481
Internal Standard	13C4-PFHpA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.03104 x + 6.10119e-4$ ($r = 0.99894$) (weighting: $1/x$) $r^2:0.9979$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	195.77	78.3
3	LE53	L2	True	500.00	565.53	113.1
4	LE54	L3	True	1000.00	1044.53	104.5
5	LE55	L4	True	2500.00	2524.46	101.0
6	LE56	L5	True	10000.00	10579.34	105.8
7	LE57	L6	True	25000.00	24340.37	97.4





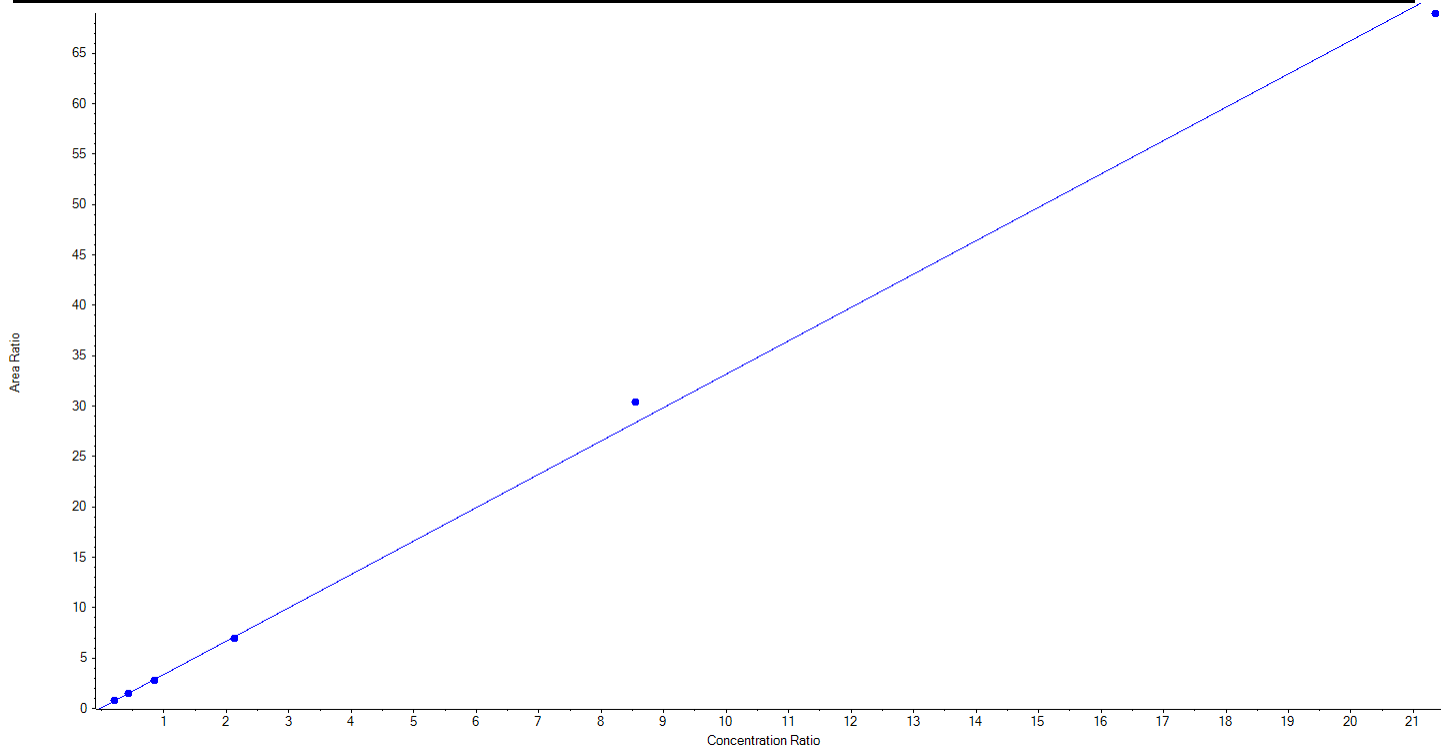
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Analyte Name	PFHxS_1	Data File	AE_11162020_5-369.wiff
MRM Transition	399.0 / 80.0	Result Table	20-1481
Internal Standard	13C3-PFHxS	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 3.31048x + 0.06488$ ($r = 0.99894$) (weighting: $1/x$) $r^2: 0.9979$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	252.50	251.66	99.7
3	LE53	L2	True	505.00	520.65	103.1
4	LE54	L3	True	1010.00	953.61	94.4
5	LE55	L4	True	2525.00	2477.19	98.1
6	LE56	L5	True	10100.00	10833.62	107.3
7	LE57	L6	True	25250.00	24605.78	97.5





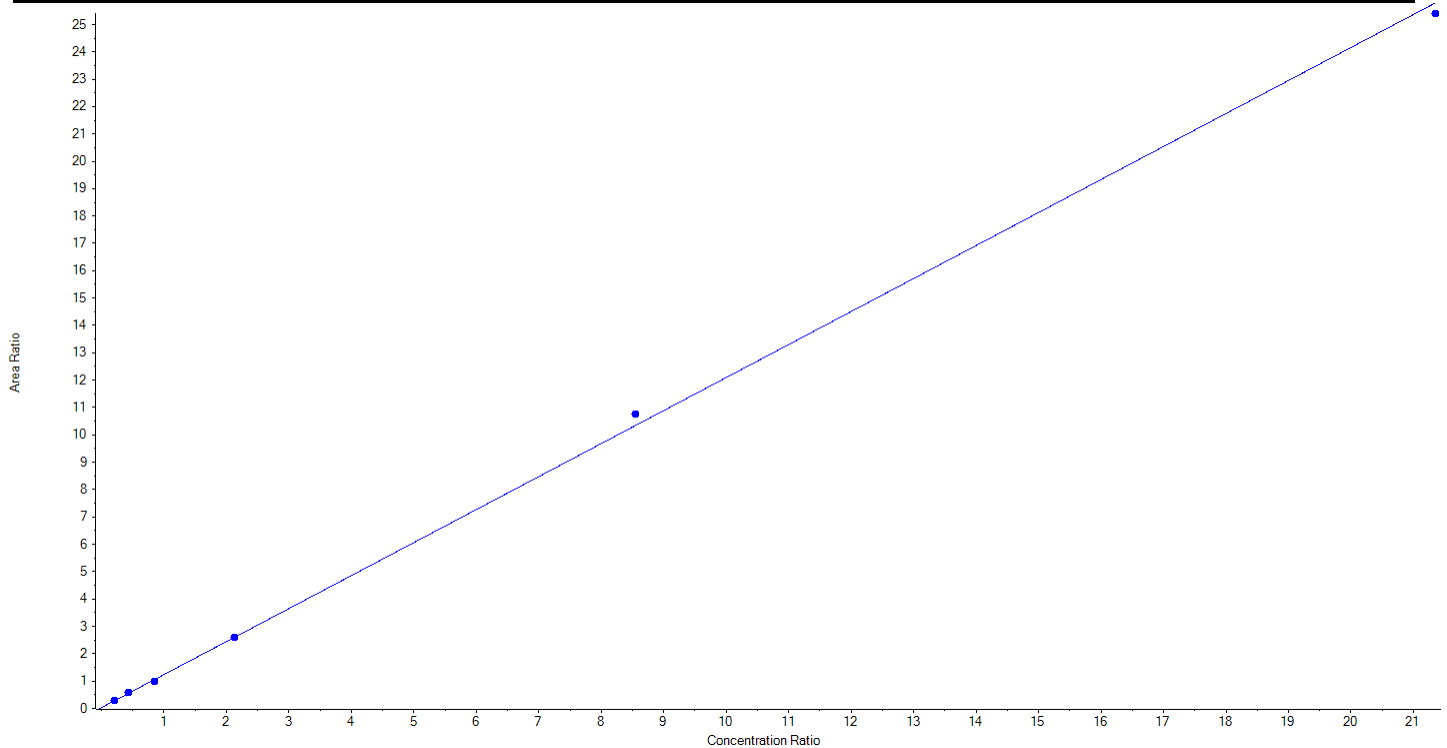
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Analyte Name	PFHxS_2	Data File	AE_11162020_5-369.wiff
MRM Transition	399.0 / 99.0	Result Table	20-1481
Internal Standard	13C3-PFHxS	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.20625x + 0.03242$ ($r = 0.99945$) (weighting: $1/x$) $r^2: 0.9989$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	252.50	239.99	95.1
3	LE53	L2	True	505.00	560.04	110.9
4	LE54	L3	True	1010.00	919.77	91.1
5	LE55	L4	True	2525.00	2533.10	100.3
6	LE56	L5	True	10100.00	10522.39	104.2
7	LE57	L6	True	25250.00	24867.20	98.5





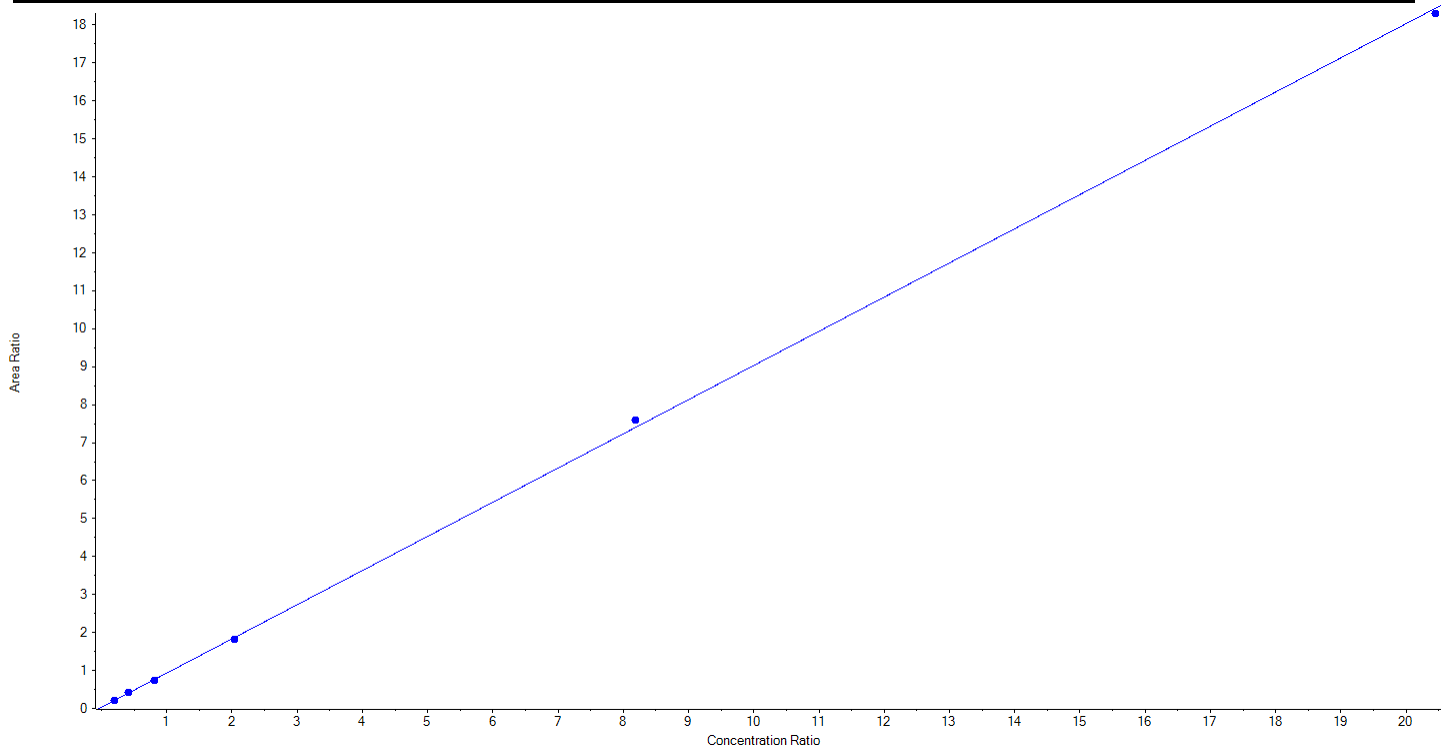
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Analyte Name	PFOA_1	Data File	AE_11162020_5-369.wiff
MRM Transition	413.0 / 369.0	Result Table	20-1481
Internal Standard	13C8-PFOA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.90015x + 0.03170$ ($r = 0.99981$) (weighting: $1/x$) $r^2: 0.9996$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	250.81	100.3
3	LE53	L2	True	500.00	517.97	103.6
4	LE54	L3	True	1000.00	971.33	97.1
5	LE55	L4	True	2500.00	2423.89	97.0
6	LE56	L5	True	10000.00	10274.90	102.8
7	LE57	L6	True	25000.00	24811.10	99.2





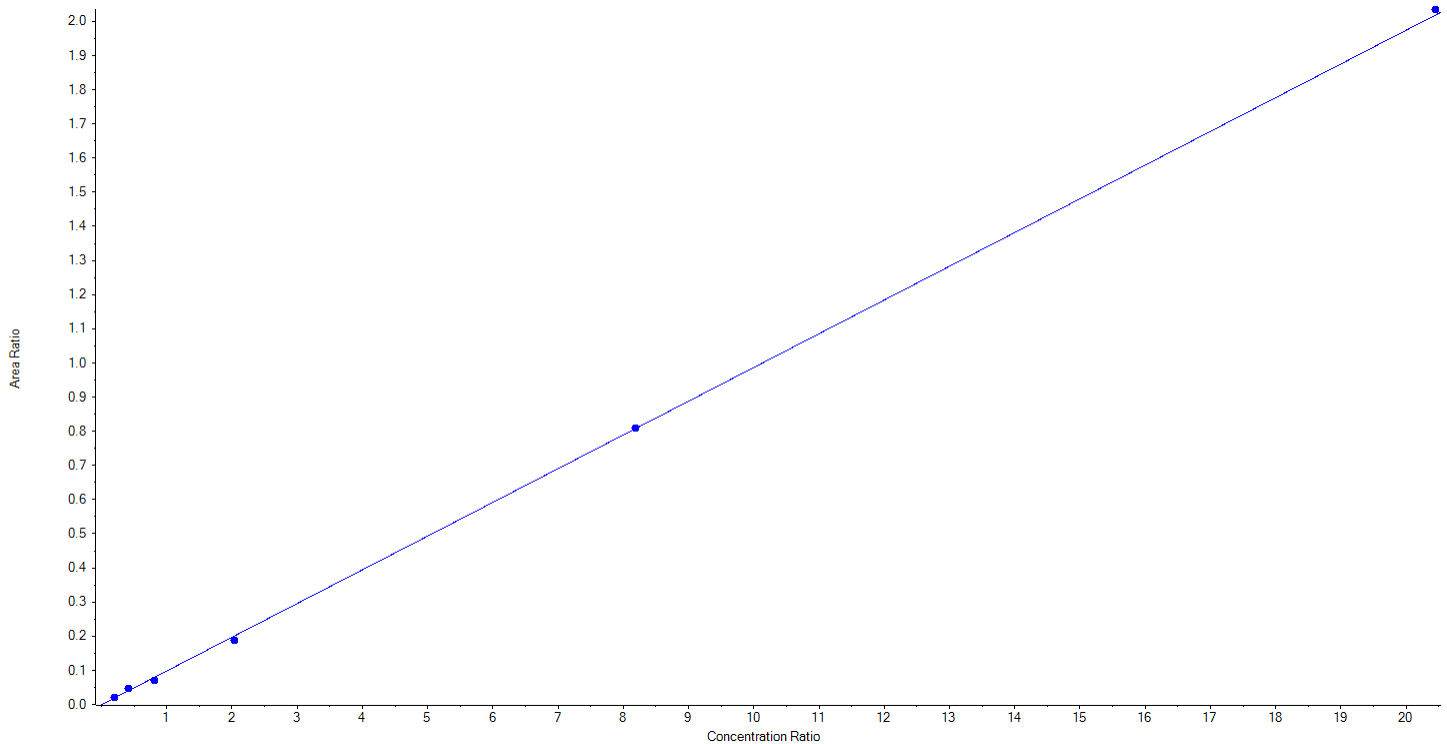
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Analyte Name	PFOA_2	Data File	AE_11162020_5-369.wiff
MRM Transition	413.0 / 169.0	Result Table	20-1481
Internal Standard	13C8-PFOA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.09873 x + -5.66596e-4$ ($r = 0.99945$) (weighting: $1 / x$) $r^2:0.9989$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	260.00	104.0
3	LE53	L2	True	500.00	569.73	114.0
4	LE54	L3	True	1000.00	879.47	88.0
5	LE55	L4	True	2500.00	2330.13	93.2
6	LE56	L5	True	10000.00	10010.08	100.1
7	LE57	L6	True	25000.00	25200.58	100.8





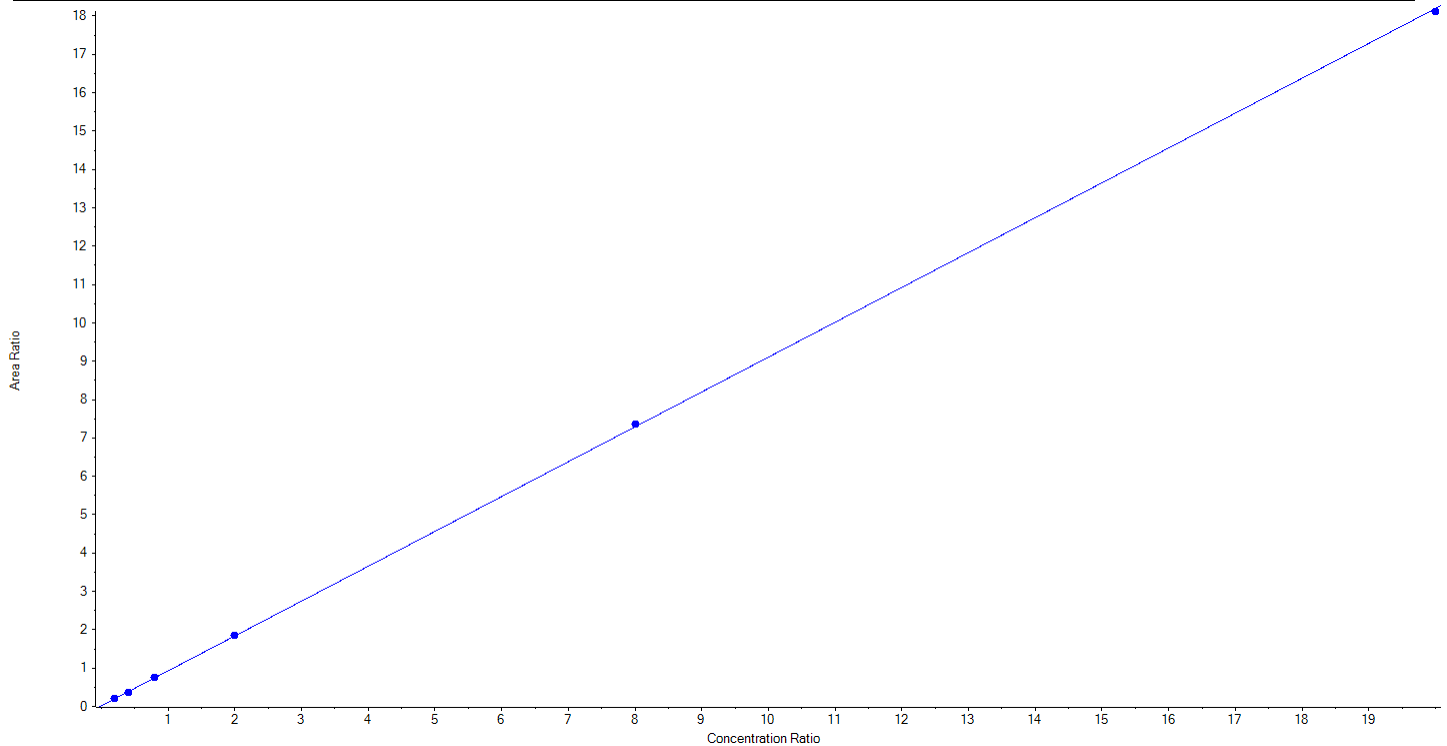
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Analyte Name	PFNA_1	Data File	AE_11162020_5-369.wiff
MRM Transition	463.0 / 419.0	Result Table	20-1481
Internal Standard	13C9-PFNA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.90875x + 0.02076$ ($r = 0.99997$) (weighting: $1/x$) $r^2: 0.9999$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	252.45	101.0
3	LE53	L2	True	500.00	481.14	96.2
4	LE54	L3	True	1000.00	1011.32	101.1
5	LE55	L4	True	2500.00	2532.09	101.3
6	LE56	L5	True	10000.00	10080.90	100.8
7	LE57	L6	True	25000.00	24892.10	99.6





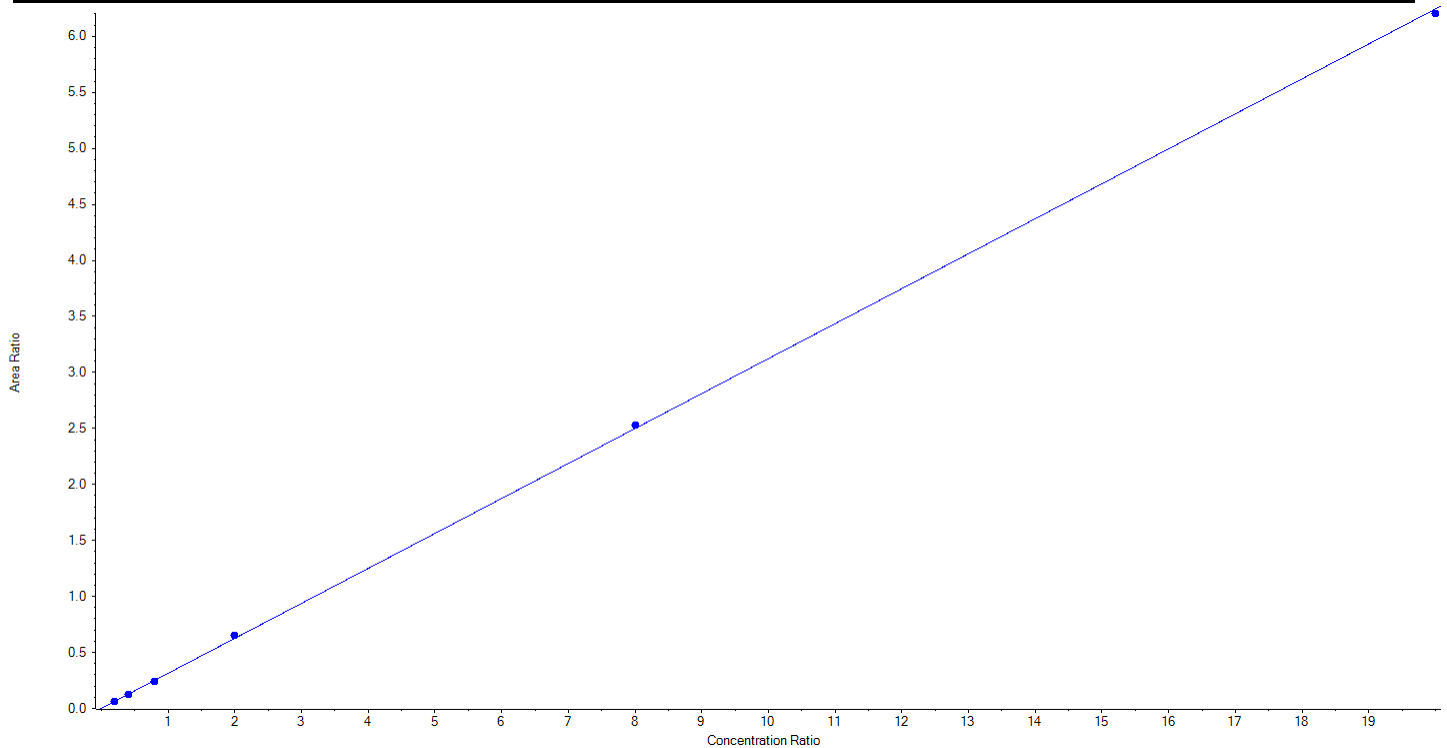
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Analyte Name	PFNA_2	Data File	AE_11162020_5-369.wiff
MRM Transition	463.0 / 219.0	Result Table	20-1481
Internal Standard	13C9-PFNA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.31210x + 0.00237$ ($r = 0.99984$) (weighting: $1/x$) $r^2: 0.9997$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	256.82	102.7
3	LE53	L2	True	500.00	488.38	97.7
4	LE54	L3	True	1000.00	945.86	94.6
5	LE55	L4	True	2500.00	2614.59	104.6
6	LE56	L5	True	10000.00	10108.28	101.1
7	LE57	L6	True	25000.00	24836.08	99.3





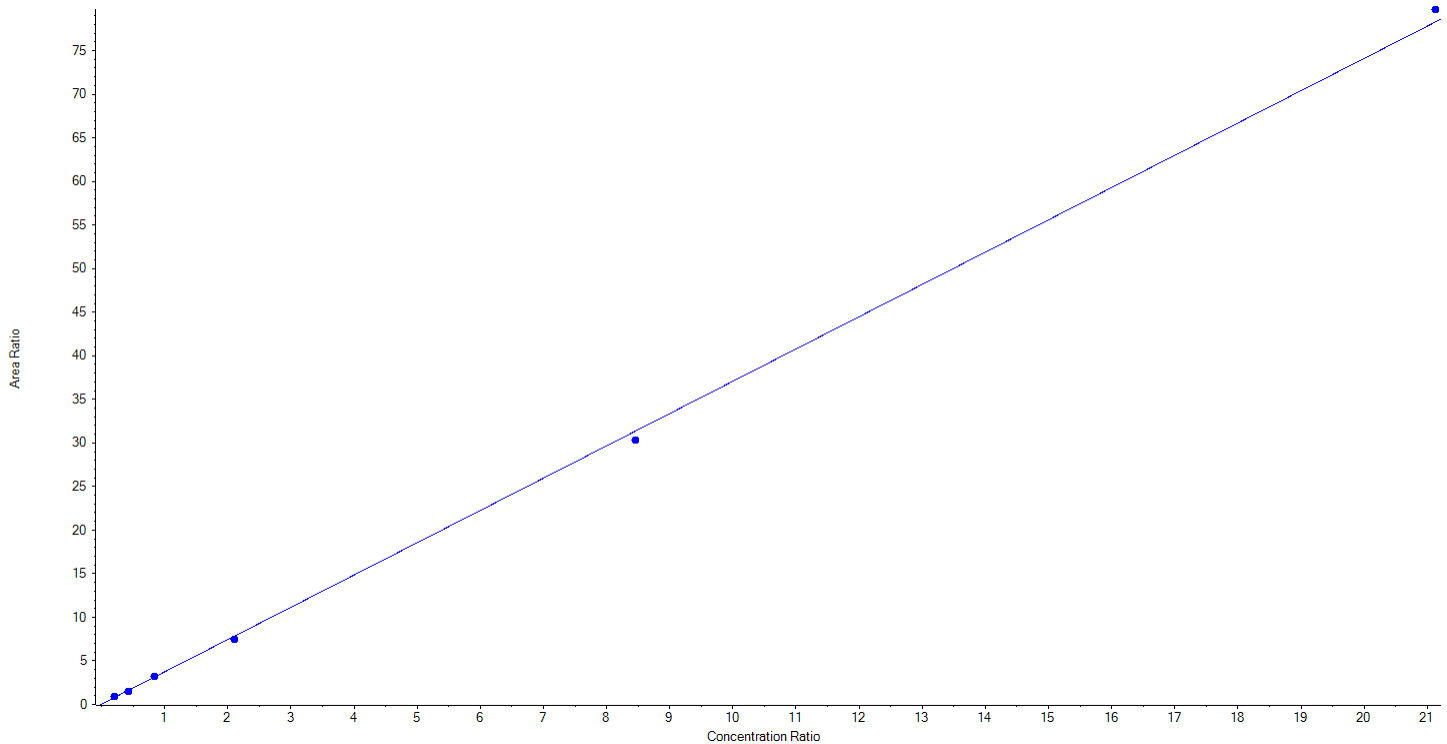
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Analyte Name	PFOS_1	Data File	AE_11162020_5-369.wiff
MRM Transition	499.0 / 80.0	Result Table	20-1481
Internal Standard	13C8-PFOS	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 3.70342x + 0.04063$ ($r = 0.99955$) (weighting: $1/x$) $r^2: 0.9991$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	252.50	283.81	112.4
3	LE53	L2	True	505.00	475.58	94.2
4	LE54	L3	True	1010.00	1010.08	100.0
5	LE55	L4	True	2525.00	2396.01	94.9
6	LE56	L5	True	10100.00	9767.00	96.7
7	LE57	L6	True	25250.00	25710.01	101.8





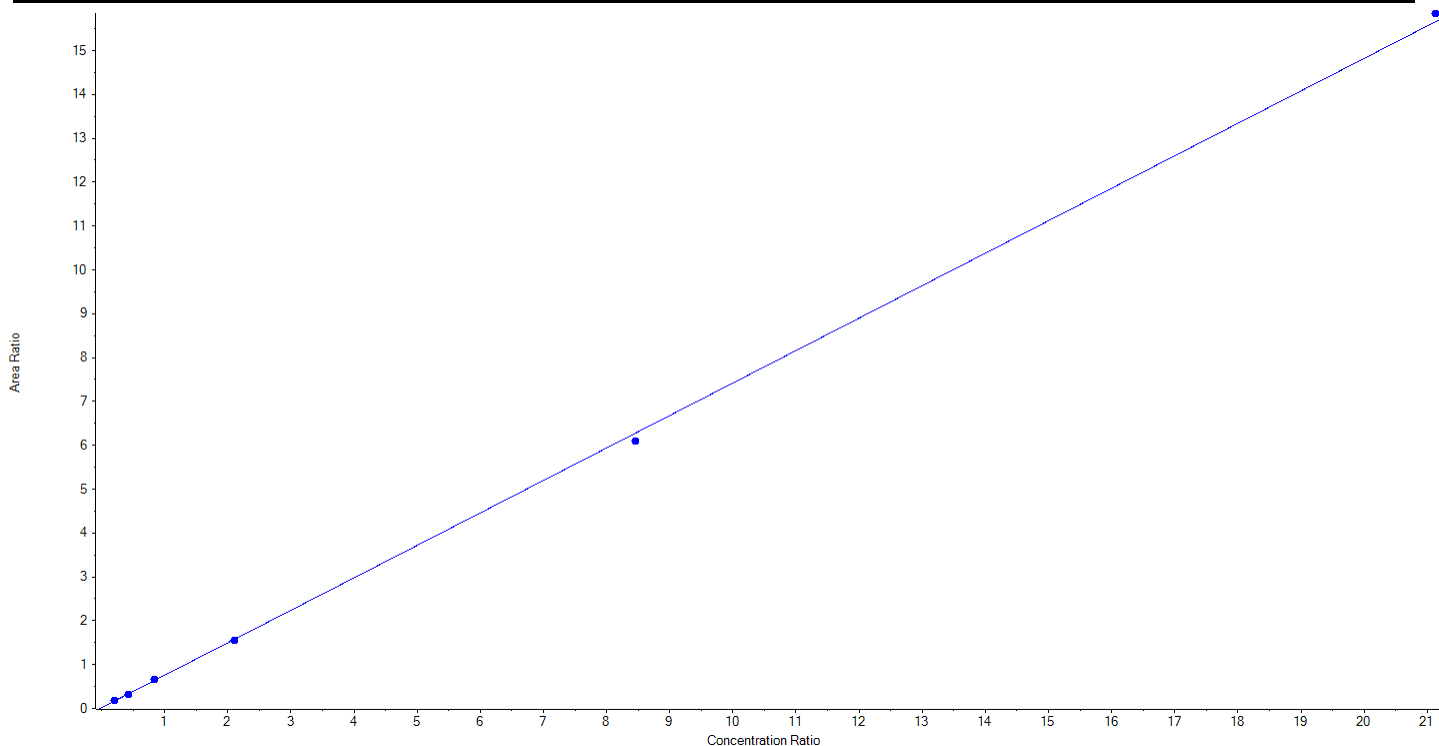
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Analyte Name	PFOS_2	Data File	AE_11162020_5-369.wiff
MRM Transition	499.0 / 99.0	Result Table	20-1481
Internal Standard	13C8-PFOS	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.74011x + 0.01768$ ($r = 0.99978$) (weighting: $1/x$) $r^2: 0.9996$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	252.50	262.05	103.8
3	LE53	L2	True	505.00	483.33	95.7
4	LE54	L3	True	1010.00	1046.03	103.6
5	LE55	L4	True	2525.00	2490.37	98.6
6	LE56	L5	True	10100.00	9808.94	97.1
7	LE57	L6	True	25250.00	25551.78	101.2





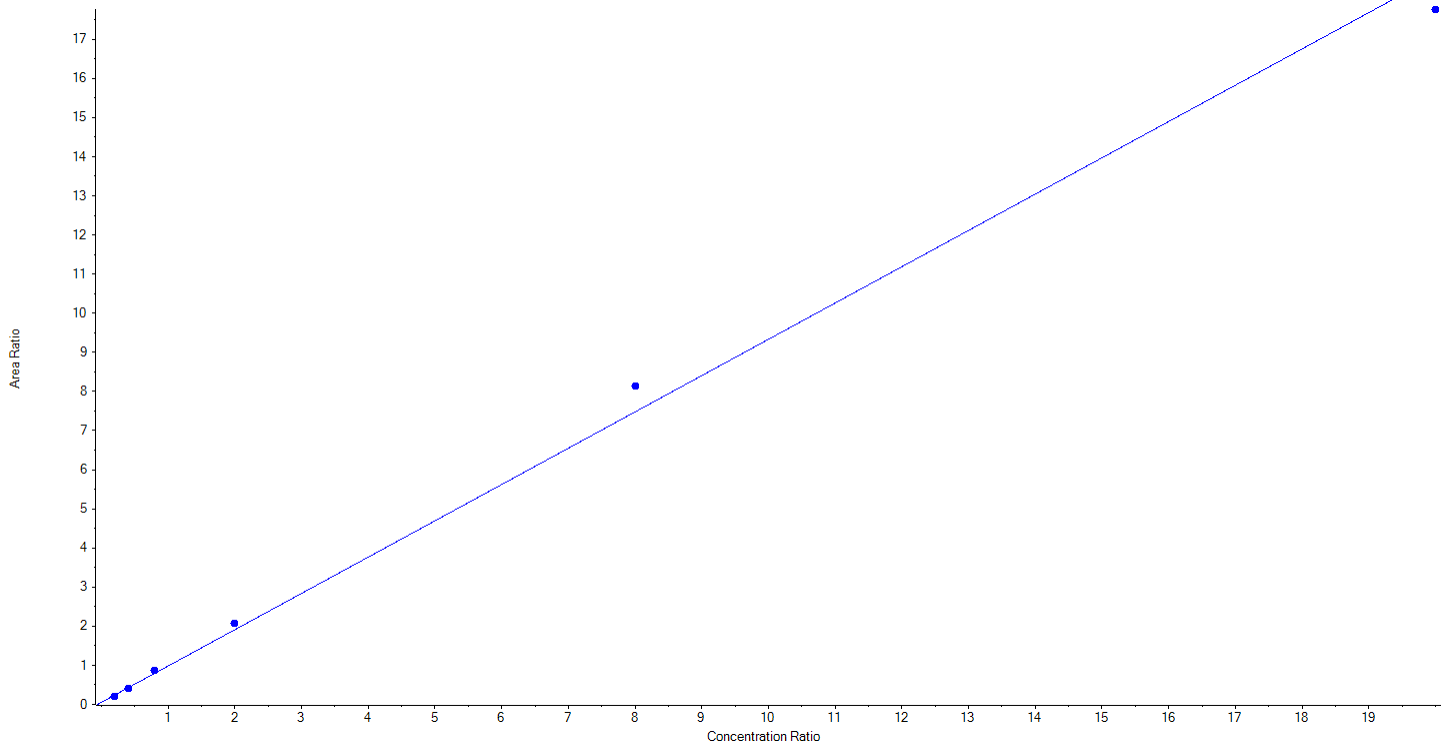
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Analyte Name	PFDA_1	Data File	AE_11162020_5-369.wiff
MRM Transition	513.0 / 469.0	Result Table	20-1481
Internal Standard	13C6-PFDA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.92767x + 0.05572$ ($r = 0.99754$) (weighting: $1/x$) $r^2: 0.9951$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	207.32	82.9
3	LE53	L2	True	500.00	472.77	94.6
4	LE54	L3	True	1000.00	1095.98	109.6
5	LE55	L4	True	2500.00	2710.57	108.4
6	LE56	L5	True	10000.00	10907.38	109.1
7	LE57	L6	True	25000.00	23855.97	95.4





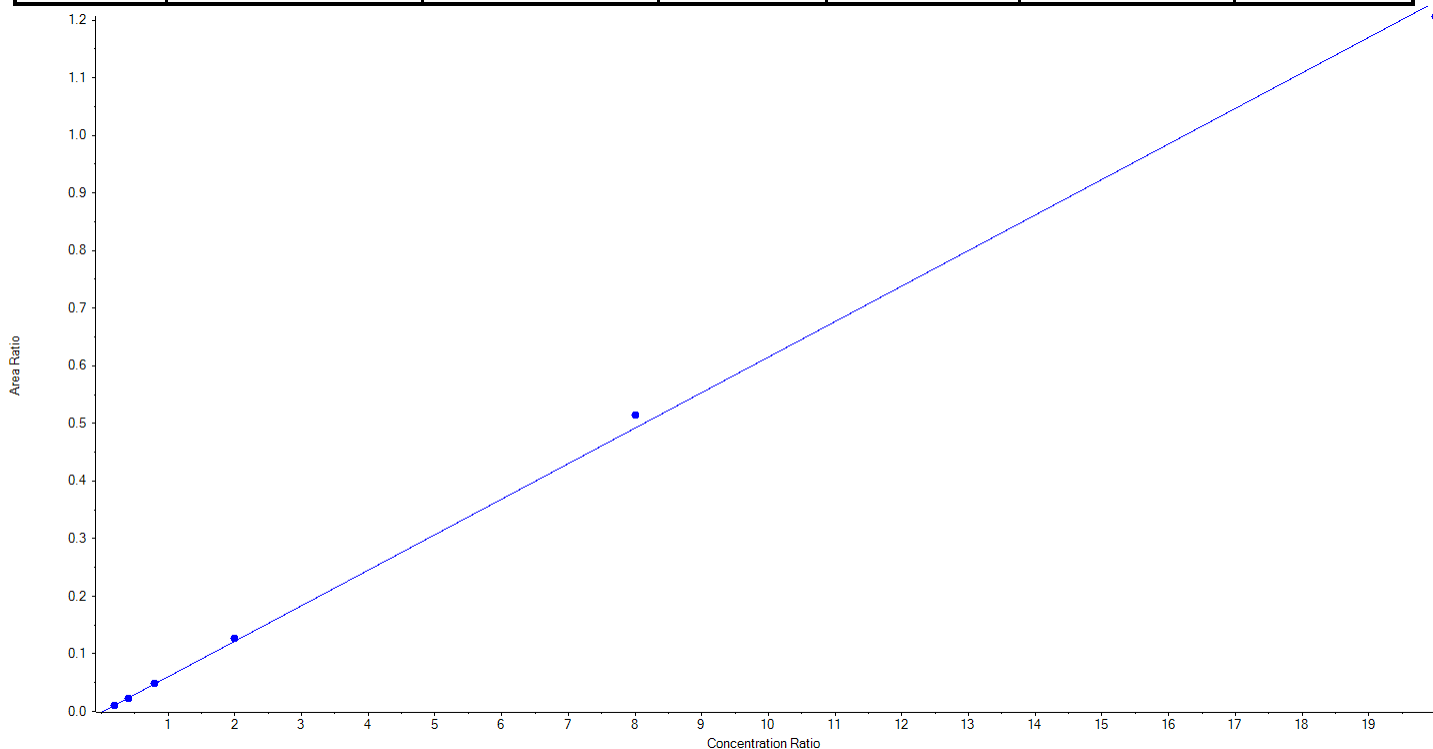
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Analyte Name	PFDA_2	Data File	AE_11162020_5-369.wiff
MRM Transition	513.0 / 219.0	Result Table	20-1481
Internal Standard	13C6-PFDA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.06165x + -0.00140$ ($r = 0.99947$) (weighting: 1 / x) $r^2:0.9989$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	248.46	99.4
3	LE53	L2	True	500.00	470.82	94.2
4	LE54	L3	True	1000.00	1001.95	100.2
5	LE55	L4	True	2500.00	2595.58	103.8
6	LE56	L5	True	10000.00	10450.34	104.5
7	LE57	L6	True	25000.00	24482.85	97.9





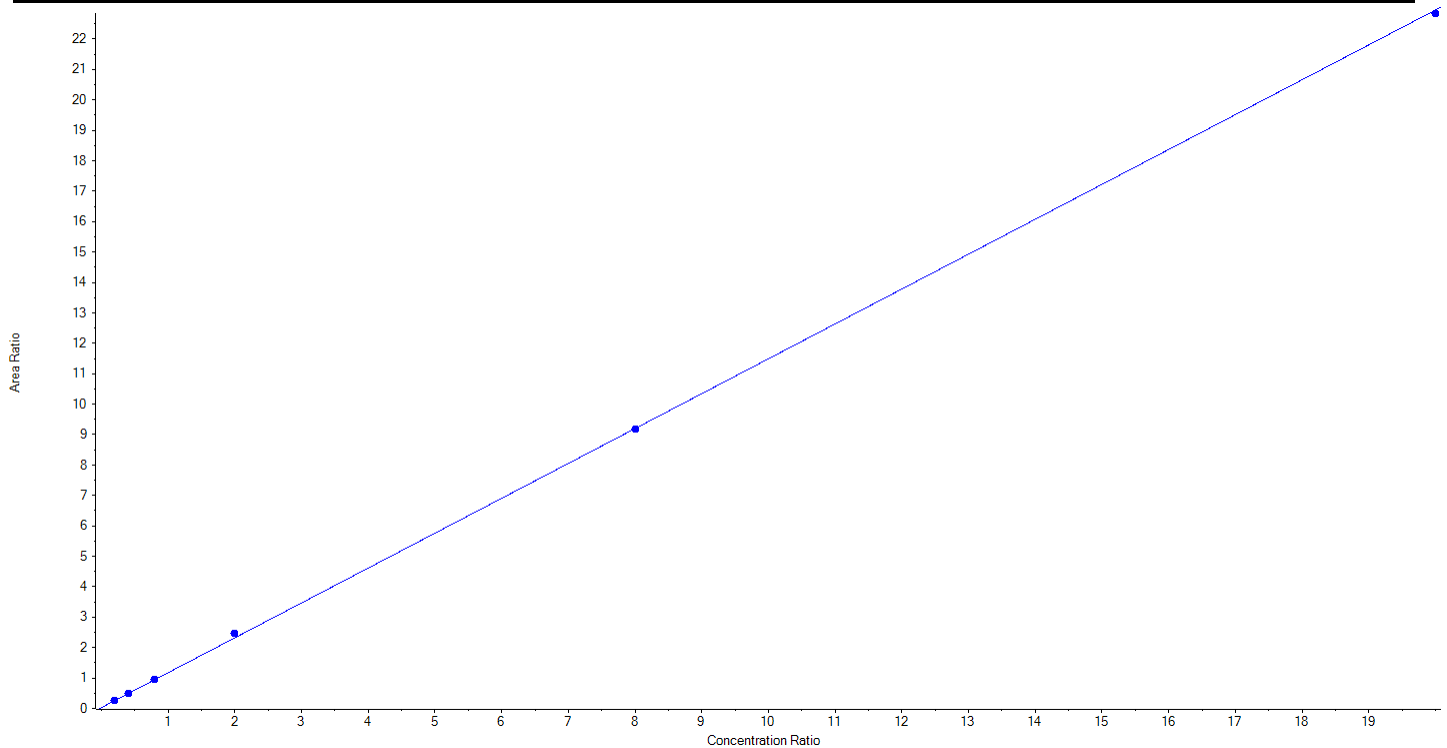
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Analyte Name	PFUnA_1	Data File	AE_11162020_5-369.wiff
MRM Transition	563.0 / 519.0	Result Table	20-1481
Internal Standard	13C7-PFUnA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.14615x + 0.03028$ ($r = 0.99985$) (weighting: $1/x$) $r^2: 0.9997$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	236.54	94.6
3	LE53	L2	True	500.00	494.13	98.8
4	LE54	L3	True	1000.00	1013.61	101.4
5	LE55	L4	True	2500.00	2645.83	105.8
6	LE56	L5	True	10000.00	9987.16	99.9
7	LE57	L6	True	25000.00	24872.72	99.5





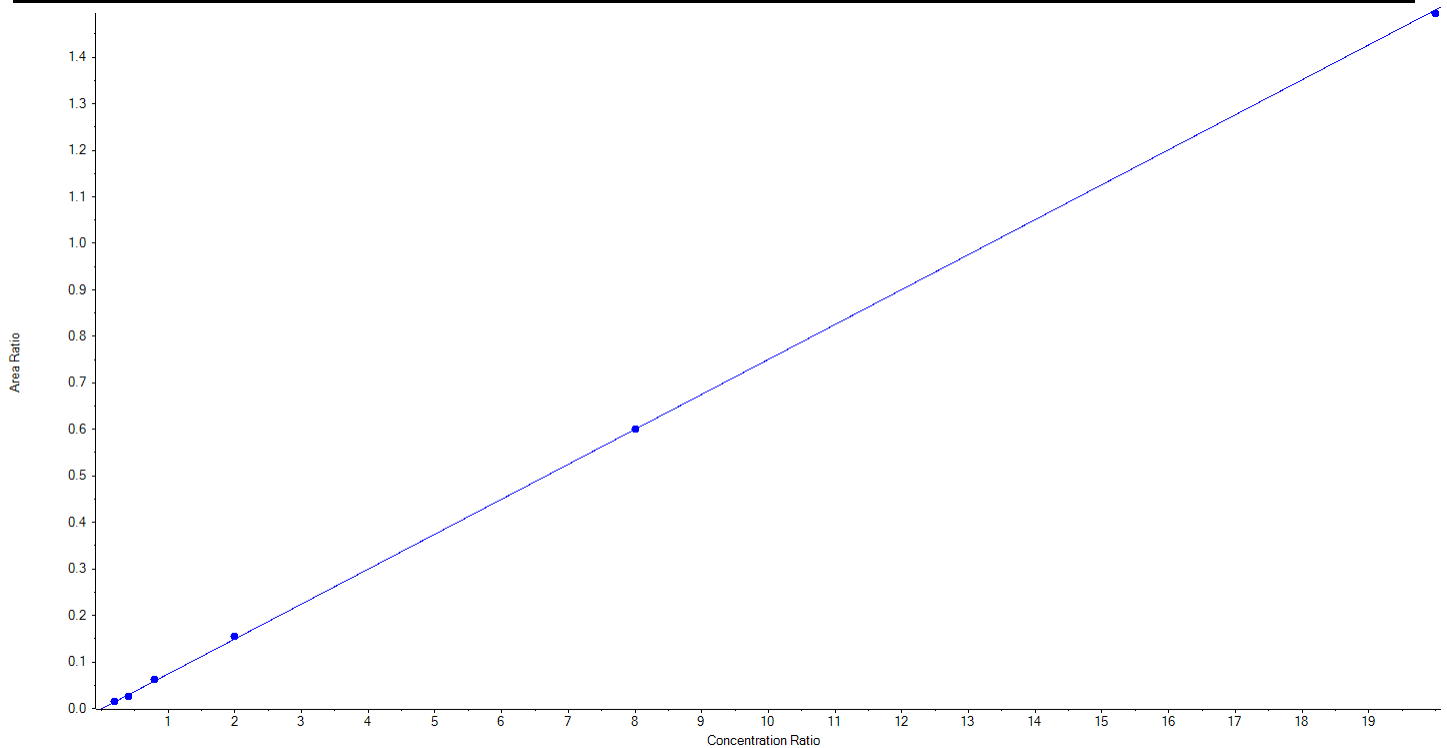
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Analyte Name	PFUnA_2	Data File	AE_11162020_5-369.wiff
MRM Transition	563.0 / 269.0	Result Table	20-1481
Internal Standard	13C7-PFUnA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.07513x + -9.00423e-4$ ($r = 0.99980$) (weighting: $1/x$) $r^2: 0.9996$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	247.89	99.2
3	LE53	L2	True	500.00	453.74	90.8
4	LE54	L3	True	1000.00	1061.65	106.2
5	LE55	L4	True	2500.00	2609.63	104.4
6	LE56	L5	True	10000.00	10006.36	100.1
7	LE57	L6	True	25000.00	24870.73	99.5





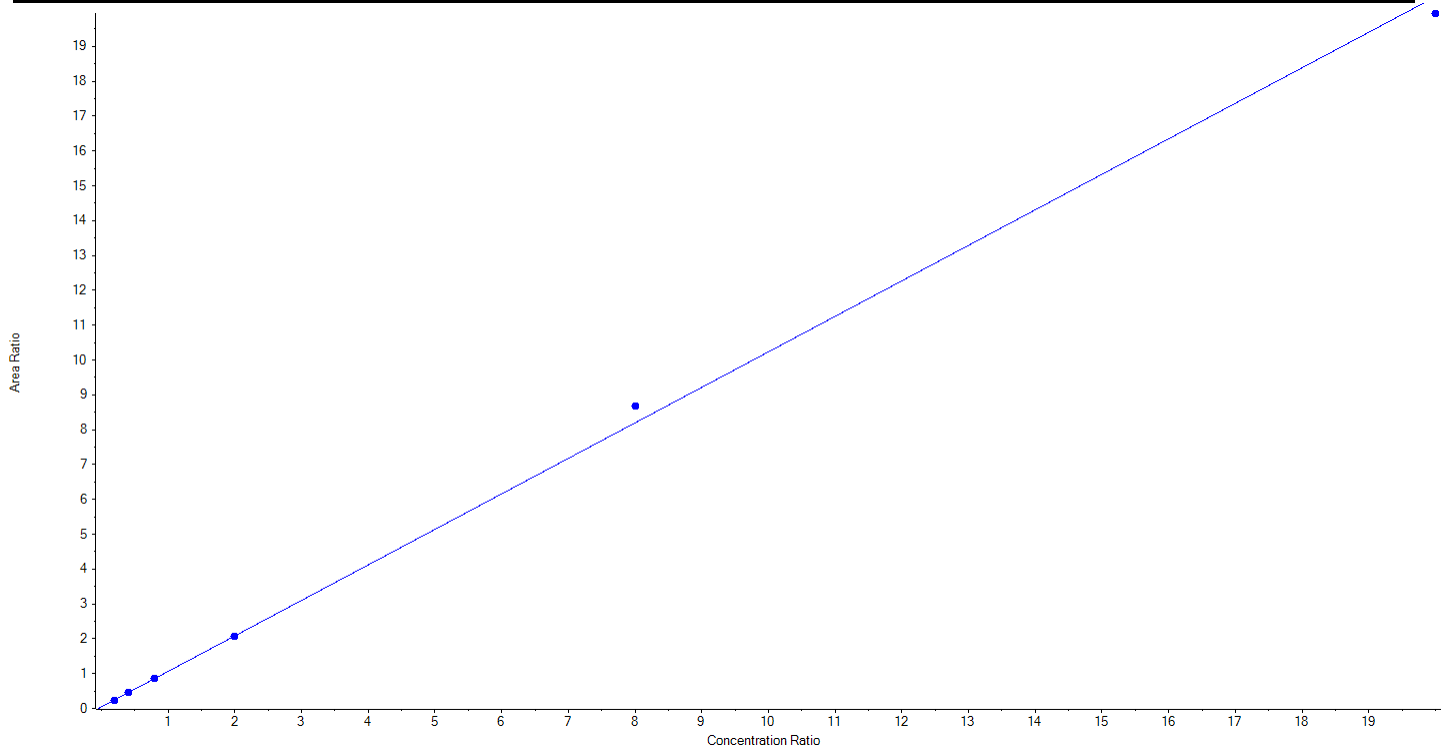
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Analyte Name	PFD _o A_1	Data File	AE_11162020_5-369.wiff
MRM Transition	613.0 / 569.0	Result Table	20-1481
Internal Standard	13C2-PFD _o A	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.01898x + 0.04493$ ($r = 0.99926$) (weighting: $1/x$) $r^2: 0.9985$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	228.65	91.5
3	LE53	L2	True	500.00	518.89	103.8
4	LE54	L3	True	1000.00	1016.71	101.7
5	LE55	L4	True	2500.00	2489.58	99.6
6	LE56	L5	True	10000.00	10587.33	105.9
7	LE57	L6	True	25000.00	24408.84	97.6





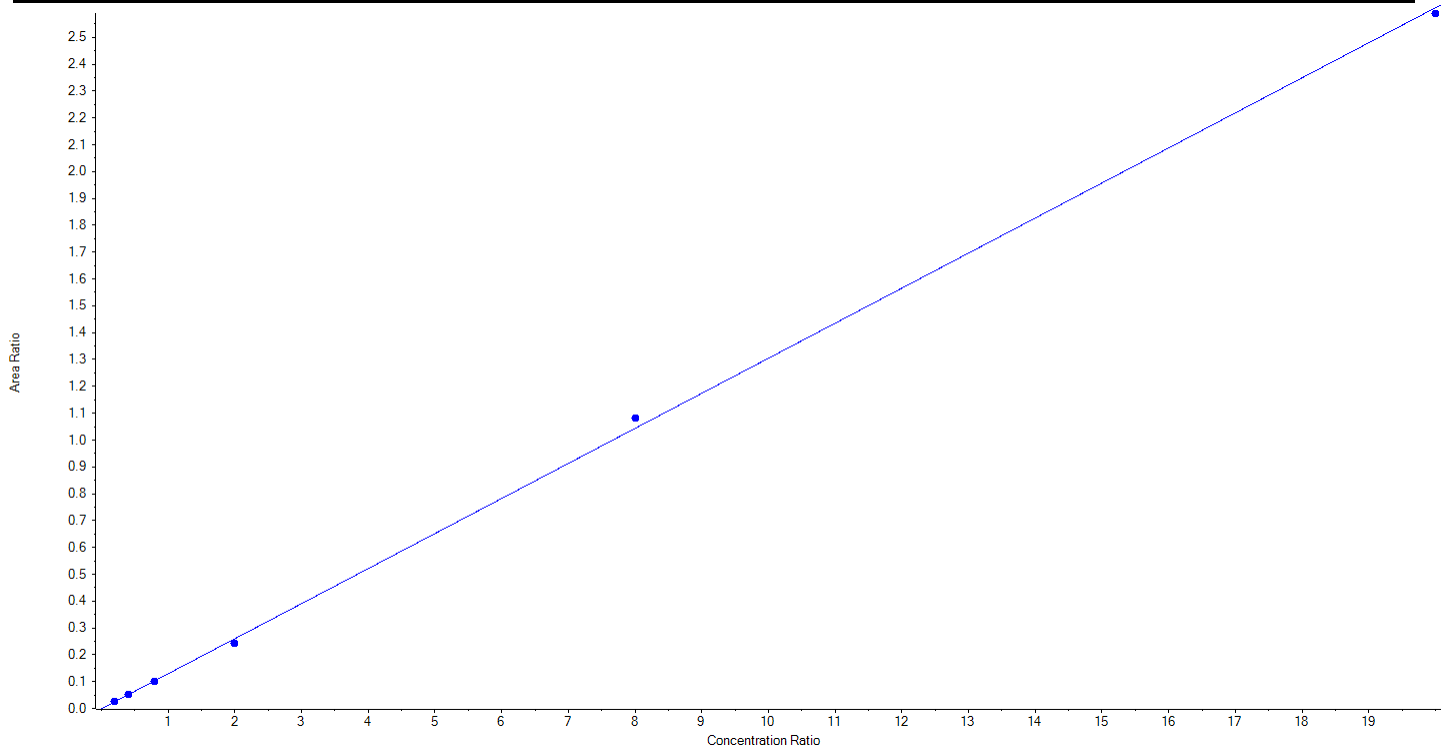
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Analyte Name	PFD _o A_2	Data File	AE_11162020_5-369.wiff
MRM Transition	613.0 / 319.0	Result Table	20-1481
Internal Standard	13C2-PFD _o A	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.13058x + -0.00119$ ($r = 0.99965$) (weighting: 1 / x) $r^2: 0.9993$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	254.15	101.7
3	LE53	L2	True	500.00	515.53	103.1
4	LE54	L3	True	1000.00	986.42	98.6
5	LE55	L4	True	2500.00	2346.89	93.9
6	LE56	L5	True	10000.00	10355.20	103.6
7	LE57	L6	True	25000.00	24791.82	99.2





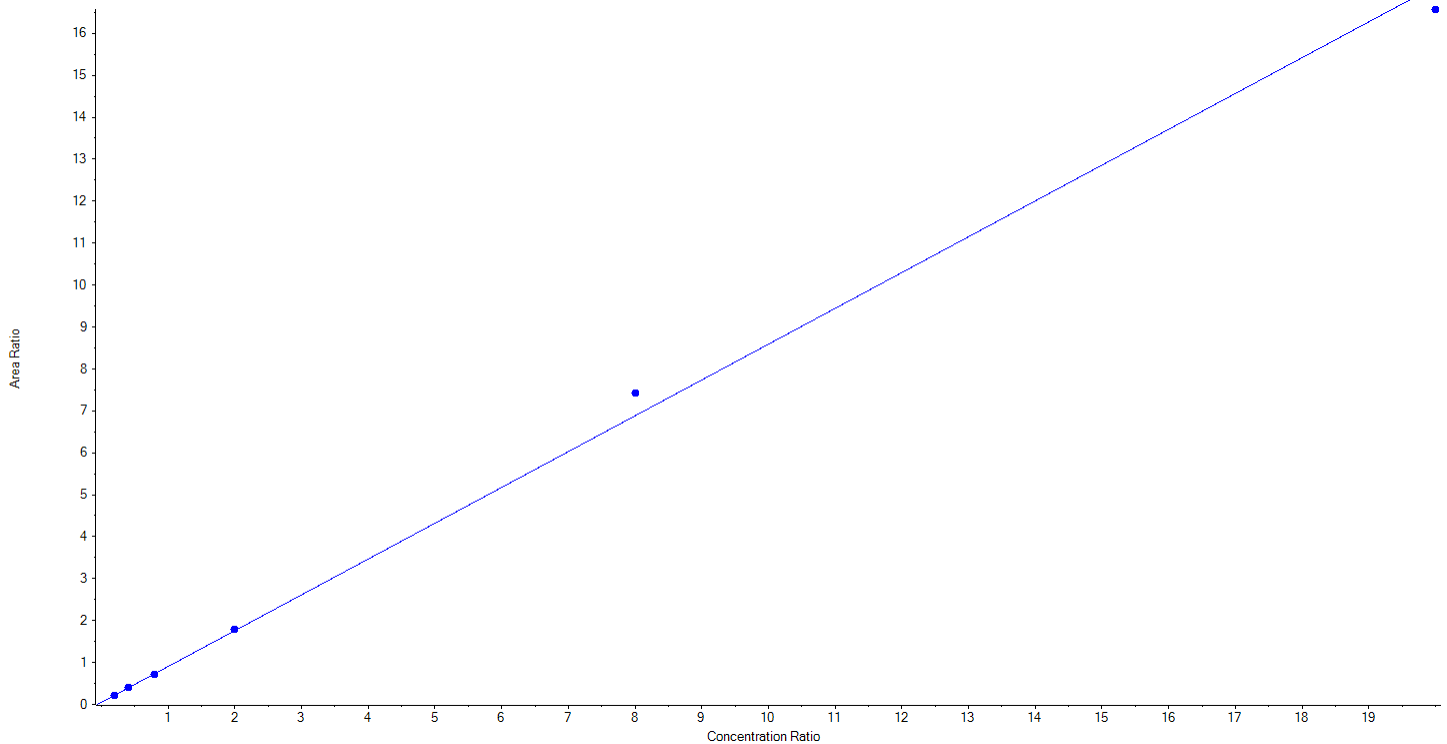
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Analyte Name	PFTrDA_1	Data File	AE_11162020_5-369.wiff
MRM Transition	663.0 / 619.0	Result Table	20-1481
Internal Standard	13C2-PFTeDA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.85376 x + 0.05249$ ($r = 0.99863$) (weighting: $1/x$) $r^2:0.9973$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	231.52	92.6
3	LE53	L2	True	500.00	514.75	103.0
4	LE54	L3	True	1000.00	983.72	98.4
5	LE55	L4	True	2500.00	2531.66	101.3
6	LE56	L5	True	10000.00	10808.60	108.1
7	LE57	L6	True	25000.00	24179.75	96.7





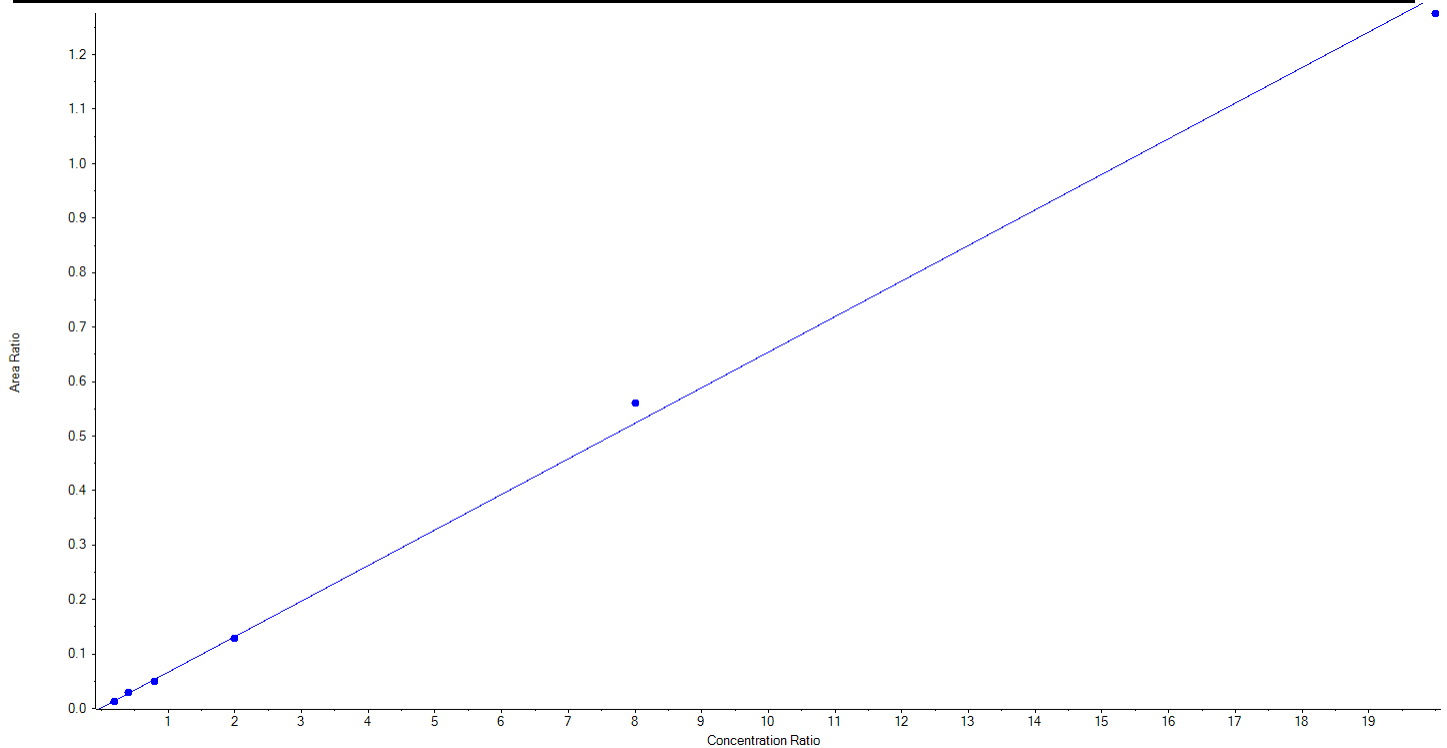
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Analyte Name	PFTrDA_2	Data File	AE_11162020_5-369.wiff
MRM Transition	663.0 / 169.0	Result Table	20-1481
Internal Standard	13C2-PFTeDA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.06528x + 0.00130$ ($r = 0.99891$) (weighting: $1/x$) $r^2: 0.9978$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	238.22	95.3
3	LE53	L2	True	500.00	545.87	109.2
4	LE54	L3	True	1000.00	940.22	94.0
5	LE55	L4	True	2500.00	2421.67	96.9
6	LE56	L5	True	10000.00	10705.22	107.1
7	LE57	L6	True	25000.00	24398.78	97.6





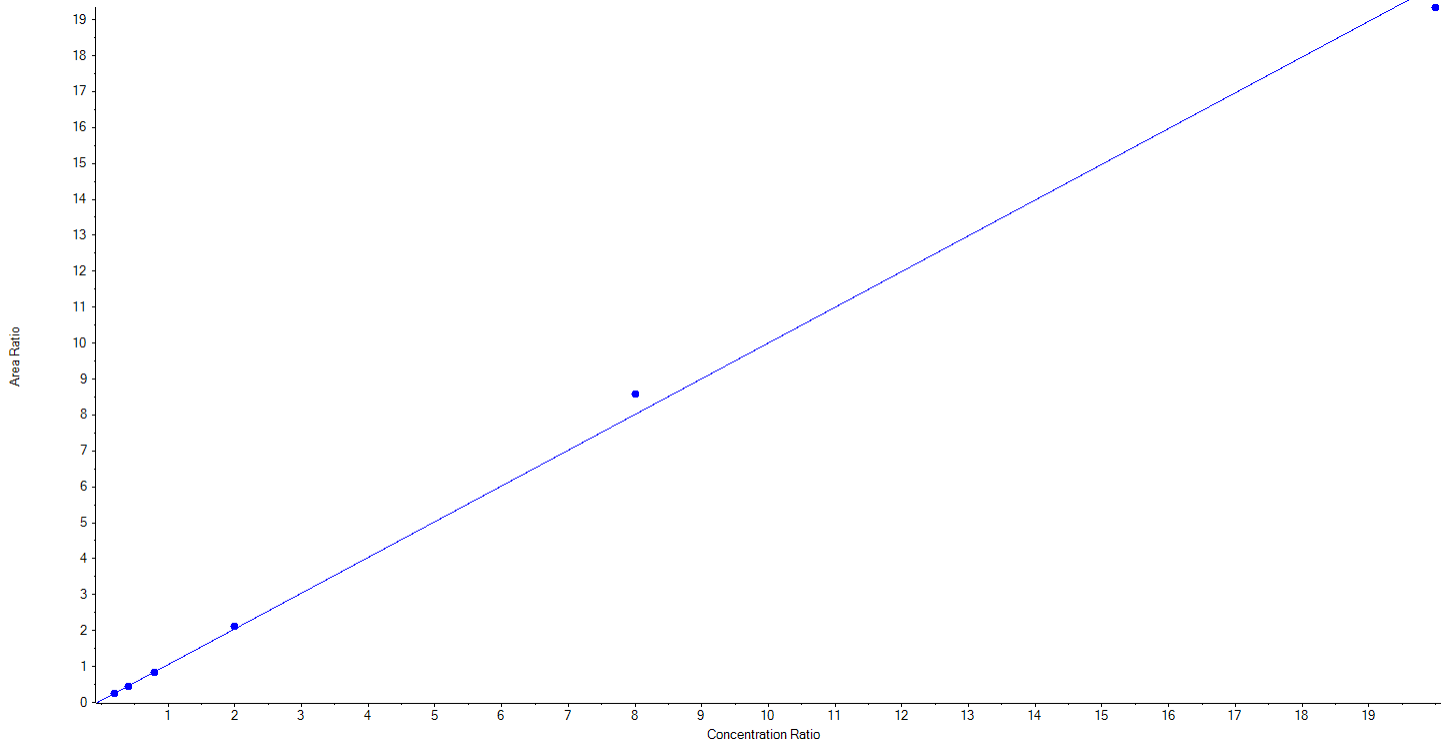
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Analyte Name	PFTeDA_1	Data File	AE_11162020_5-369.wiff
MRM Transition	713.0 / 669.0	Result Table	20-1481
Internal Standard	13C2-PFTeDA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.99445x + 0.05887$ ($r = 0.99885$) (weighting: $1/x$) $r^2: 0.9977$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	237.86	95.1
3	LE53	L2	True	500.00	495.40	99.1
4	LE54	L3	True	1000.00	985.21	98.5
5	LE55	L4	True	2500.00	2577.51	103.1
6	LE56	L5	True	10000.00	10723.37	107.2
7	LE57	L6	True	25000.00	24230.66	96.9





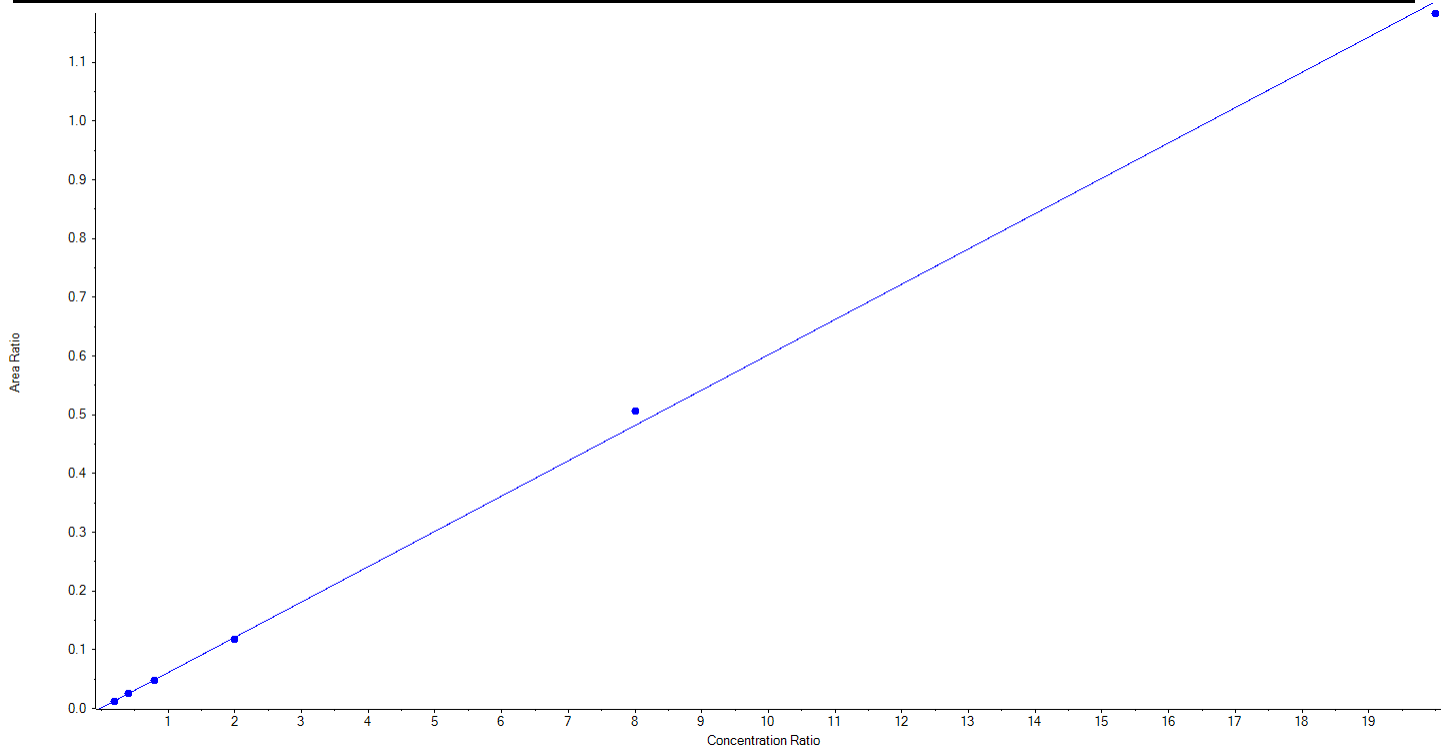
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Analyte Name	PFTeDA_2	Data File	AE_11162020_5-369.wiff
MRM Transition	713.0 / 169.0	Result Table	20-1481
Internal Standard	13C2-PFTeDA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.06011x + 9.70634e-4$ ($r = 0.99945$) (weighting: $1/x$) $r^2:0.9989$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	241.90	96.8
3	LE53	L2	True	500.00	527.69	105.5
4	LE54	L3	True	1000.00	976.41	97.6
5	LE55	L4	True	2500.00	2416.71	96.7
6	LE56	L5	True	10000.00	10507.41	105.1
7	LE57	L6	True	25000.00	24579.88	98.3





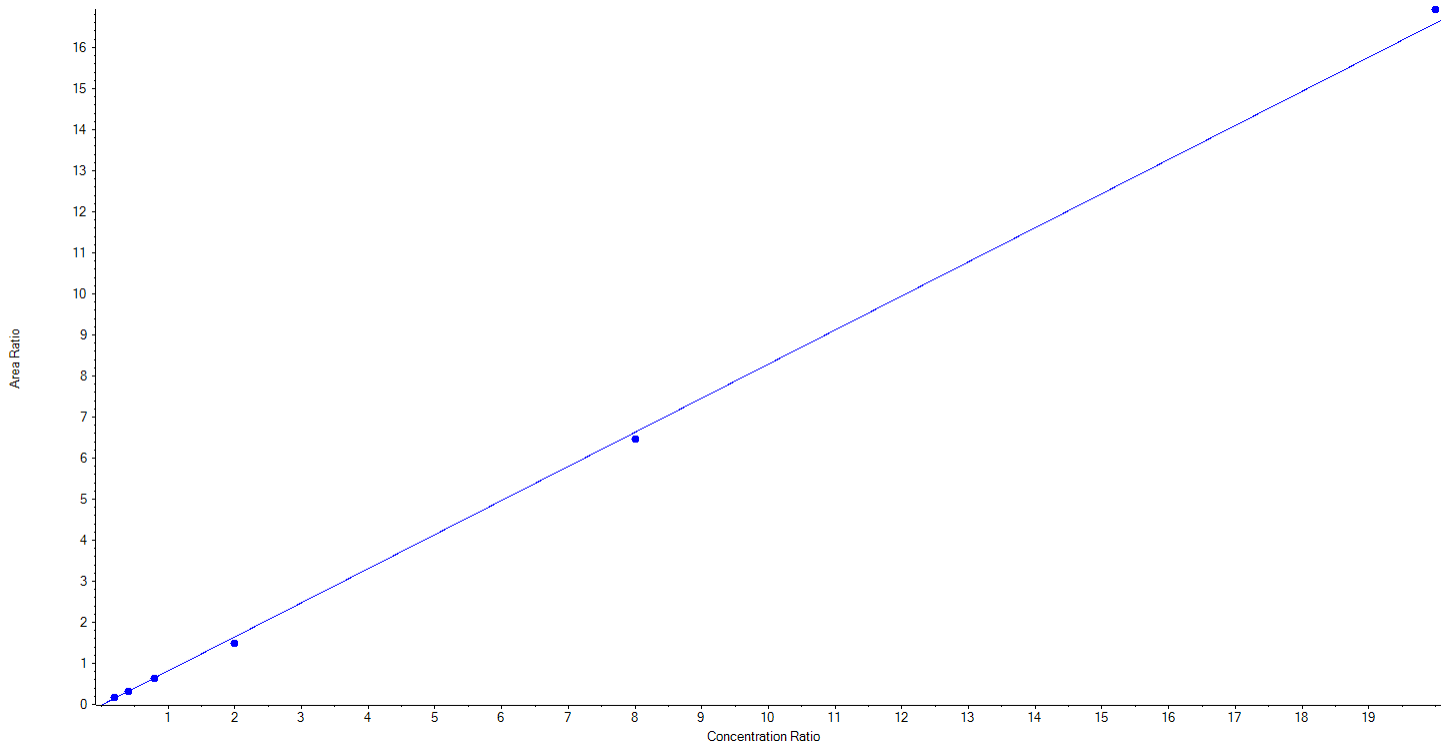
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Analyte Name	NMeFOSAA_1	Data File	AE_11162020_5-369.wiff
MRM Transition	570.0 / 419.0	Result Table	20-1481
Internal Standard	d3-MeFOSAA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.83031x + -0.01338$ ($r = 0.99932$) (weighting: $1/x$) $r^2: 0.9986$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	289.29	115.7
3	LE53	L2	True	500.00	481.29	96.3
4	LE54	L3	True	1000.00	982.50	98.3
5	LE55	L4	True	2500.00	2260.09	90.4
6	LE56	L5	True	10000.00	9737.82	97.4
7	LE57	L6	True	25000.00	25499.01	102.0





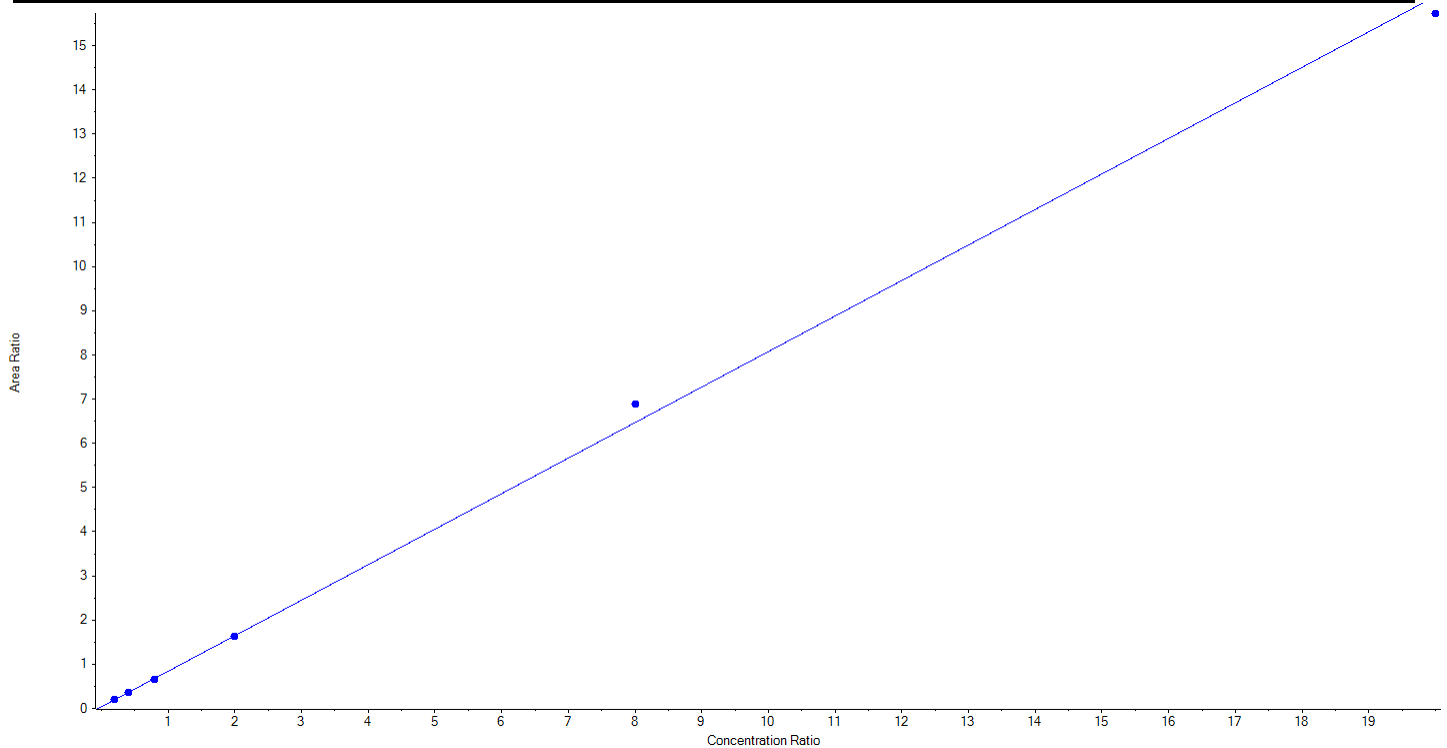
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Analyte Name	NMeFOSAA_2	Data File	AE_11162020_5-369.wiff
MRM Transition	570.0 / 512.0	Result Table	20-1481
Internal Standard	d3-MeFOSAA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.80391x + 0.03900$ ($r = 0.99916$) (weighting: $1/x$) $r^2:0.9983$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	240.16	96.1
3	LE53	L2	True	500.00	515.60	103.1
4	LE54	L3	True	1000.00	976.23	97.6
5	LE55	L4	True	2500.00	2479.00	99.2
6	LE56	L5	True	10000.00	10645.90	106.5
7	LE57	L6	True	25000.00	24393.10	97.6





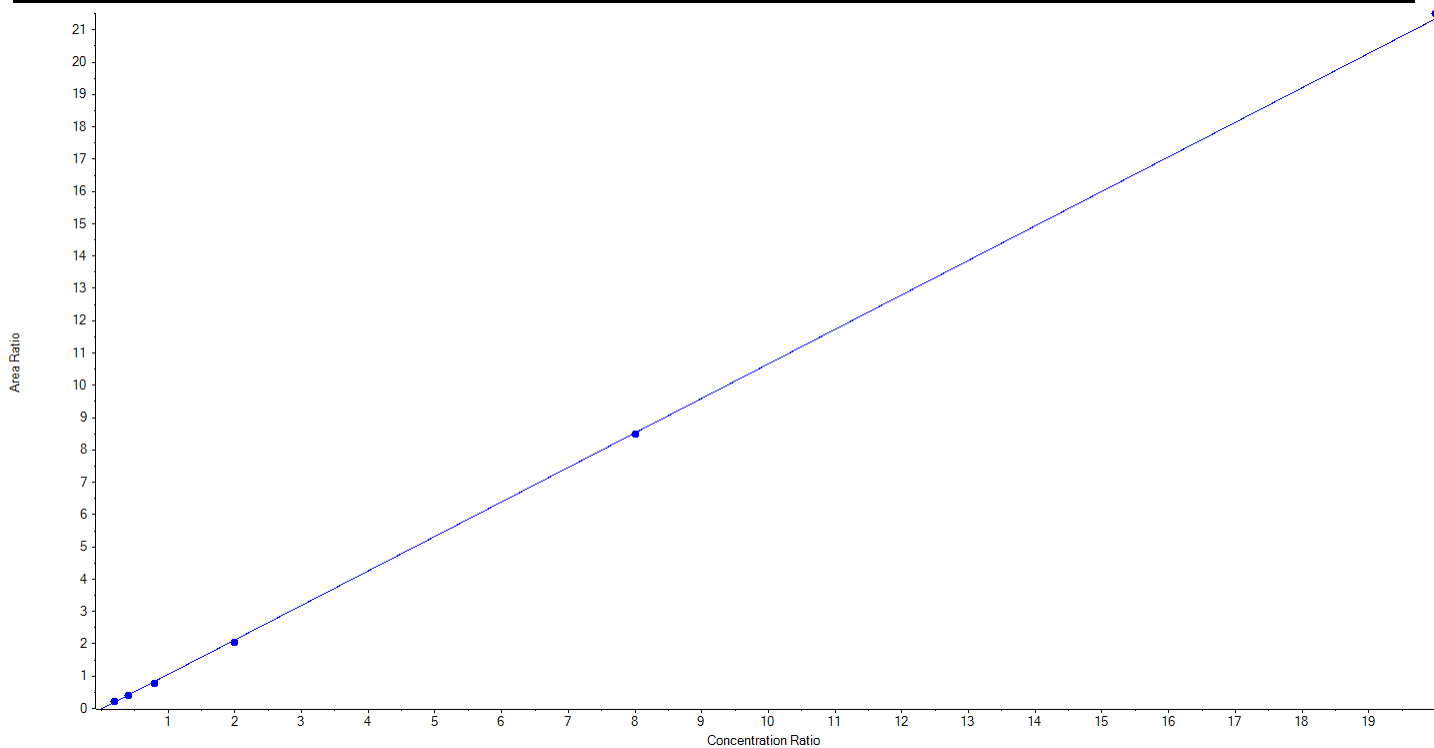
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Analyte Name	NEtFOSAA_1	Data File	AE_11162020_5-369.wiff
MRM Transition	584.0 / 419.0	Result Table	20-1481
Internal Standard	d5-EtFOSAA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.06773 x + -0.01268$ (r = 0.99978) (weighting: 1 / x) $r^2:0.9996$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	283.61	113.4
3	LE53	L2	True	500.00	483.30	96.7
4	LE54	L3	True	1000.00	938.29	93.8
5	LE55	L4	True	2500.00	2392.23	95.7
6	LE56	L5	True	10000.00	9961.13	99.6
7	LE57	L6	True	25000.00	25191.44	100.8





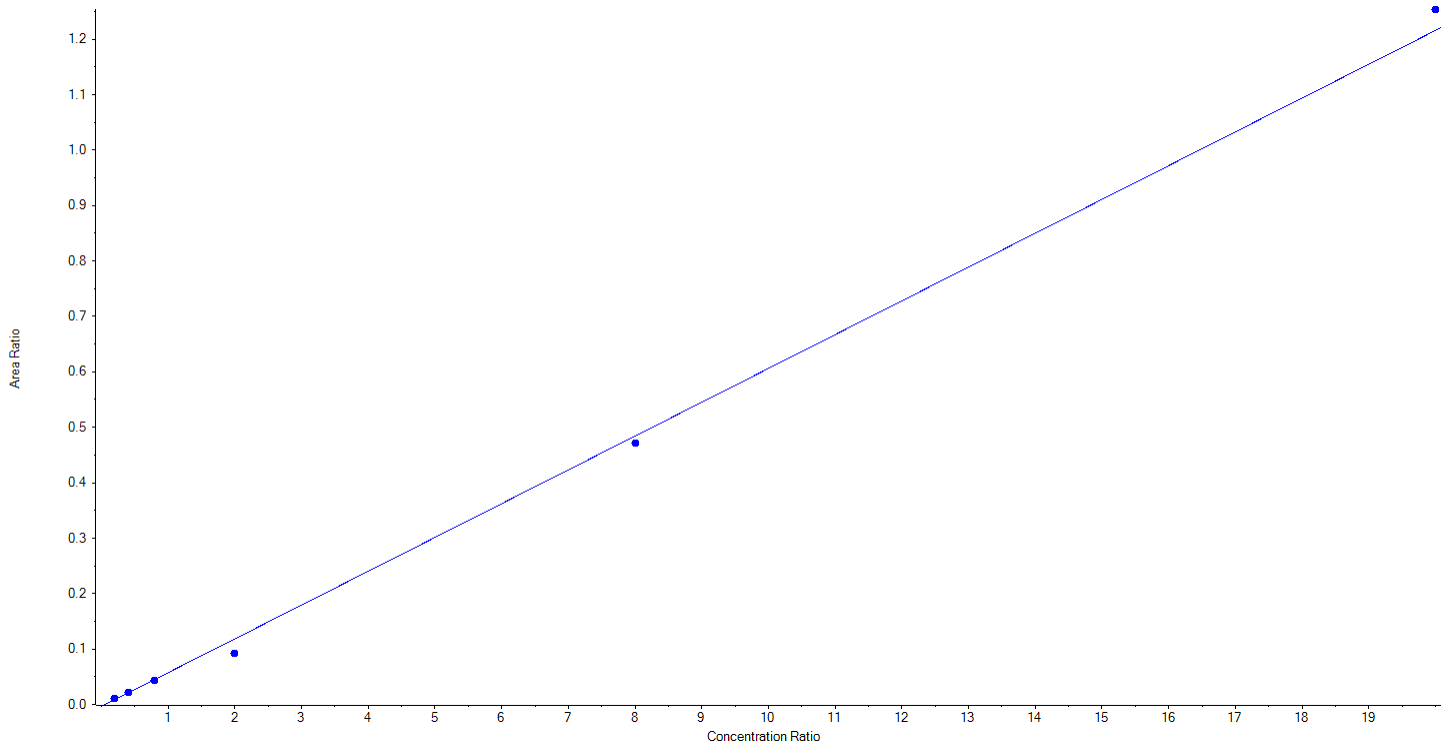
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Analyte Name	NEtFOSAA_2	Data File	AE_11162020_5-369.wiff
MRM Transition	584.0 / 483.0	Result Table	20-1481
Internal Standard	d5-EtFOSAA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.06096 x + -0.00349$ ($r = 0.99755$) (weighting: 1 / x) $r^2:0.9951$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	311.48	124.6
3	LE53	L2	True	500.00	499.40	99.9
4	LE54	L3	True	1000.00	971.55	97.2
5	LE55	L4	True	2500.00	1944.59	77.8
6	LE56	L5	True	10000.00	9749.26	97.5
7	LE57	L6	True	25000.00	25773.71	103.1





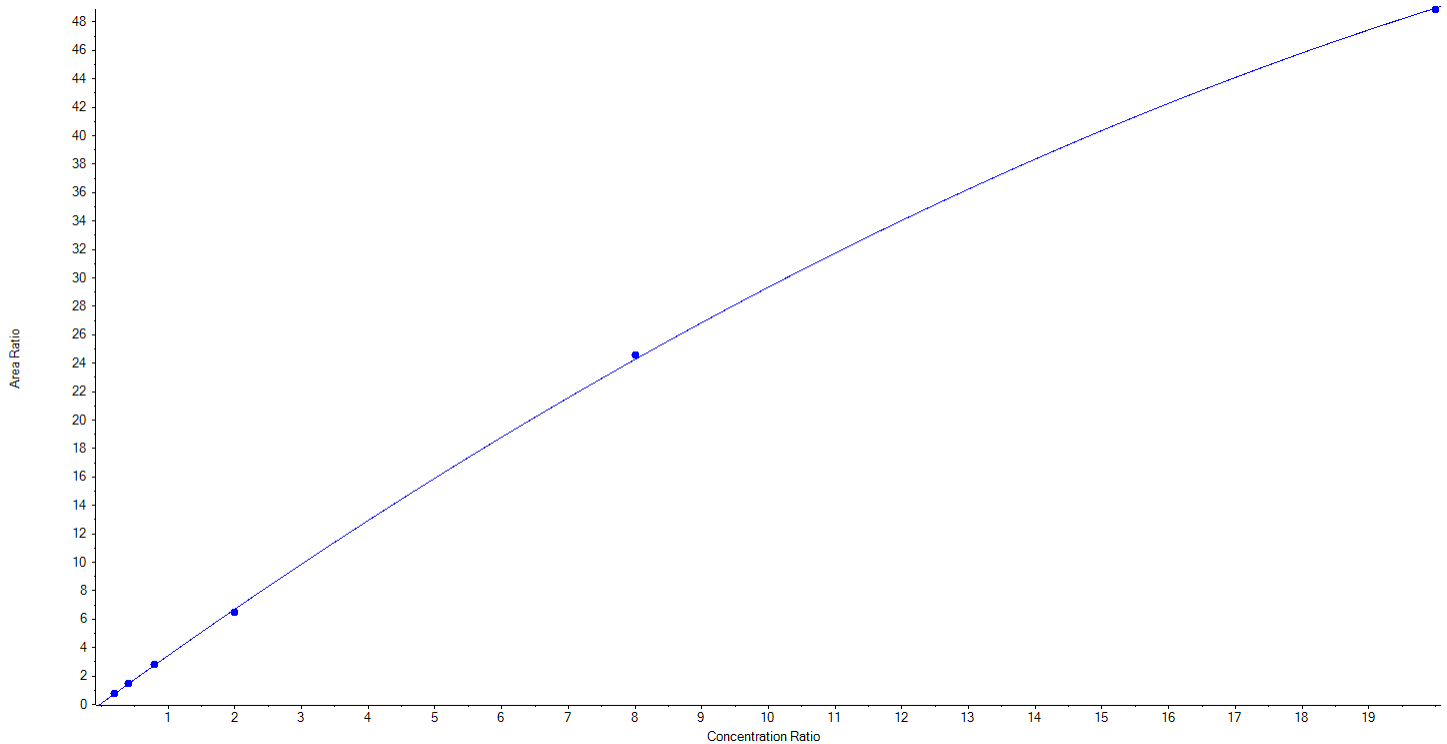
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Analyte Name	HFPO-DA_1	Data File	AE_11162020_5-369.wiff
MRM Transition	285.0 / 169.0	Result Table	20-1481
Internal Standard	13C3-HFPO-DA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = -0.04818 x^2 + 3.40782 x + 0.08179$ ($r = 0.99990$) (weighting: $1 / x$) $r^2: 0.9998$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	252.48	101.0
3	LE53	L2	True	500.00	505.95	101.2
4	LE54	L3	True	1000.00	1003.01	100.3
5	LE55	L4	True	2500.00	2409.72	96.4
6	LE56	L5	True	10000.00	10141.82	101.4
7	LE57	L6	True	25000.00	24918.37	99.7





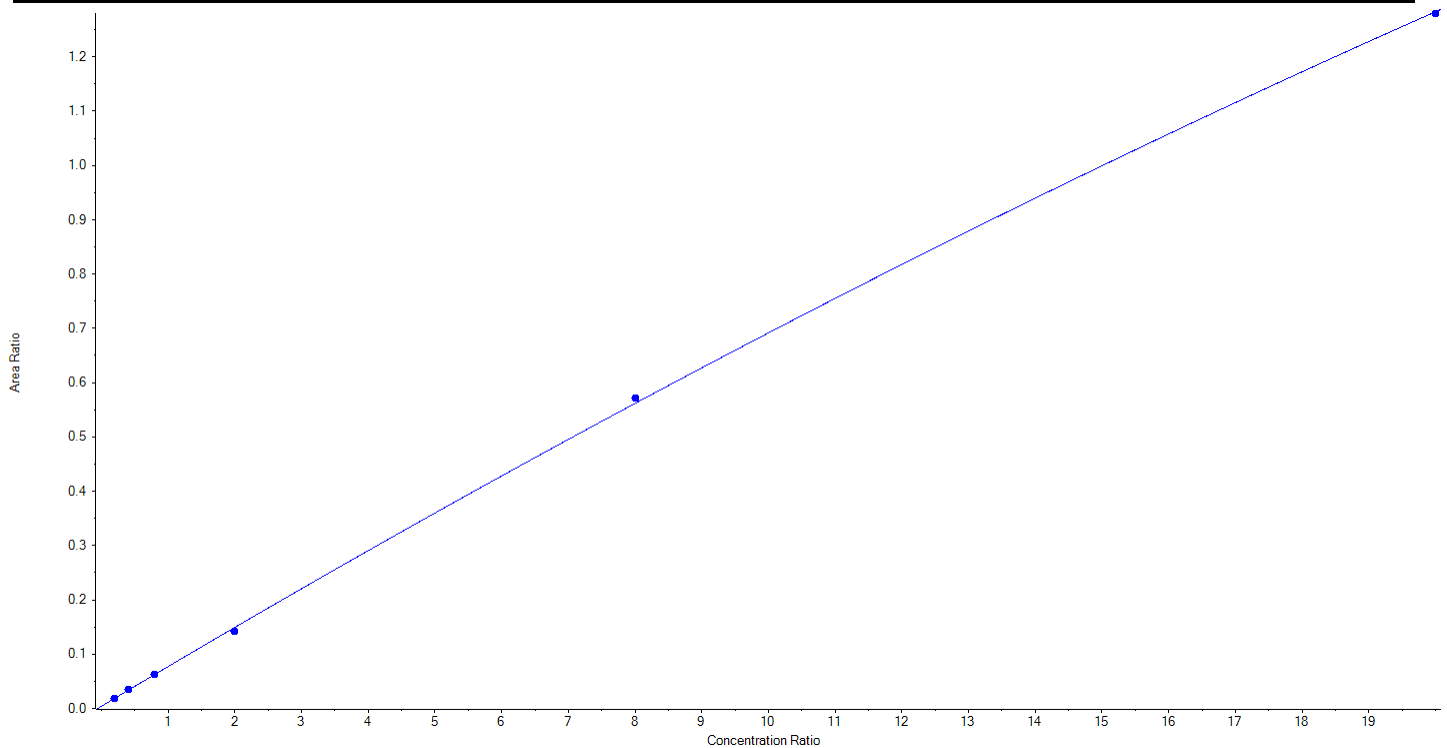
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Analyte Name	HFPO-DA_2	Data File	AE_11162020_5-369.wiff
MRM Transition	285.0 / 118.8	Result Table	20-1481
Internal Standard	13C3-HFPO-DA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = -4.80684e-4 x^2 + 0.07355 x + 0.00419$ ($r = 0.99976$) (weighting: 1 / x) $r^2:0.9995$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	244.46	97.8
3	LE53	L2	True	500.00	536.95	107.4
4	LE54	L3	True	1000.00	987.86	98.8
5	LE55	L4	True	2500.00	2360.49	94.4
6	LE56	L5	True	10000.00	10192.60	101.9
7	LE57	L6	True	25000.00	24924.88	99.7





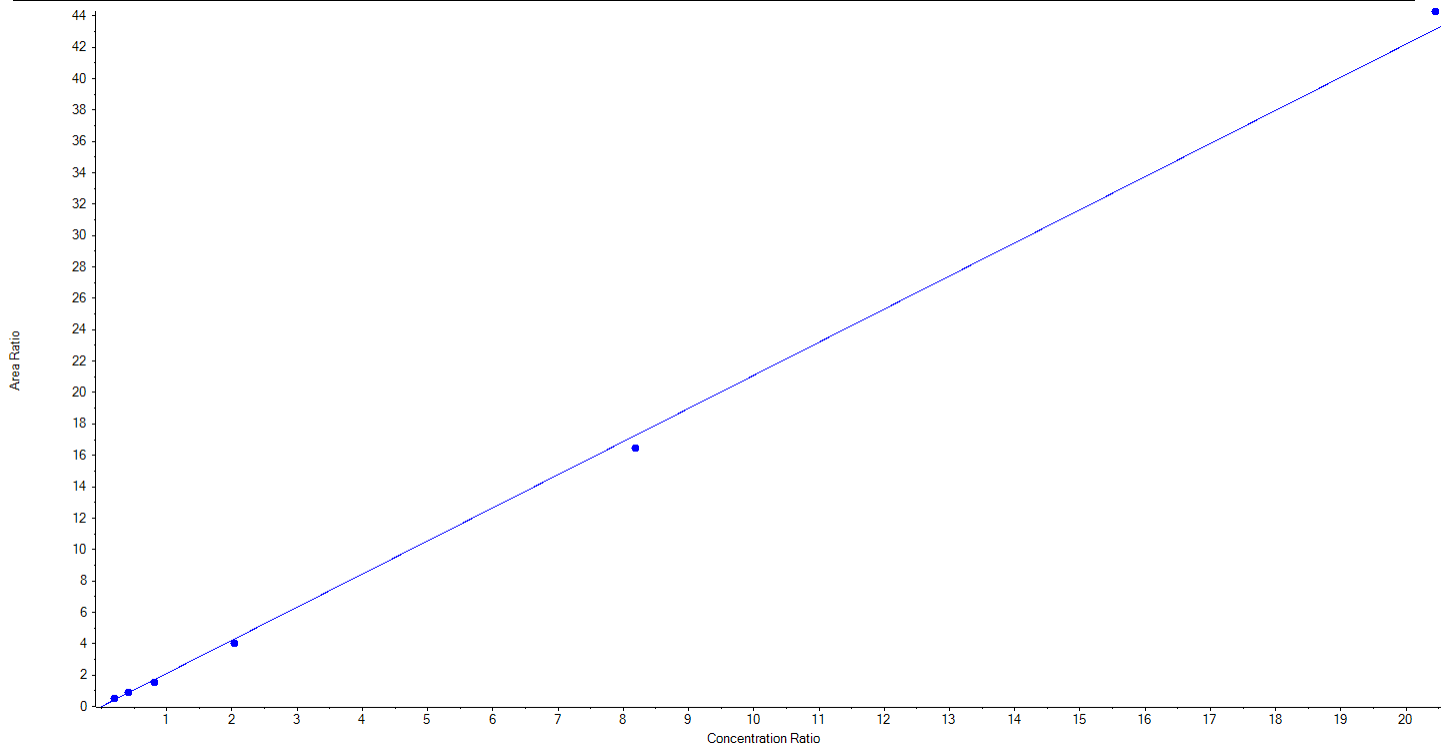
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Analyte Name	ADONA_1	Data File	AE_11162020_5-369.wiff
MRM Transition	377.0 / 251.0	Result Table	20-1481
Internal Standard	13C8-PFOA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 2.10986 x + -0.00243$ ($r = 0.99905$) (weighting: $1 / x$) $r^2: 0.9981$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	283.27	113.3
3	LE53	L2	True	500.00	529.77	106.0
4	LE54	L3	True	1000.00	890.38	89.0
5	LE55	L4	True	2500.00	2338.60	93.5
6	LE56	L5	True	10000.00	9554.34	95.5
7	LE57	L6	True	25000.00	25653.64	102.6





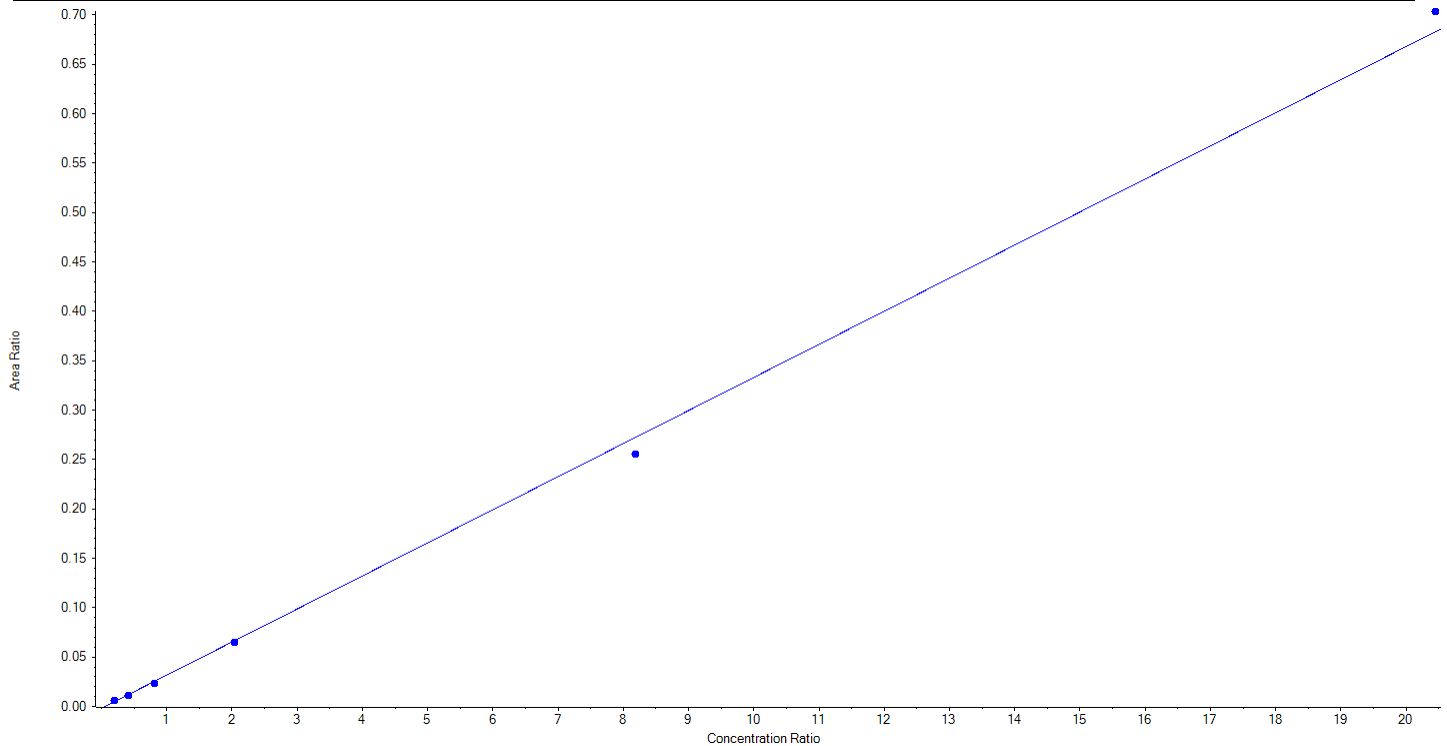
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Analyte Name	ADONA_2	Data File	AE_11162020_5-369.wiff
MRM Transition	377.0 / 85.0	Result Table	20-1481
Internal Standard	13C8-PFOA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.03349x + -0.00176$ ($r = 0.99883$) (weighting: $1/x$) $r^2: 0.9977$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	297.36	119.0
3	LE53	L2	True	500.00	480.67	96.1
4	LE54	L3	True	1000.00	905.99	90.6
5	LE55	L4	True	2500.00	2437.99	97.5
6	LE56	L5	True	10000.00	9381.55	93.8
7	LE57	L6	True	25000.00	25746.43	103.0





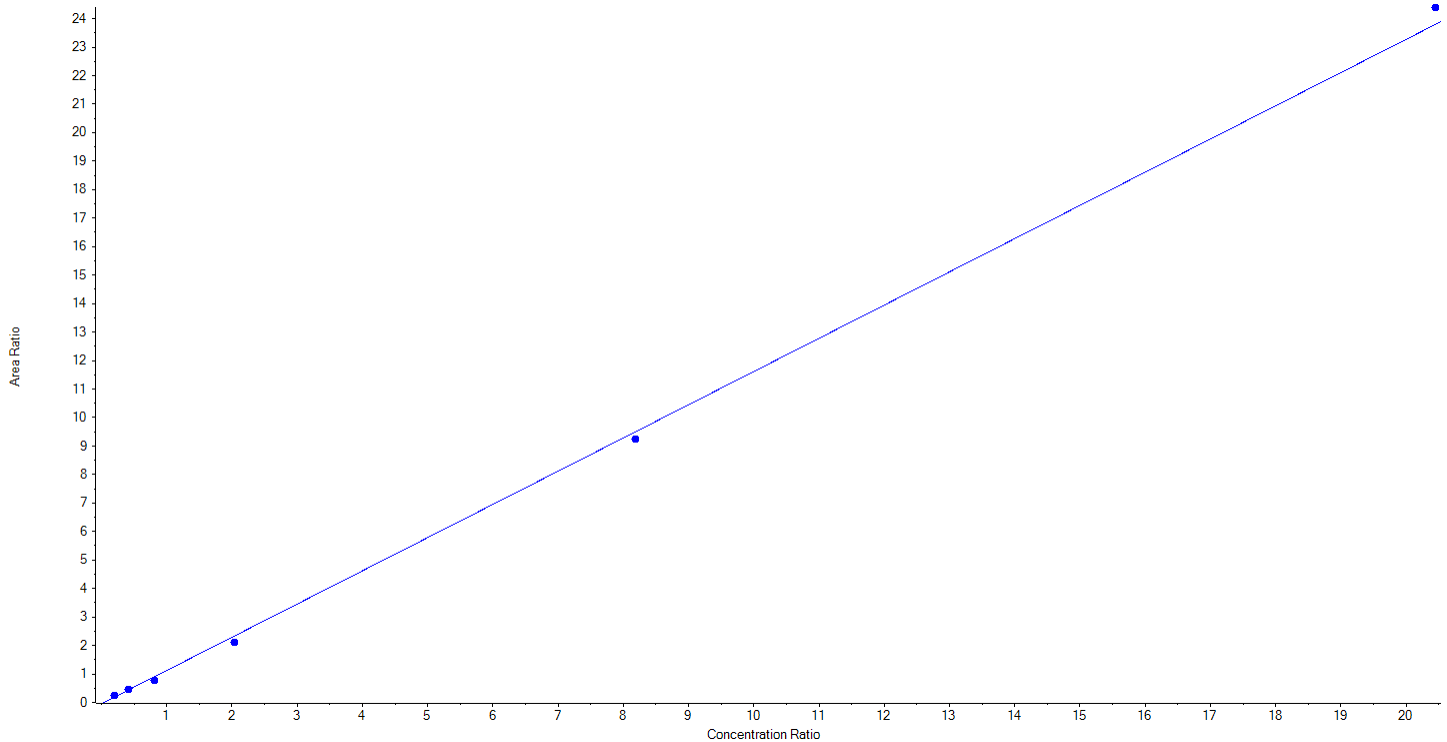
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Analyte Name	9CI-PF3ONS_1	Data File	AE_11162020_5-369.wiff
MRM Transition	531.0 / 351.0	Result Table	20-1481
Internal Standard	13C8-PFOA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.16577 x + -0.04280$ ($r = 0.99874$) (weighting: $1 / x$) $r^2:0.9975$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	305.30	122.1
3	LE53	L2	True	500.00	519.87	104.0
4	LE54	L3	True	1000.00	846.86	84.7
5	LE55	L4	True	2500.00	2238.74	89.6
6	LE56	L5	True	10000.00	9719.03	97.2
7	LE57	L6	True	25000.00	25620.21	102.5





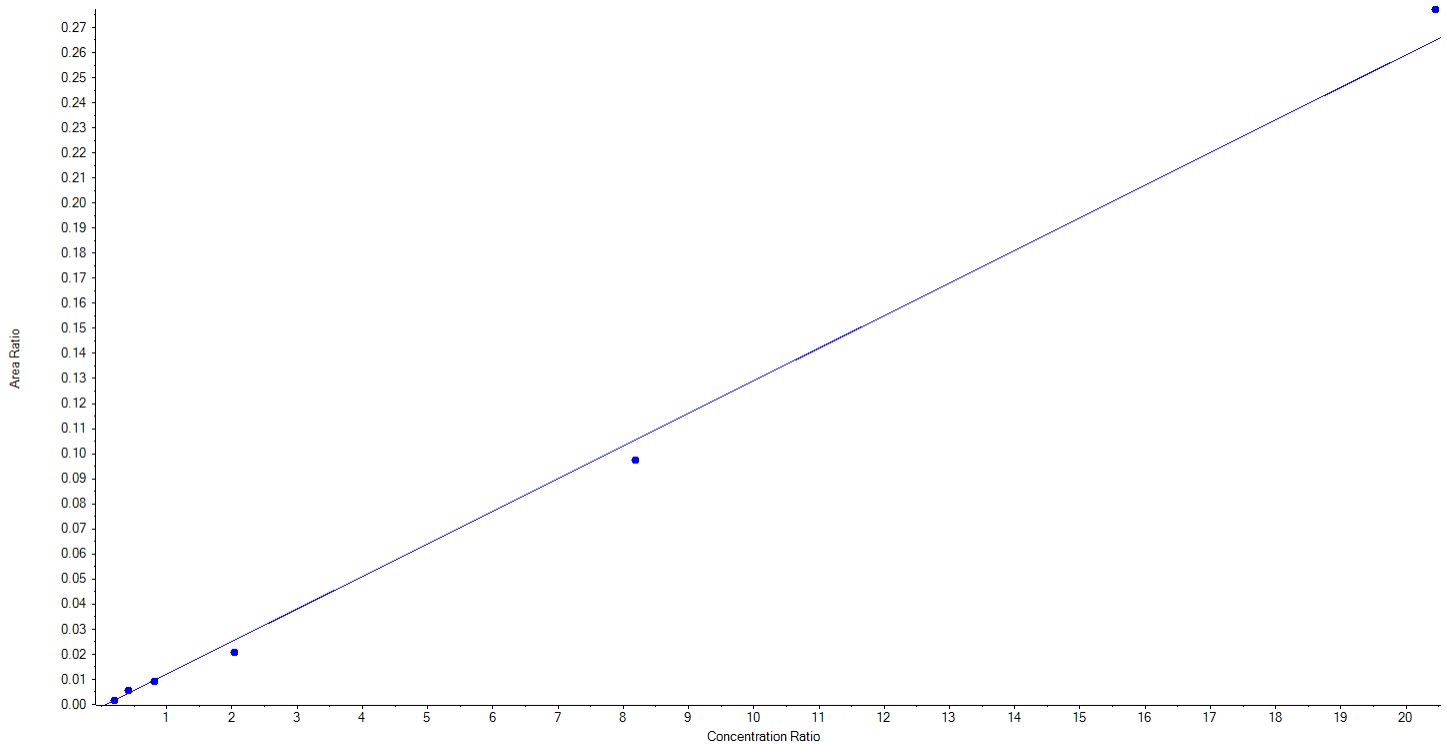
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Analyte Name	9CI-PF3ONS_2	Data File	AE_11162020_5-369.wiff
MRM Transition	531.0 / 83.0	Result Table	20-1481
Internal Standard	13C8-PFOA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.01300 x + -9.11935e-4$ ($r = 0.99673$) (weighting: $1 / x$) $r^2:0.9935$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	254.40	101.8
3	LE53	L2	True	500.00	620.08	124.0
4	LE54	L3	True	1000.00	956.46	95.7
5	LE55	L4	True	2500.00	2042.33	81.7
6	LE56	L5	True	10000.00	9229.78	92.3
7	LE57	L6	True	25000.00	26146.95	104.6





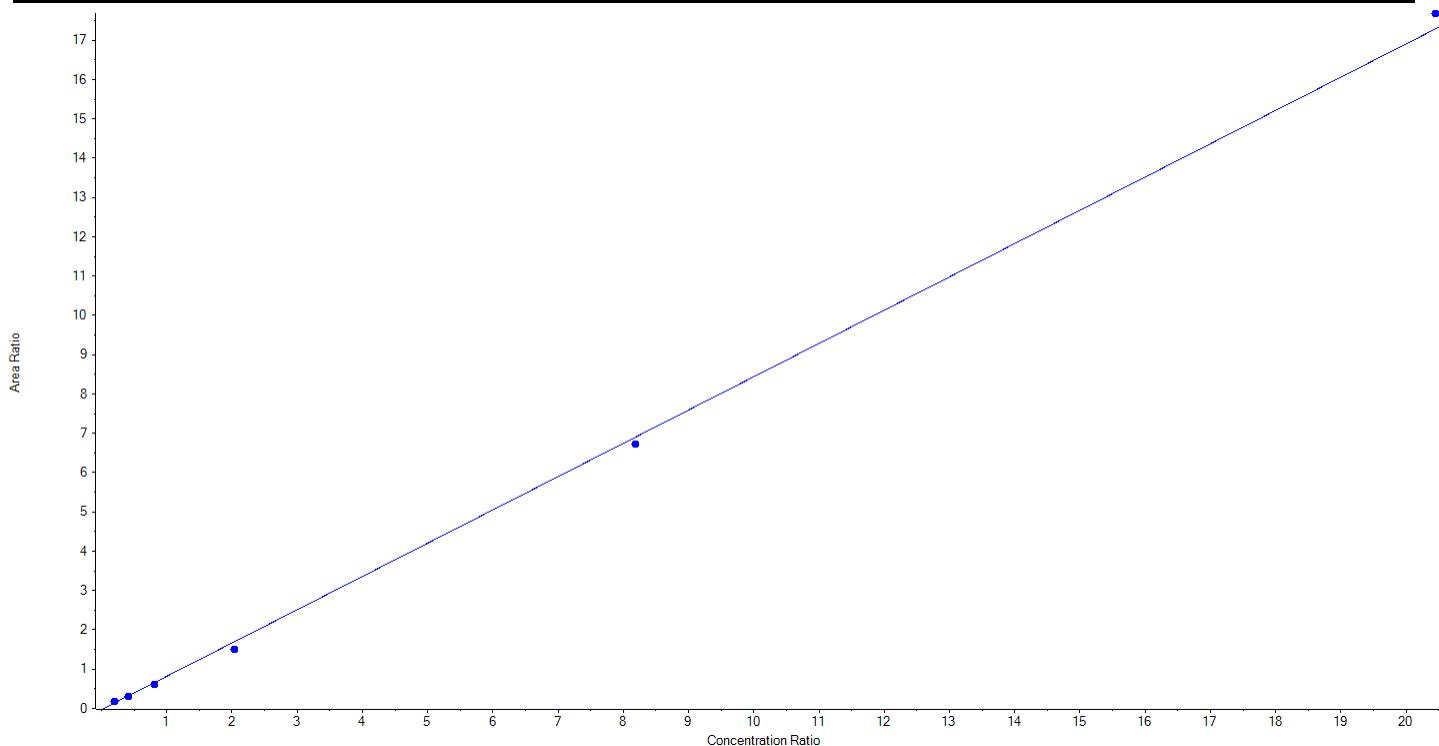
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Analyte Name	11Cl-pf3OUdS_1	Data File	AE_11162020_5-369.wiff
MRM Transition	631.0 / 451.0	Result Table	20-1481
Internal Standard	13C8-PFOA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.84674 x + -0.02818$ ($r = 0.99903$) (weighting: $1 / x$) $r^2: 0.9981$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	302.59	121.0
3	LE53	L2	True	500.00	492.17	98.4
4	LE54	L3	True	1000.00	917.39	91.7
5	LE55	L4	True	2500.00	2226.67	89.1
6	LE56	L5	True	10000.00	9746.49	97.5
7	LE57	L6	True	25000.00	25564.68	102.3





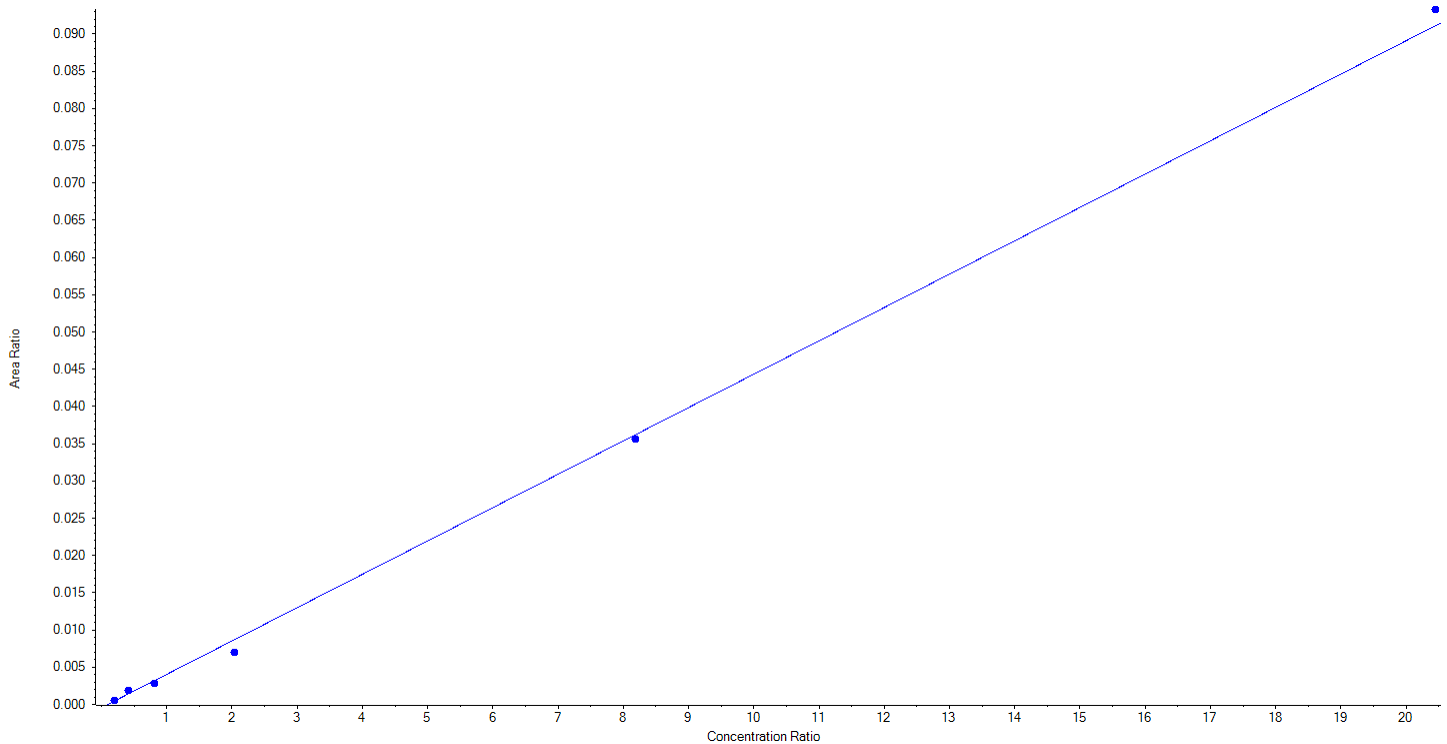
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Analyte Name	11Cl-pf3OUdS_2	Data File	AE_11162020_5-369.wiff
MRM Transition	631.0 / 83.0	Result Table	20-1481
Internal Standard	13C8-PFOA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.00448x + -4.30153e-4$ ($r = 0.99792$) (weighting: $1/x$) $r^2: 0.9958$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	250.00	258.68	103.5
3	LE53	L2	True	500.00	620.33	124.1
4	LE54	L3	True	1000.00	905.33	90.5
5	LE55	L4	True	2500.00	2027.81	81.1
6	LE56	L5	True	10000.00	9844.57	98.5
7	LE57	L6	True	25000.00	25593.29	102.4





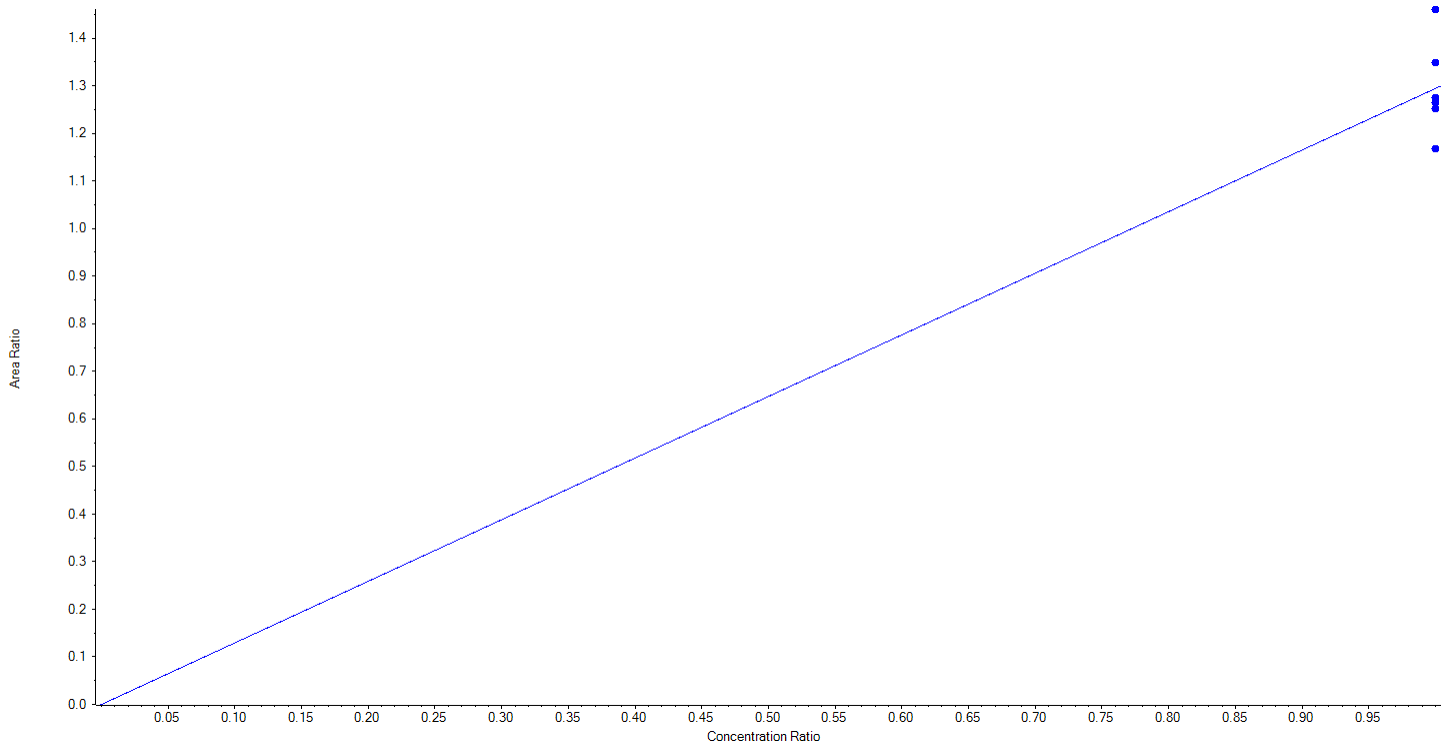
Calibration Summary Report

Created with Analyst Reporter
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Analyte Name	13C2-PFDoA	Data File	AE_11162020_5-369.wiff
MRM Transition	615.0 / 570.0	Result Table	20-1481_SIS
Internal Standard	13C2-PFDA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.29436 x$ (std. dev. = 0.09956) (weighting: None) r^2 :N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	1250.00	1302.12	104.2
3	LE53	L2	True	1250.00	1208.11	96.7
4	LE54	L3	True	1250.00	1127.83	90.2
5	LE55	L4	True	1250.00	1230.43	98.4
6	LE56	L5	True	1250.00	1221.42	97.7
7	LE57	L6	True	1250.00	1410.09	112.8





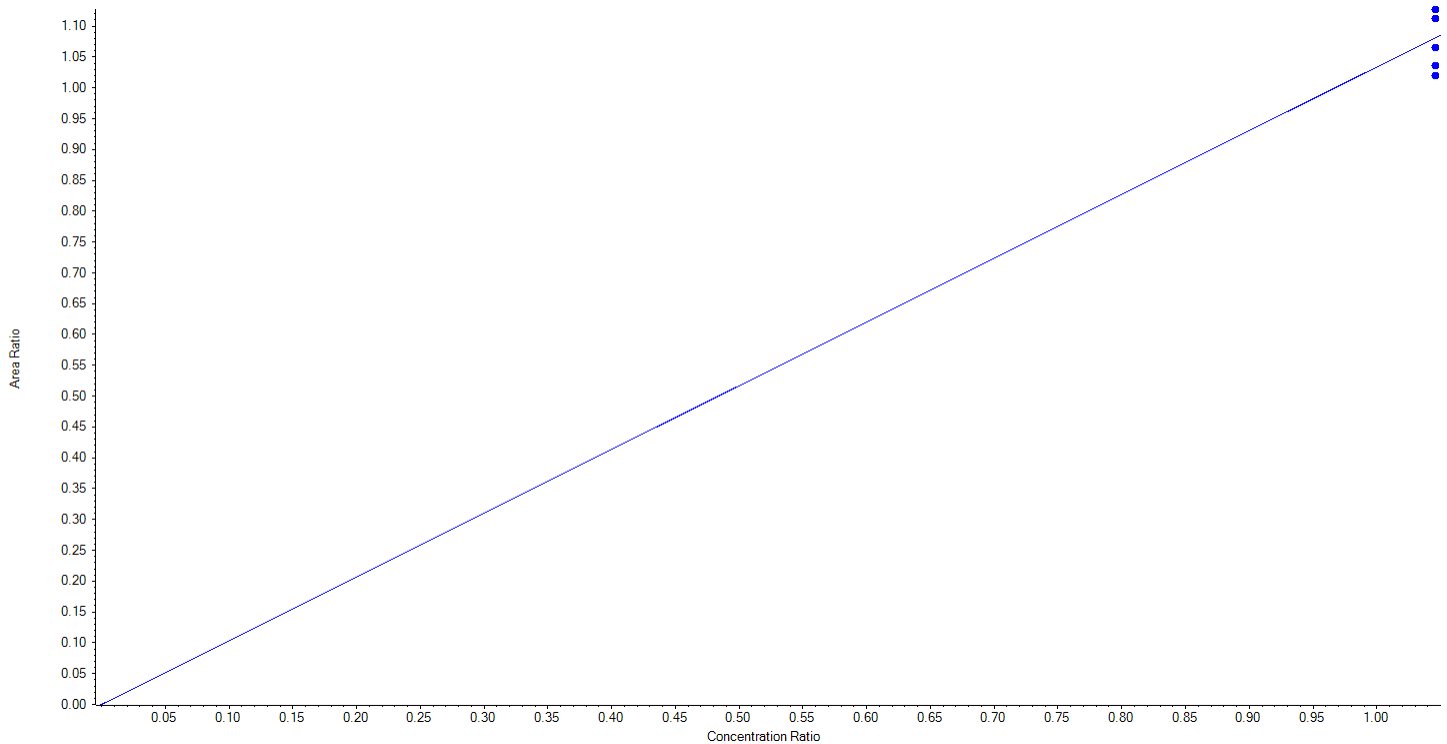
Calibration Summary Report

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Analyte Name	d3-MeFOSAA	Data File	AE_11162020_5-369.wiff
MRM Transition	573.0 / 419.0	Result Table	20-1481_SIS
Internal Standard	13C4-PFOS	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.03379 x$ (std. dev. = 0.04529) (weighting: None) r^2 : N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	1250.00	1286.55	102.9
3	LE53	L2	True	1250.00	1197.66	95.8
4	LE54	L3	True	1250.00	1232.14	98.6
5	LE55	L4	True	1250.00	1178.66	94.3
6	LE56	L5	True	1250.00	1302.33	104.2
7	LE57	L6	True	1250.00	1302.66	104.2





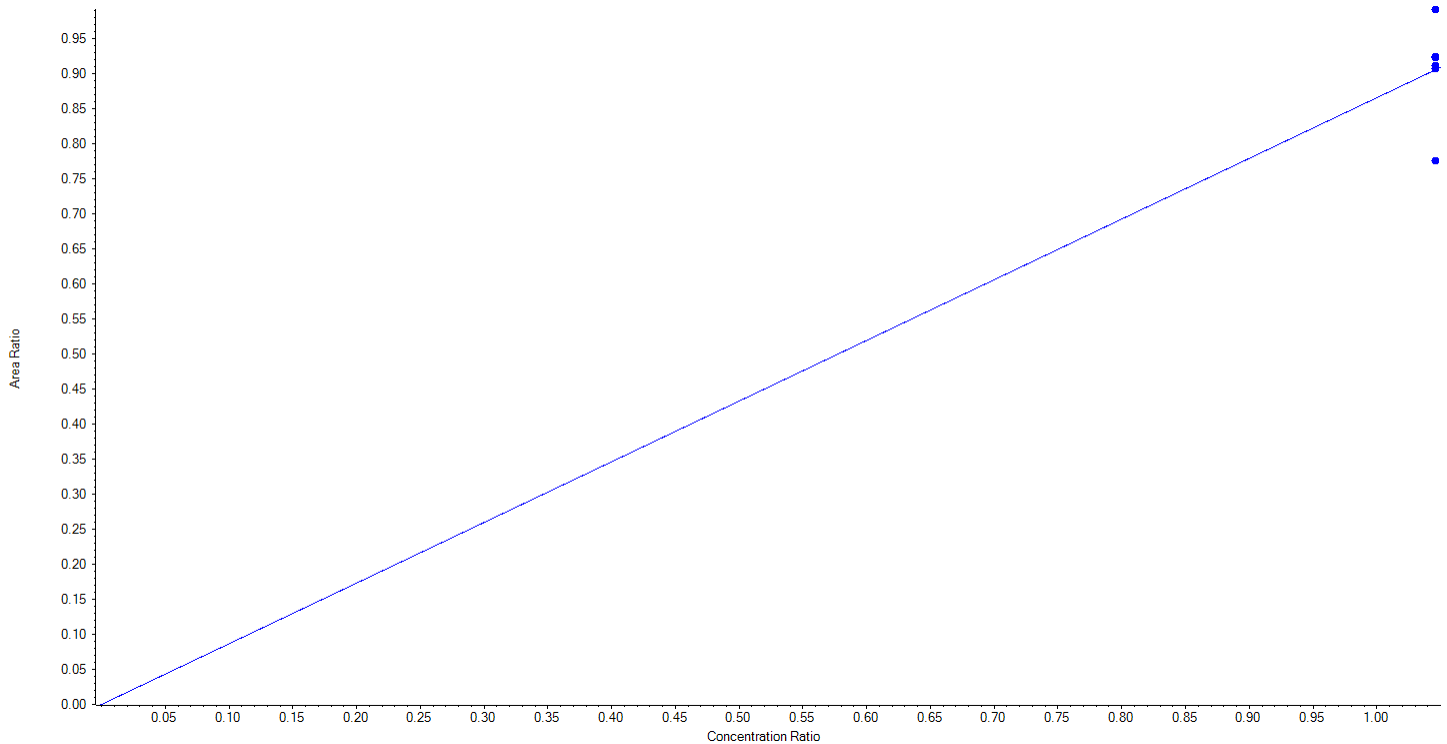
Calibration Summary Report

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Analyte Name	d5-EtFOSAA	Data File	AE_11162020_5-369.wiff
MRM Transition	589.0 / 419.0	Result Table	20-1481_SIS
Internal Standard	13C4-PFOS	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.86552 x$ (std. dev. = 0.06762) (weighting: None) r^2 :N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	1250.00	1273.58	101.9
3	LE53	L2	True	1250.00	1276.84	102.2
4	LE54	L3	True	1250.00	1368.66	109.5
5	LE55	L4	True	1250.00	1252.29	100.2
6	LE56	L5	True	1250.00	1258.22	100.7
7	LE57	L6	True	1250.00	1070.41	85.6





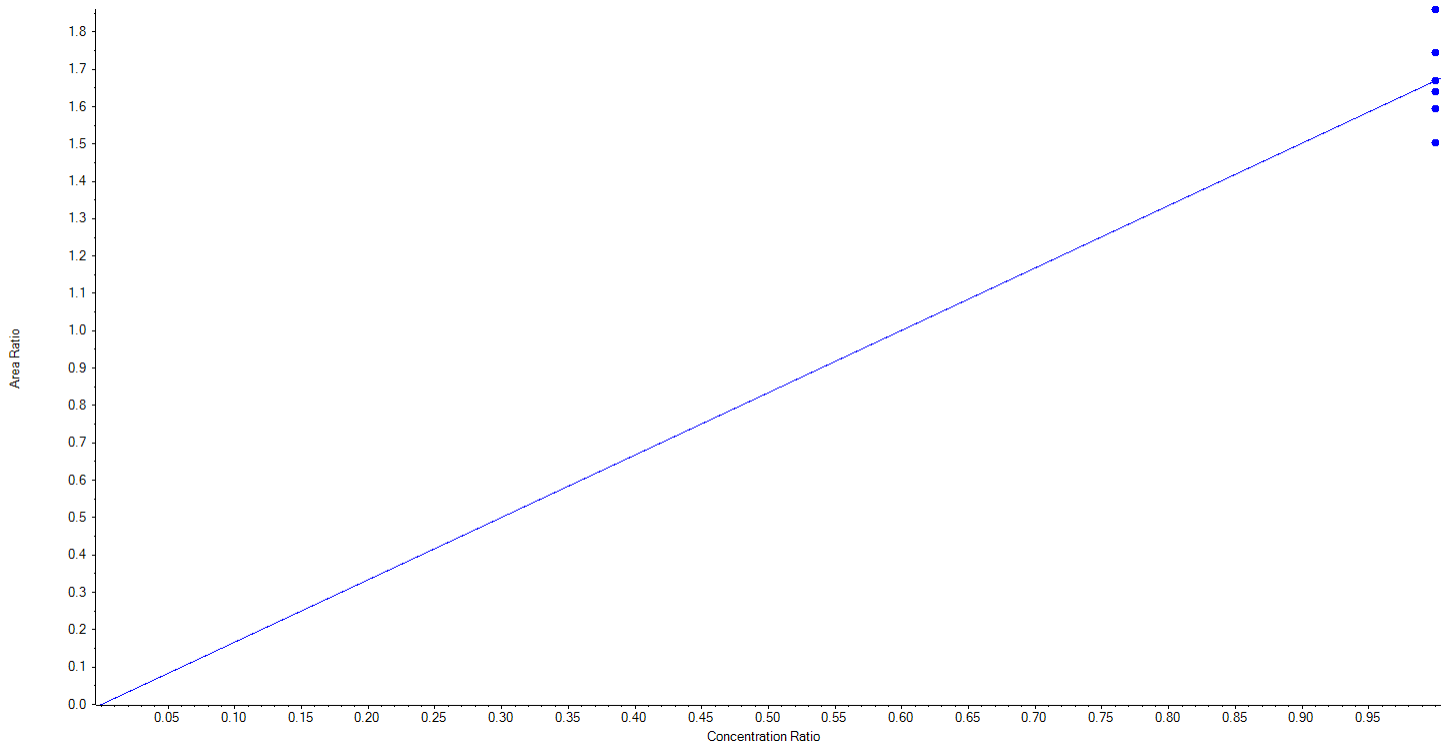
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Analyte Name	13C5-PFHxA	Data File	AE_11162020_5-369.wiff
MRM Transition	318.0 / 273.0	Result Table	20-1481_SIS
Internal Standard	13C2-PFOA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.66898 x$ (std. dev. = 0.12312) (weighting: None) r^2 :N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	1250.00	1227.96	98.2
3	LE53	L2	True	1250.00	1307.01	104.6
4	LE54	L3	True	1250.00	1392.79	111.4
5	LE55	L4	True	1250.00	1195.09	95.6
6	LE56	L5	True	1250.00	1251.14	100.1
7	LE57	L6	True	1250.00	1126.02	90.1





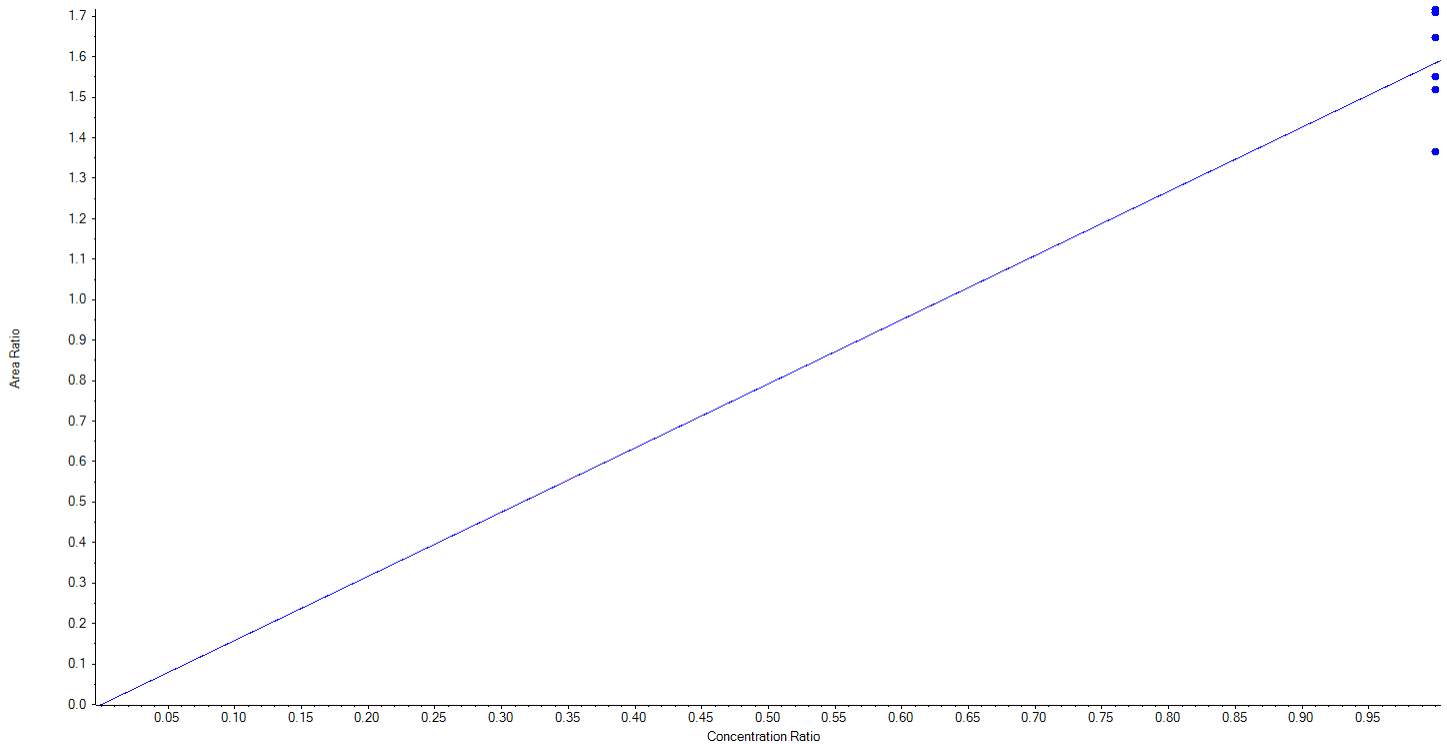
Calibration Summary Report

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Analyte Name	13C4-PFHpA	Data File	AE_11162020_5-369.wiff
MRM Transition	367.0 / 322.0	Result Table	20-1481_SIS
Internal Standard	13C2-PFOA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.58452 x$ (std. dev. = 0.13419) (weighting: None) r^2 :N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	1250.00	1298.86	103.9
3	LE53	L2	True	1250.00	1354.31	108.3
4	LE54	L3	True	1250.00	1347.82	107.8
5	LE55	L4	True	1250.00	1224.08	97.9
6	LE56	L5	True	1250.00	1077.49	86.2
7	LE57	L6	True	1250.00	1197.44	95.8





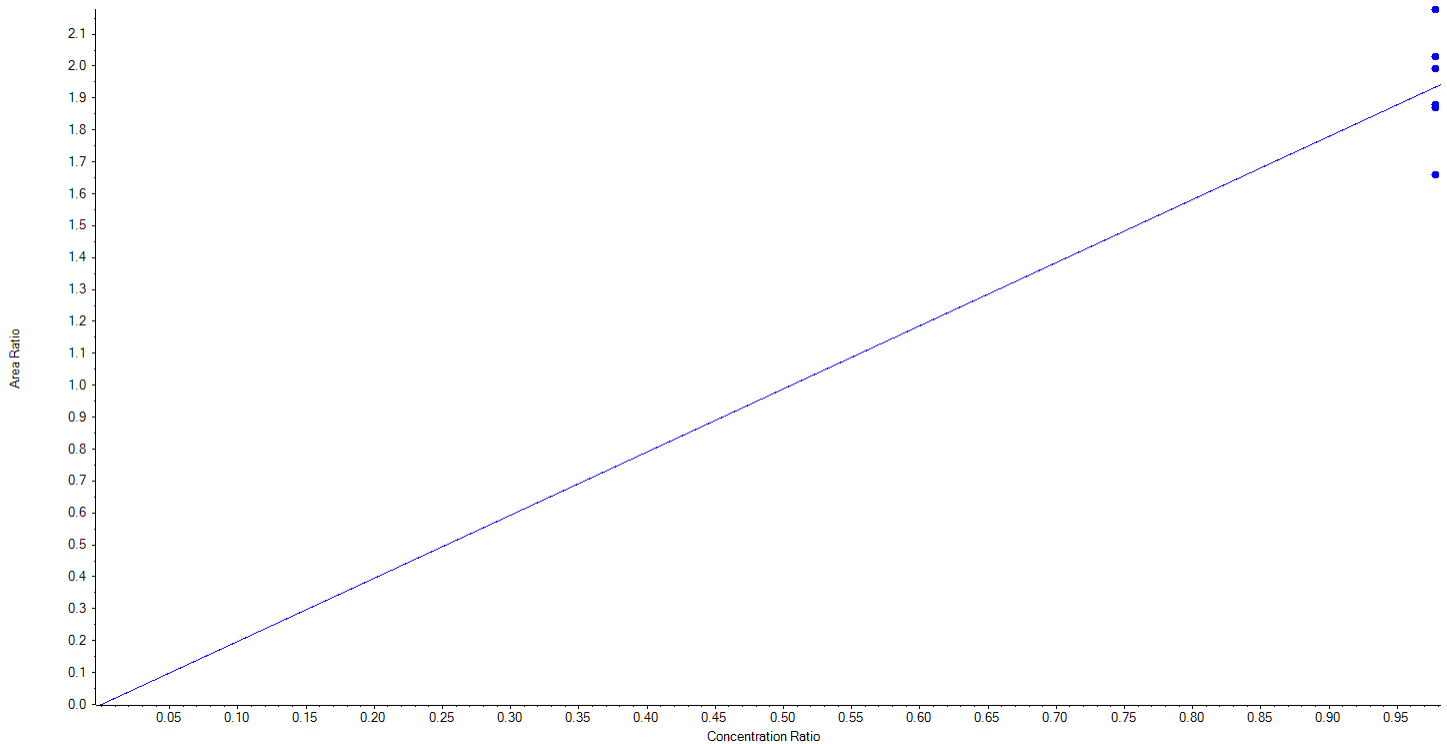
Calibration Summary Report

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Analyte Name	13C8-PFOA	Data File	AE_11162020_5-369.wiff
MRM Transition	421.0 / 376.0	Result Table	20-1481_SIS
Internal Standard	13C2-PFOA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.97768 x$ (std. dev. = 0.18000) (weighting: None) r^2 :N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	1222.50	1186.84	97.1
3	LE53	L2	True	1222.50	1282.92	104.9
4	LE54	L3	True	1222.50	1376.11	112.6
5	LE55	L4	True	1222.50	1259.42	103.0
6	LE56	L5	True	1222.50	1181.36	96.6
7	LE57	L6	True	1222.50	1048.35	85.8





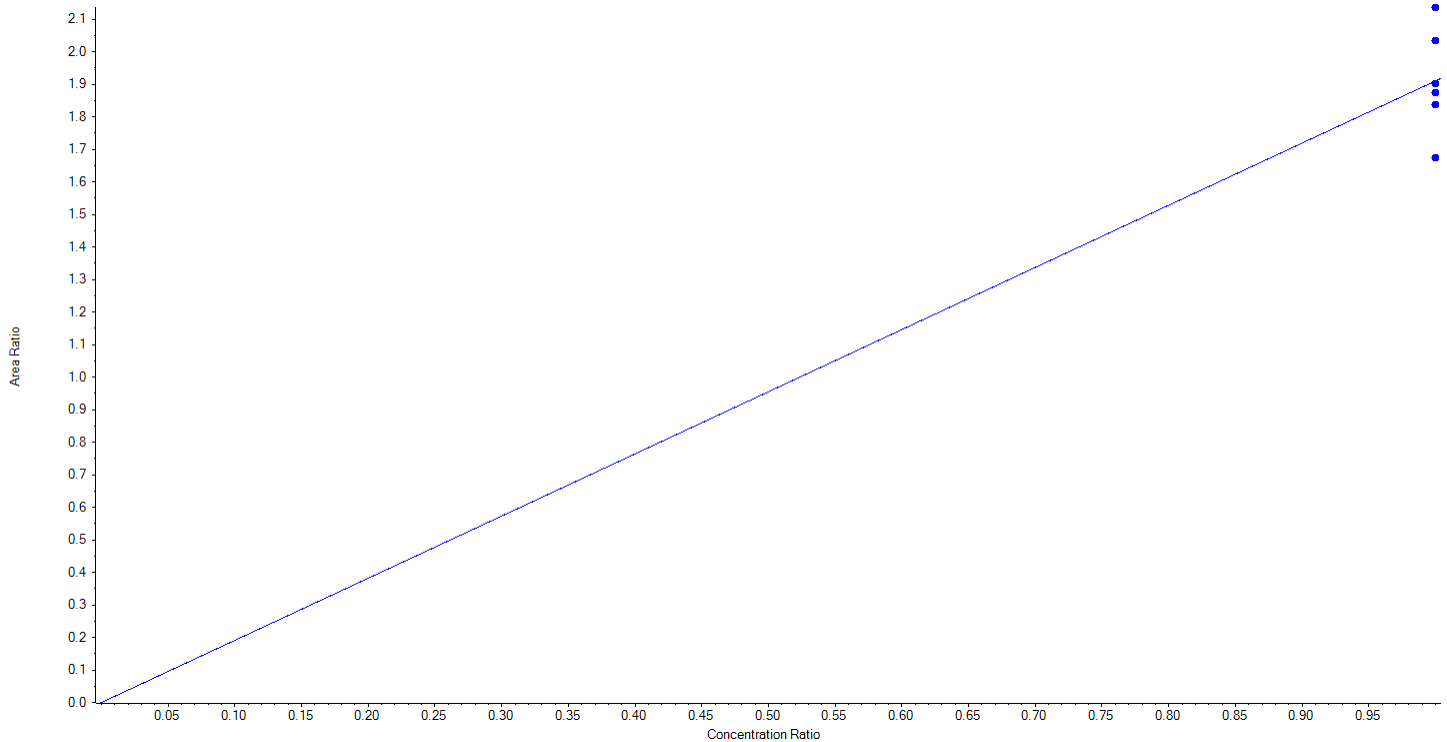
Calibration Summary Report

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Analyte Name	13C9-PFNA	Data File	AE_11162020_5-369.wiff
MRM Transition	472.0 / 427.0	Result Table	20-1481_SIS
Internal Standard	13C2-PFOA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.91001 x$ (std. dev. = 0.16029) (weighting: None) r^2 :N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	1250.00	1244.97	99.6
3	LE53	L2	True	1250.00	1331.74	106.5
4	LE54	L3	True	1250.00	1397.69	111.8
5	LE55	L4	True	1250.00	1227.07	98.2
6	LE56	L5	True	1250.00	1202.54	96.2
7	LE57	L6	True	1250.00	1095.98	87.7





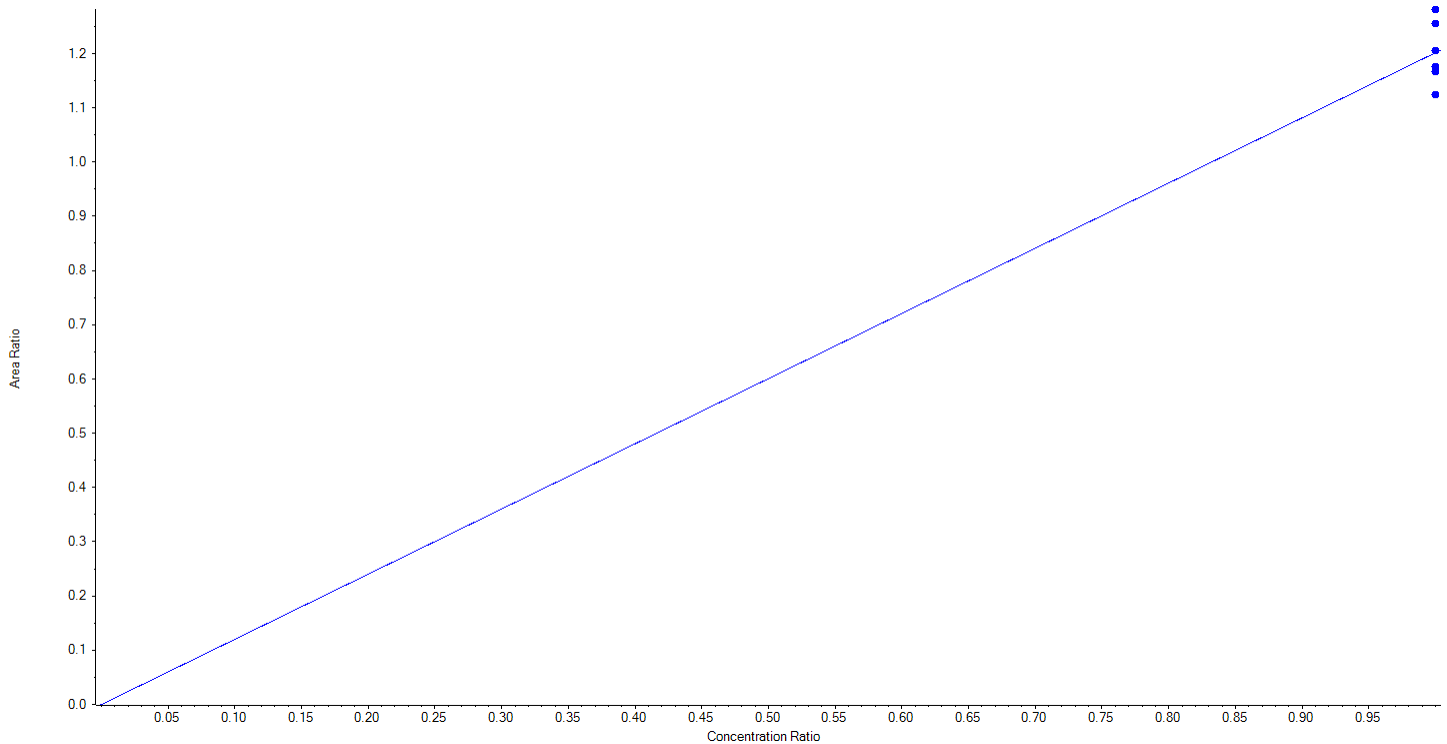
Calibration Summary Report

Created with Analyst Reporter
Printed: 17/11/2020 2:06:40 PM

Analyte Name	13C6-PFDA	Data File	AE_11162020_5-369.wiff
MRM Transition	519.0 / 474.0	Result Table	20-1481_SIS
Internal Standard	13C2-PFDA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.20143 x$ (std. dev. = 0.05861) (weighting: None) r^2 :N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	1250.00	1332.79	106.6
3	LE53	L2	True	1250.00	1254.81	100.4
4	LE54	L3	True	1250.00	1169.16	93.5
5	LE55	L4	True	1250.00	1223.53	97.9
6	LE56	L5	True	1250.00	1213.56	97.1
7	LE57	L6	True	1250.00	1306.15	104.5





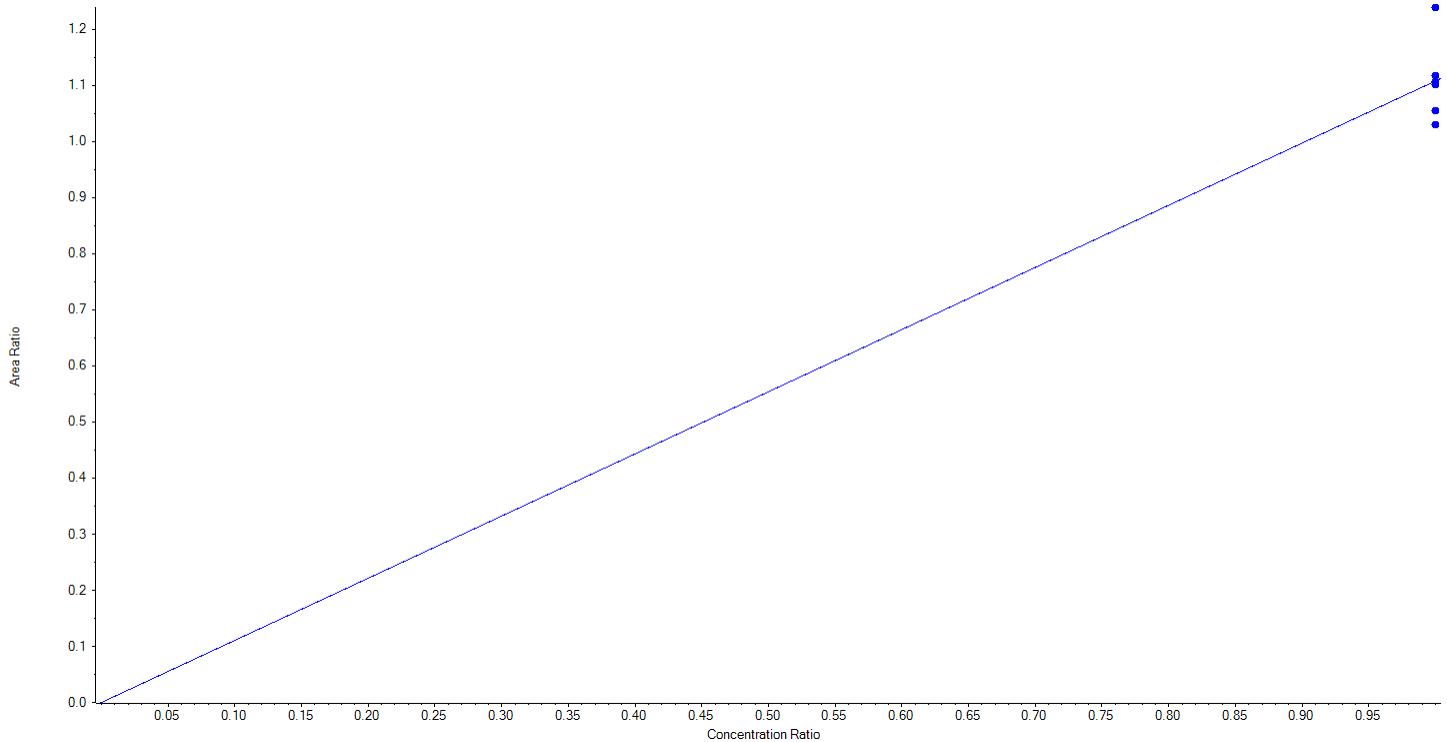
Calibration Summary Report

Created with Analyst Reporter
Printed: 17/11/2020 2:06:40 PM

Analyte Name	13C7-PFUnA	Data File	AE_11162020_5-369.wiff
MRM Transition	570.0 / 525.0	Result Table	20-1481_SIS
Internal Standard	13C2-PFDA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.10771 x$ (std. dev. = 0.07255) (weighting: None) r^2 :N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	1250.00	1397.70	111.8
3	LE53	L2	True	1250.00	1259.94	100.8
4	LE54	L3	True	1250.00	1189.55	95.2
5	LE55	L4	True	1250.00	1161.21	92.9
6	LE56	L5	True	1250.00	1249.65	100.0
7	LE57	L6	True	1250.00	1241.95	99.4





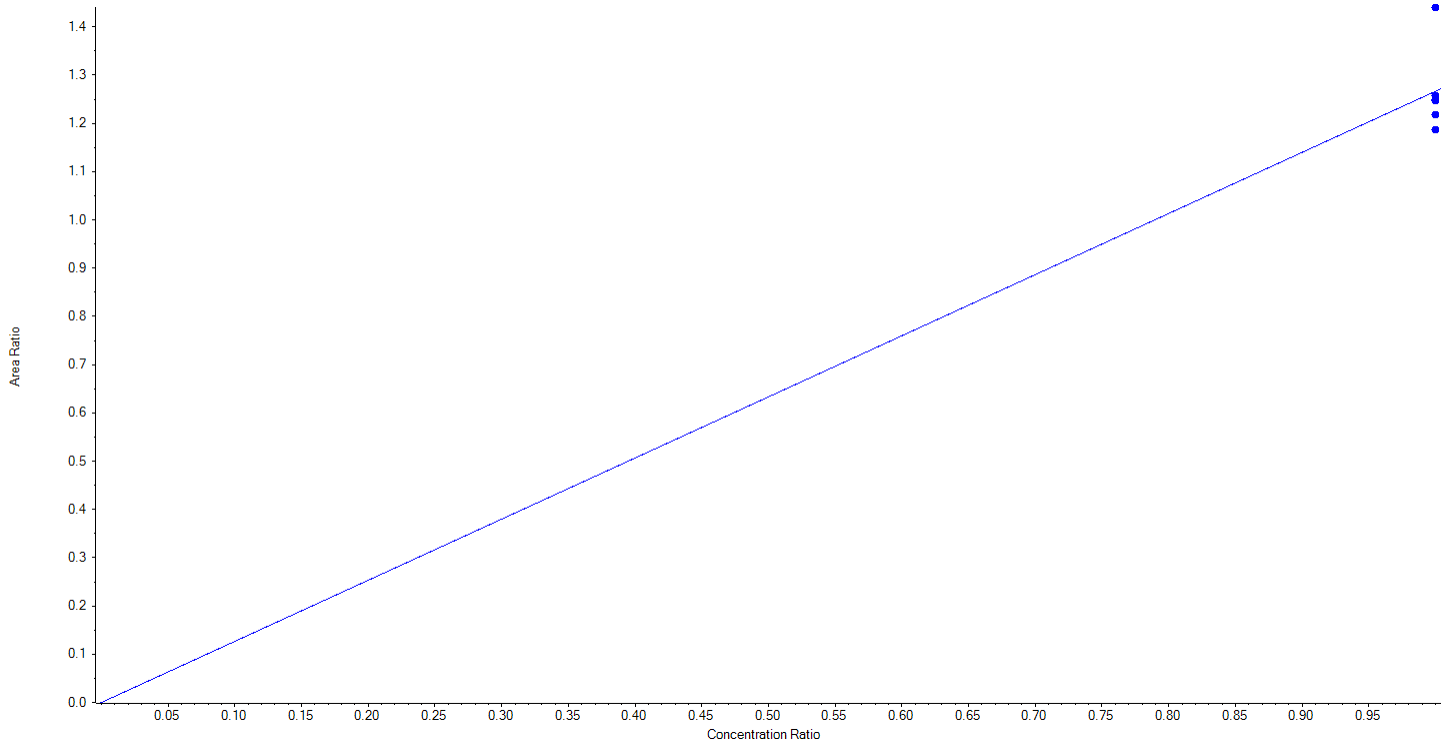
Calibration Summary Report

Created with Analyst Reporter
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Analyte Name	13C2-PFTeDA	Data File	AE_11162020_5-369.wiff
MRM Transition	715.0 / 670.0	Result Table	20-1481_SIS
Internal Standard	13C2-PFDA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.26638 x$ (std. dev. = 0.08887) (weighting: None) r^2 :N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	1250.00	1240.68	99.3
3	LE53	L2	True	1250.00	1202.93	96.2
4	LE54	L3	True	1250.00	1171.31	93.7
5	LE55	L4	True	1250.00	1233.71	98.7
6	LE56	L5	True	1250.00	1230.13	98.4
7	LE57	L6	True	1250.00	1421.24	113.7





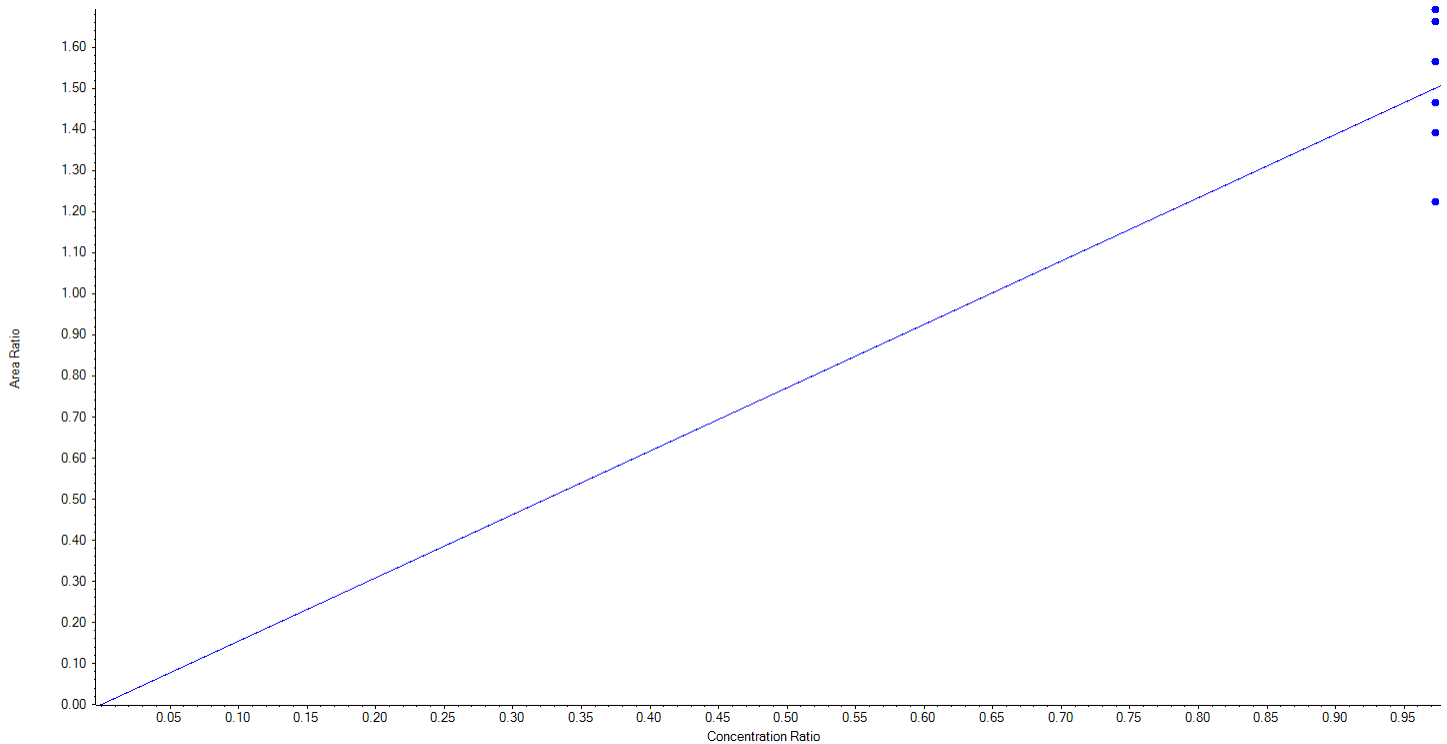
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Analyte Name	13C3-PFBS	Data File	AE_11162020_5-369.wiff
MRM Transition	302.0 / 99.0	Result Table	20-1481_SIS
Internal Standard	13C4-PFOS	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.54237 x$ (std. dev. = 0.18222) (weighting: None) r^2 : N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	1162.50	1078.67	92.8
3	LE53	L2	True	1162.50	947.94	81.5
4	LE54	L3	True	1162.50	1135.84	97.7
5	LE55	L4	True	1162.50	1212.66	104.3
6	LE56	L5	True	1162.50	1288.99	110.9
7	LE57	L6	True	1162.50	1310.91	112.8





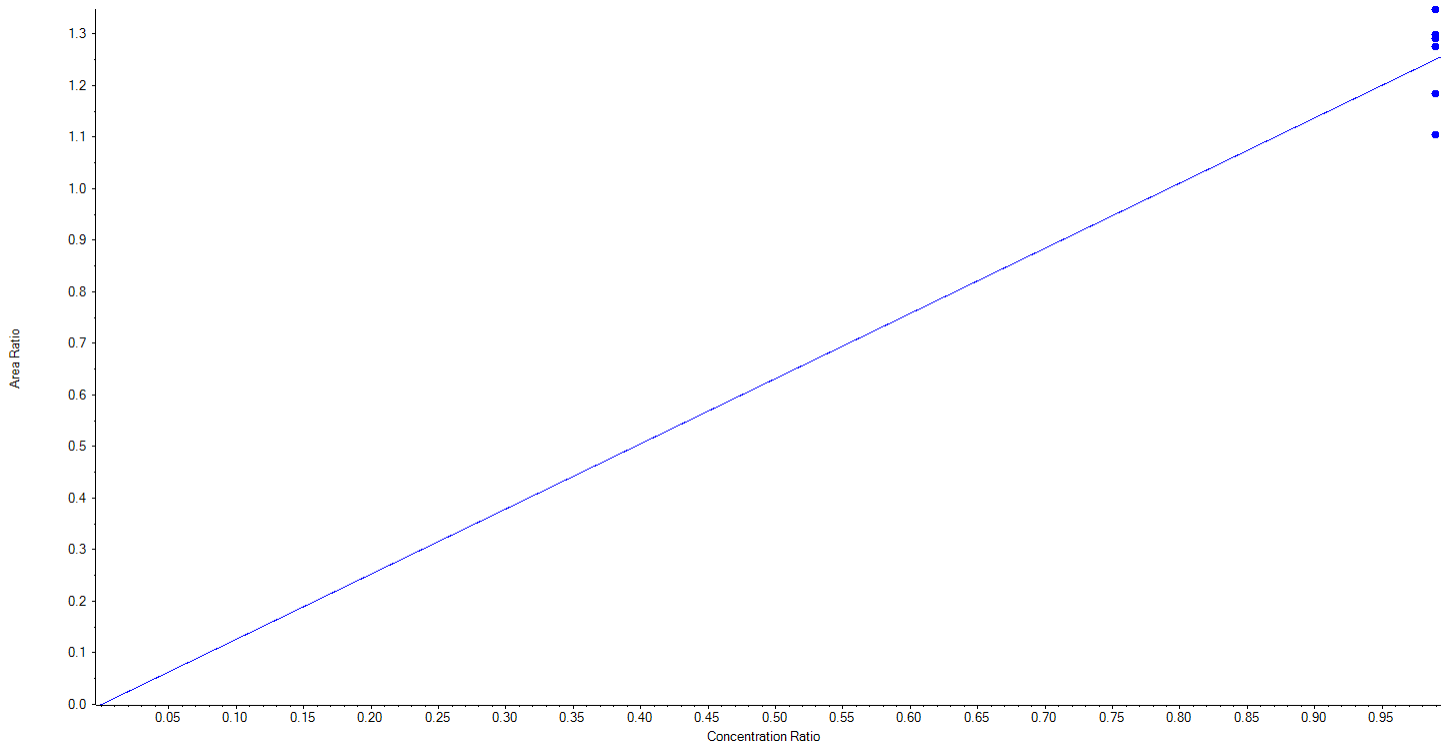
Calibration Summary Report

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Analyte Name	13C3-PFHxS	Data File	AE_11162020_5-369.wiff
MRM Transition	402.0 / 99.0	Result Table	20-1481_SIS
Internal Standard	13C4-PFOS	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.26392 x$ (std. dev. = 0.08985) (weighting: None) r^2 : N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	1182.50	1119.59	94.7
3	LE53	L2	True	1182.50	1045.43	88.4
4	LE54	L3	True	1182.50	1274.05	107.7
5	LE55	L4	True	1182.50	1228.86	103.9
6	LE56	L5	True	1182.50	1205.44	101.9
7	LE57	L6	True	1182.50	1221.63	103.3





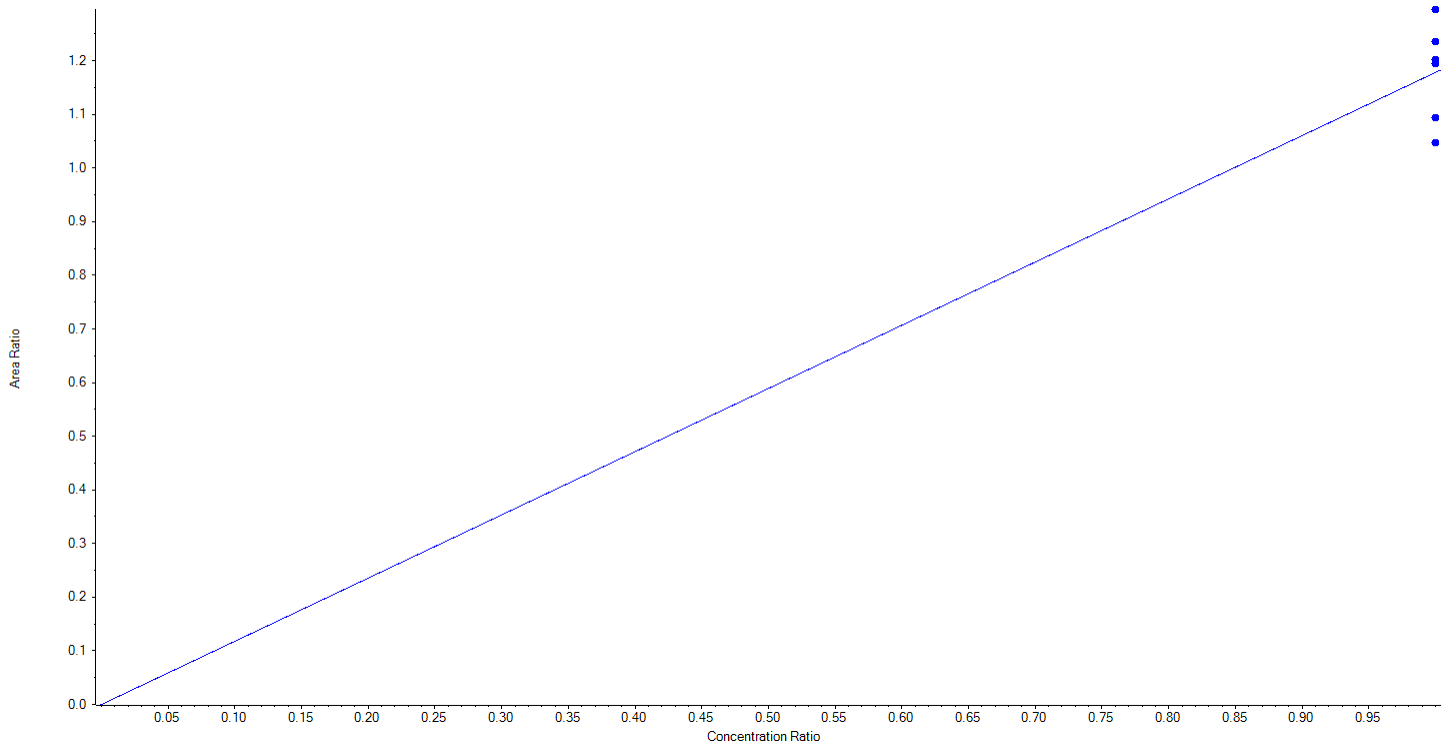
Calibration Summary Report

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Analyte Name	13C8-PFOS	Data File	AE_11162020_5-369.wiff
MRM Transition	507.0 / 99.0	Result Table	20-1481_SIS
Internal Standard	13C4-PFOS	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 1.17810 x$ (std. dev. = 0.09202) (weighting: None) r^2 :N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	1195.00	1062.25	88.9
3	LE53	L2	True	1195.00	1108.60	92.8
4	LE54	L3	True	1195.00	1212.11	101.4
5	LE55	L4	True	1195.00	1253.58	104.9
6	LE56	L5	True	1195.00	1313.93	110.0
7	LE57	L6	True	1195.00	1219.53	102.1





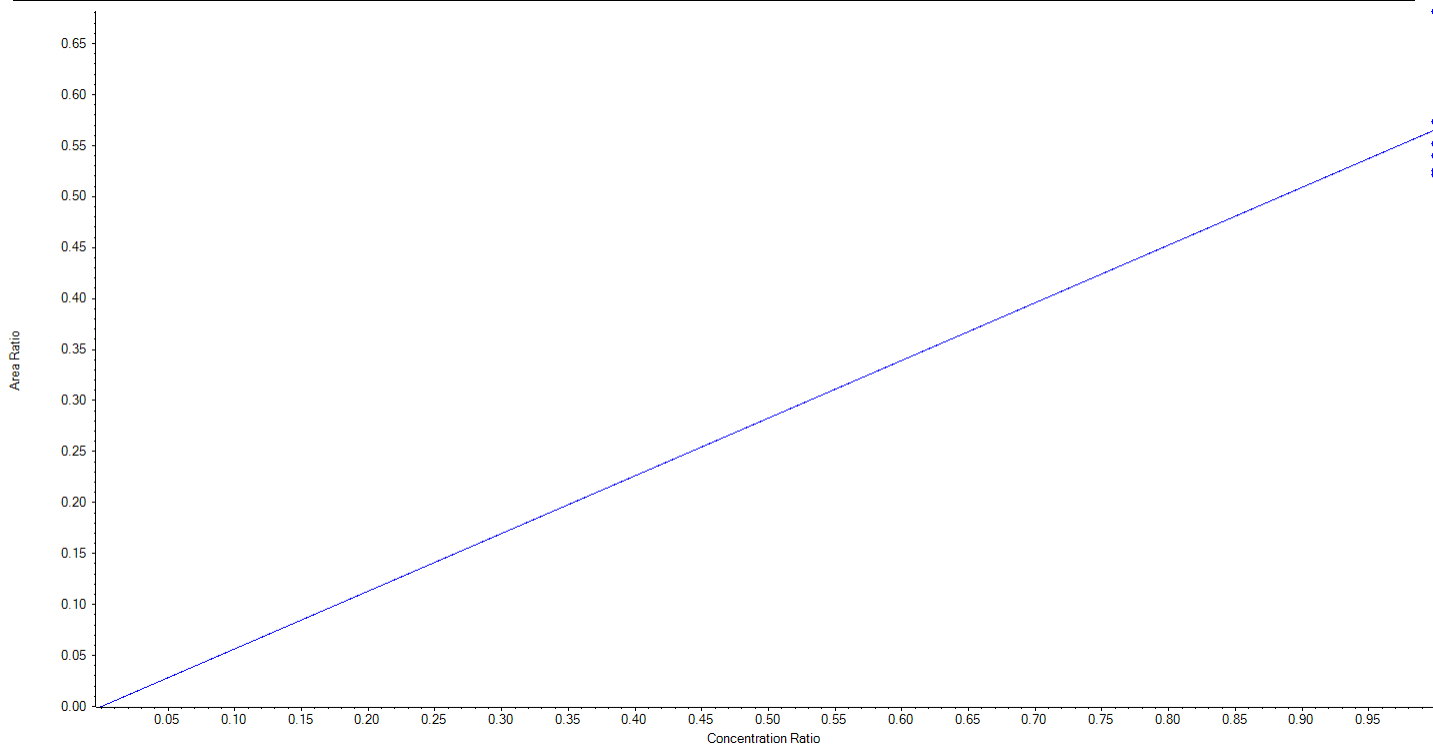
Calibration Summary Report

Created with Analyst Reporter
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Analyte Name	13C3-HFPO-DA	Data File	AE_11162020_5-369.wiff
MRM Transition	287.0 / 169.0	Result Table	20-1481_SIS
Internal Standard	13C2-PFOA	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Acquisition Method	5-369.dam

Regression Equation: $y = 0.56561 x$ (std. dev. = 0.05979) (weighting: None) r^2 : N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LE52	L1	True	1250.00	1153.25	92.3
3	LE53	L2	True	1250.00	1160.52	92.8
4	LE54	L3	True	1250.00	1193.45	95.5
5	LE55	L4	True	1250.00	1220.15	97.6
6	LE56	L5	True	1250.00	1266.58	101.3
7	LE57	L6	True	1250.00	1506.06	120.5



Sample Name	LE52	Injection Vial	2
Sample ID	L1	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.34	231482.78	210.34	4227.0	False	13C3-PFBS	277359.69	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.34	67510.58	209.49	1313.0	False	13C3-PFBS	277359.69	1162.50	PFBS	0.292	0.326	✓
PFHxA_1	313.0 / 269.0	1.59	411986.28	243.02	394.4	False	13C5-PFHxA	1314673.37	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.59	24528.68	260.47	344.7	False	13C5-PFHxA	1314673.37	1250.00	PFHxA	0.060	0.062	✓
PFHpA_1	363.0 / 319.0	1.92	305769.98	224.84	481.3	False	13C4-PFHpA	1320212.02	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	1.93	7224.30	195.77	578.4	False	13C4-PFHpA	1320212.02	1250.00	PFHpA	0.024	0.032	✓
PFHxS_1	399.0 / 80.0	1.93	181509.63	251.66	994.5	False	13C3-PFHxS	235908.69	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	1.93	65403.07	239.99	751.3	False	13C3-PFHxS	235908.69	1182.50	PFHxS	0.360	0.368	✓
PFOA_1	413.0 / 369.0	2.29	325788.54	250.81	291.5	False	13C8-PFOA	1505679.17	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.29	30763.69	260.00	179.1	False	13C8-PFOA	1505679.17	1222.50	PFOA	0.094	0.103	✓
PFNA_1	463.0 / 419.0	2.65	311620.81	252.45	269.8	False	13C9-PFNA	1525382.00	1250.00	PFNA			
PFNA_2	463.0 / 219.0	2.65	101423.12	256.82	448.2	False	13C9-PFNA	1525382.00	1250.00	PFNA	0.325	0.336	✓
PFOS_1	499.0 / 80.0	2.65	191979.35	283.81	564.8	False	13C8-PFOS	208627.83	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.64	37548.56	262.05	18369.4	False	13C8-PFOS	208627.83	1195.00	PFOS	0.196	0.204	✓
PFDA_1	513.0 / 469.0	3.00	299816.33	207.32	383.7	False	13C6-PFDA	1430590.43	1250.00	PFDA			
PFDA_2	513.0 / 219.0	3.00	15526.55	248.46	2572.0	False	13C6-PFDA	1430590.43	1250.00	PFDA	0.052	0.059	✓
PFUnA_1	563.0 / 519.0	3.32	341895.27	236.54	615.5	False	13C7-PFUnA	1383242.61	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.32	19363.55	247.89	11105.2	False	13C7-PFUnA	1383242.61	1250.00	PFUnA	0.057	0.062	✓
PFDoA_1	613.0 / 569.0	3.60	348325.77	228.65	705.7	False	13C2-PFDoA	1505789.55	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.60	38187.86	254.15	1015.0	False	13C2-PFDoA	1505789.55	1250.00	PFDoA	0.110	0.118	✓
PFTTrDA_1	663.0 / 619.0	3.86	295651.96	231.52	1180.2	False	13C2-PFTTeDA	1403726.10	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	3.85	19285.49	238.22	1355.1	False	13C2-PFTTeDA	1403726.10	1250.00	PFTTrDA	0.065	0.072	✓
PFTTeDA_1	713.0 / 669.0	4.09	348262.58	237.86	1539.6	False	13C2-PFTTeDA	1403726.10	1250.00	PFTTeDA			
PFTTeDA_2	713.0 / 169.0	4.08	17690.78	241.90	1278.7	False	13C2-PFTTeDA	1403726.10	1250.00	PFTTeDA	0.051	0.057	✓
NMeFOSAA_1	570.0 / 419.0	3.14	39379.59	289.29	128125.3	False	d3-MeFOSAA	220270.04	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.14	42612.39	240.16	907.0	False	d3-MeFOSAA	220270.04	1250.00	NMeFOSAA	1.082	1.071	✓
NEIFOSAA_1	584.0 / 419.0	3.31	42234.73	283.61	4602714.7	False	d5-EtFOSAA	183969.29	1250.00	NEIFOSAA			
NEIFOSAA_2	584.0 / 483.0	3.29	2152.41	311.48	16629.4	False	d5-EtFOSAA	183969.29	1250.00	NEIFOSAA	0.051	0.053	✓
HFPO-DA_1	285.0 / 169.0	1.68	322479.80	252.48	2422.0	False	13C3-HFPO-DA	419809.56	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	1.68	7788.92	244.46	491.0	False	13C3-HFPO-DA	419809.56	1250.00	HFPO-DA	0.024	0.024	✓
ADONA_1	377.0 / 251.0	1.96	732438.20	283.27	4527.0	False	13C8-PFOA	1505679.17	1222.50	ADONA			
ADONA_2	377.0 / 85.0	1.96	9610.84	297.36	103581.7	False	13C8-PFOA	1505679.17	1222.50	ADONA	0.013	0.015	✓
9CI-PF3ONS_1	531.0 / 351.0	2.85	373908.68	305.30	851.3	False	13C8-PFOA	1505679.17	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	2.86	2700.73	254.40	686.0	False	13C8-PFOA	1505679.17	1222.50	9CI-PF3ONS	0.007	0.011	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.47	273129.96	302.59	921.9	False	13C8-PFOA	1505679.17	1222.50	11Cl-pf3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.48	778.47	258.68	79.0	False	13C8-PFOA	1505679.17	1222.50	11Cl-pf3OUdS	0.003	0.005	✓

Sample Name	LE53	Injection Vial	3
Sample ID	L2	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:17:56 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.34	410460.71	558.26	5103.7	False	13C3-PFBS	256978.01	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.34	120391.02	510.30	1821.5	False	13C3-PFBS	256978.01	1162.50	PFBS	0.293	0.326	✓
PFHxA_1	313.0 / 269.0	1.59	780423.24	549.22	599.5	False	13C5-PFHxA	1312274.21	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.59	44882.61	519.95	493.6	False	13C5-PFHxA	1312274.21	1250.00	PFHxA	0.058	0.062	✓
PFHpA_1	363.0 / 319.0	1.92	499930.25	439.25	471.6	False	13C4-PFHpA	1290953.40	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	1.92	18919.36	565.53	392.1	False	13C4-PFHpA	1290953.40	1250.00	PFHpA	0.038	0.032	✓
PFHxS_1	399.0 / 80.0	1.92	353583.70	520.65	1277.5	False	13C3-PFHxS	232244.10	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	1.92	140209.98	560.04	1274.7	False	13C3-PFHxS	232244.10	1182.50	PFHxS	0.397	0.368	✓
PFOA_1	413.0 / 369.0	2.27	630508.51	517.97	392.5	False	13C8-PFOA	1526342.92	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.27	69367.93	569.73	403.6	False	13C8-PFOA	1526342.92	1222.50	PFOA	0.110	0.103	✓
PFNA_1	463.0 / 419.0	2.63	567016.53	481.14	347.8	False	13C9-PFNA	1530206.51	1250.00	PFNA			
PFNA_2	463.0 / 219.0	2.63	190214.54	488.38	474.3	False	13C9-PFNA	1530206.51	1250.00	PFNA	0.335	0.336	✓
PFOS_1	499.0 / 80.0	2.63	347654.14	475.58	697.0	False	13C8-PFOS	229552.50	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.63	72774.05	483.33	272332.9	False	13C8-PFOS	229552.50	1195.00	PFOS	0.209	0.204	✓
PFDA_1	513.0 / 469.0	2.98	586561.48	472.77	523.7	False	13C6-PFDA	1442668.59	1250.00	PFDA			
PFDA_2	513.0 / 219.0	2.97	31479.84	470.82	7419.7	False	13C6-PFDA	1442668.59	1250.00	PFDA	0.054	0.059	✓
PFUnA_1	563.0 / 519.0	3.29	645550.70	494.13	864.2	False	13C7-PFUnA	1335572.57	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.29	35221.14	453.74	1160.6	False	13C7-PFUnA	1335572.57	1250.00	PFUnA	0.055	0.062	✓
PFDoA_1	613.0 / 569.0	3.57	700205.81	518.89	879.9	False	13C2-PFDoA	1496422.39	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.57	78810.53	515.53	1624.9	False	13C2-PFDoA	1496422.39	1250.00	PFDoA	0.113	0.118	✓
PFTeDA_1	663.0 / 619.0	3.81	589054.40	514.75	1355.0	False	13C2-PFTeDA	1457794.28	1250.00	PFTeDA			
PFTeDA_2	663.0 / 169.0	3.81	43450.57	545.87	1536.0	False	13C2-PFTeDA	1457794.28	1250.00	PFTeDA	0.074	0.072	✓
PFTeDA_1	713.0 / 669.0	4.03	660369.83	495.40	2345.3	False	13C2-PFTeDA	1457794.28	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.03	38406.63	527.69	2046.3	False	13C2-PFTeDA	1457794.28	1250.00	PFTeDA	0.058	0.057	✓
NMeFOSAA_1	570.0 / 419.0	3.11	66991.72	481.29	252608.7	False	d3-MeFOSAA	218701.87	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.11	81050.80	515.60	1665.6	False	d3-MeFOSAA	218701.87	1250.00	NMeFOSAA	1.210	1.071	✓
NEiFOSAA_1	584.0 / 419.0	3.28	77773.89	483.30	1711.1	False	d5-EiFOSAA	194363.27	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	3.27	4055.15	499.40	653345.3	False	d5-EiFOSAA	194363.27	1250.00	NEiFOSAA	0.052	0.053	✓
HFPO-DA_1	285.0 / 169.0	1.67	573858.08	505.95	3175.0	False	13C3-HFPO-DA	394878.27	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	1.68	14094.35	536.95	664.8	False	13C3-HFPO-DA	394878.27	1250.00	HFPO-DA	0.025	0.024	✓
ADONA_1	377.0 / 251.0	1.95	1391841.54	529.77	4660.5	False	13C8-PFOA	1526342.92	1222.50	ADONA			
ADONA_2	377.0 / 85.0	1.94	17407.40	480.67	11246.7	False	13C8-PFOA	1526342.92	1222.50	ADONA	0.013	0.015	✓
9CI-PF3ONS_1	531.0 / 351.0	2.83	691345.76	519.87	1083.3	False	13C8-PFOA	1526342.92	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	2.83	8674.10	620.08	1811.1	False	13C8-PFOA	1526342.92	1222.50	9CI-PF3ONS	0.013	0.011	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.43	477306.24	492.17	1305.9	False	13C8-PFOA	1526342.92	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.44	2810.39	620.33	3782.5	False	13C8-PFOA	1526342.92	1222.50	11Cl-PF3OUdS	0.006	0.005	✓

Sample Name	LE54	Injection Vial	4
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:28:24 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.33	707113.07	998.23	5128.5	False	13C3-PFBS	276029.89	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.33	238231.58	1037.63	2945.7	False	13C3-PFBS	276029.89	1162.50	PFBS	0.337	0.326	✓
PFHxA_1	313.0 / 269.0	1.58	1337493.79	941.33	615.8	False	13C5-PFHxA	1400558.82	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.58	84064.94	950.96	587.0	False	13C5-PFHxA	1400558.82	1250.00	PFHxA	0.063	0.062	✓
PFHpA_1	363.0 / 319.0	1.91	1075375.93	1057.04	813.8	False	13C4-PFHpA	1286753.00	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	1.91	34165.00	1044.53	631.7	False	13C4-PFHpA	1286753.00	1250.00	PFHpA	0.032	0.032	✓
PFHxS_1	399.0 / 80.0	1.92	693816.81	953.61	2126.1	False	13C3-PFHxS	253722.14	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	1.92	246279.37	919.77	1440.2	False	13C3-PFHxS	253722.14	1182.50	PFHxS	0.355	0.368	✓
PFOA_1	413.0 / 369.0	2.27	1224732.47	971.33	551.3	False	13C8-PFOA	1639736.32	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.27	115541.02	879.47	765.6	False	13C8-PFOA	1639736.32	1222.50	PFOA	0.094	0.103	✓
PFNA_1	463.0 / 419.0	2.63	1215984.80	1011.32	548.0	False	13C9-PFNA	1608464.03	1250.00	PFNA			
PFNA_2	463.0 / 219.0	2.64	383667.16	945.86	781.0	False	13C9-PFNA	1608464.03	1250.00	PFNA	0.316	0.336	✓
PFOS_1	499.0 / 80.0	2.63	713460.49	1010.08	920.2	False	13C8-PFOS	224996.57	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.63	149741.55	1046.03	1452.2	False	13C8-PFOS	224996.57	1195.00	PFOS	0.210	0.204	✓
PFDA_1	513.0 / 469.0	2.99	1181414.61	1095.98	720.1	False	13C6-PFDA	1359385.28	1250.00	PFDA			
PFDA_2	513.0 / 219.0	2.99	65272.42	1001.95	1573.9	False	13C6-PFDA	1359385.28	1250.00	PFDA	0.055	0.059	✓
PFUnA_1	563.0 / 519.0	3.30	1223780.52	1013.61	925.0	False	13C7-PFUnA	1275204.50	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.30	80222.78	1061.65	3475.8	False	13C7-PFUnA	1275204.50	1250.00	PFUnA	0.066	0.062	✓
PFDoA_1	613.0 / 569.0	3.59	1234381.67	1016.71	1061.8	False	13C2-PFDoA	1412764.86	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.59	143902.14	986.42	1727.5	False	13C2-PFDoA	1412764.86	1250.00	PFDoA	0.117	0.118	✓
PFTeDA_1	663.0 / 619.0	3.85	1039858.92	983.72	1632.0	False	13C2-PFTeDA	1435506.54	1250.00	PFTeDA			
PFTeDA_2	663.0 / 169.0	3.85	72349.97	940.22	2208.2	False	13C2-PFTeDA	1435506.54	1250.00	PFTeDA	0.070	0.072	✓
PFTeDA_1	713.0 / 669.0	4.08	1209643.50	985.21	2580.1	False	13C2-PFTeDA	1435506.54	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.08	68793.82	976.41	2958.9	False	13C2-PFTeDA	1435506.54	1250.00	PFTeDA	0.057	0.057	✓
NMeFOSAA_1	570.0 / 419.0	3.13	128751.29	982.50	511150.8	False	d3-MeFOSAA	201411.93	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.13	134309.84	976.23	4907702.2	False	d3-MeFOSAA	201411.93	1250.00	NMeFOSAA	1.043	1.071	✓
NEIFOSAA_1	584.0 / 419.0	3.30	147068.56	938.29	2775.7	False	d5-EtFOSAA	186449.43	1250.00	NEIFOSAA			
NEIFOSAA_2	584.0 / 483.0	3.31	8182.92	971.55	611934.3	False	d5-EtFOSAA	186449.43	1250.00	NEIFOSAA	0.056	0.053	✓
HFPO-DA_1	285.0 / 169.0	1.67	1132780.44	1003.01	2725.7	False	13C3-HFPO-DA	406710.53	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	1.67	25220.98	987.86	32238.4	False	13C3-HFPO-DA	406710.53	1250.00	HFPO-DA	0.022	0.024	✓
ADONA_1	377.0 / 251.0	1.94	2515764.67	890.38	6597.0	False	13C8-PFOA	1639736.32	1222.50	ADONA			
ADONA_2	377.0 / 85.0	1.94	37805.41	905.99	22305.3	False	13C8-PFOA	1639736.32	1222.50	ADONA	0.015	0.015	✓
9CI-PF3ONS_1	531.0 / 351.0	2.83	1254004.39	846.86	1312.8	False	13C8-PFOA	1639736.32	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	2.83	15184.62	956.46	1469.6	False	13C8-PFOA	1639736.32	1222.50	9CI-PF3ONS	0.012	0.011	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.46	995697.79	917.39	1529.7	False	13C8-PFOA	1639736.32	1222.50	11Cl-pf3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.46	4730.34	905.33	454.2	False	13C8-PFOA	1639736.32	1222.50	11Cl-pf3OUdS	0.005	0.005	✓

Sample Name	LE55	Injection Vial	5
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:38:51 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.34	1738591.78	2549.66	11965.9	False	13C3-PFBS	291582.33	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.33	601439.41	2640.83	5100.2	False	13C3-PFBS	291582.33	1162.50	PFBS	0.346	0.326	✓
PFHxA_1	313.0 / 269.0	1.58	3146665.69	2565.96	1311.0	False	13C5-PFHxA	1285588.08	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.58	196732.49	2503.49	1144.6	False	13C5-PFHxA	1285588.08	1250.00	PFHxA	0.063	0.062	✓
PFHpA_1	363.0 / 319.0	1.90	2554563.44	2720.66	1005.0	False	13C4-PFHpA	1250143.50	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	1.90	79141.39	2524.46	910.6	False	13C4-PFHpA	1250143.50	1250.00	PFHpA	0.031	0.032	✓
PFHxS_1	399.0 / 80.0	1.91	1694921.08	2477.19	3484.8	False	13C3-PFHxS	242134.25	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	1.91	633522.23	2533.10	3845.0	False	13C3-PFHxS	242134.25	1182.50	PFHxS	0.374	0.368	✓
PFOA_1	413.0 / 369.0	2.25	2916099.16	2423.89	896.4	False	13C8-PFOA	1605377.26	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.25	301208.64	2330.13	1014.4	False	13C8-PFOA	1605377.26	1222.50	PFOA	0.103	0.103	✓
PFNA_1	463.0 / 419.0	2.62	2812164.80	2532.09	761.9	False	13C9-PFNA	1510629.07	1250.00	PFNA			
PFNA_2	463.0 / 219.0	2.62	989735.40	2614.59	1453.1	False	13C9-PFNA	1510629.07	1250.00	PFNA	0.352	0.336	✓
PFOS_1	499.0 / 80.0	2.61	1718946.03	2396.01	1785.0	False	13C8-PFOS	230233.11	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.61	359176.73	2490.37	2120.3	False	13C8-PFOS	230233.11	1195.00	PFOS	0.209	0.204	✓
PFDA_1	513.0 / 469.0	2.97	2779870.88	2710.57	851.4	False	13C6-PFDA	1344667.08	1250.00	PFDA			
PFDA_2	513.0 / 219.0	2.97	170255.67	2595.58	3128.5	False	13C6-PFDA	1344667.08	1250.00	PFDA	0.061	0.059	✓
PFUnA_1	563.0 / 519.0	3.29	2890127.64	2645.83	1126.6	False	13C7-PFUnA	1176626.34	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.29	183494.83	2609.63	1747.0	False	13C7-PFUnA	1176626.34	1250.00	PFUnA	0.063	0.062	✓
PFDoA_1	613.0 / 569.0	3.58	3022086.48	2489.58	1532.6	False	13C2-PFDoA	1456848.82	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.58	355443.22	2346.89	2546.9	False	13C2-PFDoA	1456848.82	1250.00	PFDoA	0.118	0.118	✓
PFTeDA_1	663.0 / 619.0	3.84	2546240.72	2531.66	2319.9	False	13C2-PFTeDA	1429153.67	1250.00	PFTeDA			
PFTeDA_2	663.0 / 169.0	3.84	182599.46	2421.67	3187.5	False	13C2-PFTeDA	1429153.67	1250.00	PFTeDA	0.072	0.072	✓
PFTeDA_1	713.0 / 669.0	4.08	3014698.45	2577.51	4076.8	False	13C2-PFTeDA	1429153.67	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.08	167472.39	2416.71	4827.6	False	13C2-PFTeDA	1429153.67	1250.00	PFTeDA	0.056	0.057	✓
NMeFOSAA_1	570.0 / 419.0	3.11	284727.13	2260.09	11818950.5	False	d3-MeFOSAA	191364.24	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.12	312557.37	2479.00	3247.0	False	d3-MeFOSAA	191364.24	1250.00	NMeFOSAA	1.098	1.071	✓
NEiFOSAA_1	584.0 / 419.0	3.28	343440.98	2392.23	1886.0	False	d5-EiFOSAA	169122.84	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	3.28	15447.50	1944.59	52794.4	False	d5-EiFOSAA	169122.84	1250.00	NEiFOSAA	0.045	0.053	✓
HFPO-DA_1	285.0 / 169.0	1.66	2878951.15	2409.72	6051.9	False	13C3-HFPO-DA	444814.40	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	1.66	62879.75	2360.49	10606.1	False	13C3-HFPO-DA	444814.40	1250.00	HFPO-DA	0.022	0.024	✓
ADONA_1	377.0 / 251.0	1.93	6475568.25	2338.60	10424.7	False	13C8-PFOA	1605377.26	1222.50	ADONA			
ADONA_2	377.0 / 85.0	1.93	104387.11	2437.99	1803.9	False	13C8-PFOA	1605377.26	1222.50	ADONA	0.016	0.015	✓
9CI-PF3ONS_1	531.0 / 351.0	2.82	3358521.01	2238.74	2103.1	False	13C8-PFOA	1605377.26	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	2.82	33406.50	2042.33	2521.1	False	13C8-PFOA	1605377.26	1222.50	9CI-PF3ONS	0.010	0.011	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.45	2430665.10	2226.67	2641.9	False	13C8-PFOA	1605377.26	1222.50	11Cl-pf3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.45	11229.52	2027.81	3000.5	False	13C8-PFOA	1605377.26	1222.50	11Cl-pf3OUdS	0.005	0.005	✓

Sample Name	LE56	Injection Vial	6
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:49:18 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.34	6661328.35	10444.89	22401.5	False	13C3-PFBS	286265.47	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.34	2357432.65	10889.94	8061.8	False	13C3-PFBS	286265.47	1162.50	PFBS	0.354	0.326	✓
PFHxA_1	313.0 / 269.0	1.58	11789053.10	10134.33	1916.9	False	13C5-PFHxA	1253983.80	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.58	767010.47	10159.23	2335.2	False	13C5-PFHxA	1253983.80	1250.00	PFHxA	0.065	0.062	✓
PFHpA_1	363.0 / 319.0	1.90	8561379.86	11408.48	1227.3	True	13C4-PFHpA	1025288.60	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	1.91	270011.16	10579.34	1896.5	False	13C4-PFHpA	1025288.60	1250.00	PFHpA	0.032	0.032	✓
PFHxS_1	399.0 / 80.0	1.92	6667913.57	10833.62	6766.3	False	13C3-PFHxS	219381.01	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	1.92	2361897.02	10522.39	5792.9	False	13C3-PFHxS	219381.01	1182.50	PFHxS	0.354	0.368	✓
PFOA_1	413.0 / 369.0	2.28	10659415.37	10274.90	1436.2	False	13C8-PFOA	1403048.47	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.27	1133508.38	10010.08	2086.7	False	13C8-PFOA	1403048.47	1222.50	PFOA	0.106	0.103	✓
PFNA_1	463.0 / 419.0	2.65	10137494.52	10080.90	1829.8	False	13C9-PFNA	1379334.63	1250.00	PFNA			
PFNA_2	463.0 / 219.0	2.65	3484499.04	10108.28	2567.7	False	13C9-PFNA	1379334.63	1250.00	PFNA	0.344	0.336	✓
PFOS_1	499.0 / 80.0	2.64	6755592.81	9767.00	2359.7	False	13C8-PFOS	222886.68	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.64	1357982.78	9808.94	2741.5	False	13C8-PFOS	222886.68	1195.00	PFOS	0.201	0.204	✓
PFDA_1	513.0 / 469.0	3.00	9851004.33	10907.38	1786.1	False	13C6-PFDA	1208641.86	1250.00	PFDA			
PFDA_2	513.0 / 219.0	3.00	621264.67	10450.34	4567.8	False	13C6-PFDA	1208641.86	1250.00	PFDA	0.063	0.059	✓
PFUnA_1	563.0 / 519.0	3.33	10542859.71	9987.16	2344.4	False	13C7-PFUnA	1147499.99	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.32	689104.87	10006.36	4676.3	False	13C7-PFUnA	1147499.99	1250.00	PFUnA	0.065	0.062	✓
PFDoA_1	613.0 / 569.0	3.62	11369943.00	10587.33	2545.4	False	13C2-PFDoA	1310571.21	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.61	1416171.48	10355.20	3312.2	False	13C2-PFDoA	1310571.21	1250.00	PFDoA	0.125	0.118	✓
PFTeDA_1	663.0 / 619.0	3.87	9601286.31	10808.60	3253.4	False	13C2-PFTeDA	1291383.70	1250.00	PFTeDA			
PFTeDA_2	663.0 / 169.0	3.87	723650.80	10705.22	3814.6	False	13C2-PFTeDA	1291383.70	1250.00	PFTeDA	0.075	0.072	✓
PFTeDA_1	713.0 / 669.0	4.10	11092920.40	10723.37	4489.5	False	13C2-PFTeDA	1291383.70	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.10	653750.00	10507.41	4850.7	False	13C2-PFTeDA	1291383.70	1250.00	PFTeDA	0.059	0.057	✓
NMeFOSAA_1	570.0 / 419.0	3.14	1244567.07	9737.82	643.1	False	d3-MeFOSAA	192808.59	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.14	1327615.46	10645.90	2457.8	False	d3-MeFOSAA	192808.59	1250.00	NMeFOSAA	1.067	1.071	✓
NEiFOSAA_1	584.0 / 419.0	3.31	1334944.20	9961.13	3124.6	False	d5-EiFOSAA	157127.54	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	3.32	74154.17	9749.26	392.0	False	d5-EiFOSAA	157127.54	1250.00	NEiFOSAA	0.056	0.053	✓
HFPO-DA_1	285.0 / 169.0	1.67	10565663.34	10141.82	8622.1	False	13C3-HFPO-DA	430213.14	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	1.67	246058.21	10192.60	4608.9	False	13C3-HFPO-DA	430213.14	1250.00	HFPO-DA	0.023	0.024	✓
ADONA_1	377.0 / 251.0	1.94	23132109.50	9554.34	20734.8	False	13C8-PFOA	1403048.47	1222.50	ADONA			
ADONA_2	377.0 / 85.0	1.95	358107.58	9381.55	283007.9	False	13C8-PFOA	1403048.47	1222.50	ADONA	0.015	0.015	✓
9CI-PF3ONS_1	531.0 / 351.0	2.85	12943410.77	9719.03	4310.2	False	13C8-PFOA	1403048.47	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	2.85	136447.72	9229.78	2977.3	False	13C8-PFOA	1403048.47	1222.50	9CI-PF3ONS	0.011	0.011	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.48	9432020.01	9746.49	3619.3	False	13C8-PFOA	1403048.47	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.48	49972.41	9844.57	12476.8	False	13C8-PFOA	1403048.47	1222.50	11Cl-PF3OUdS	0.005	0.005	✓

Sample Name	LE57	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:59:46 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.33	14507461.90	24488.63	27439.1	False	13C3-PFBS	268383.20	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.33	4835257.60	23961.80	9753.3	False	13C3-PFBS	268383.20	1162.50	PFBS	0.333	0.326	✓
PFHxA_1	313.0 / 269.0	1.58	24686668.71	25208.64	3099.5	False	13C5-PFHxA	1061737.07	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.58	1609168.73	25248.40	3128.6	False	13C5-PFHxA	1061737.07	1250.00	PFHxA	0.065	0.062	✓
PFHpA_1	363.0 / 319.0	1.91	18282110.16	23399.73	3014.5	False	13C4-PFHpA	1071944.61	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	1.91	648645.50	24340.37	3608.3	False	13C4-PFHpA	1071944.61	1250.00	PFHpA	0.035	0.032	✓
PFHxS_1	399.0 / 80.0	1.92	14131584.40	24605.78	8836.5	False	13C3-PFHxS	204953.64	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	1.92	5205649.82	24867.20	5776.6	False	13C3-PFHxS	204953.64	1182.50	PFHxS	0.368	0.368	✓
PFOA_1	413.0 / 369.0	2.27	21436119.35	24811.10	1912.6	False	13C8-PFOA	1171331.76	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.27	2383353.27	25200.58	2185.6	False	13C8-PFOA	1171331.76	1222.50	PFOA	0.111	0.103	✓
PFNA_1	463.0 / 419.0	2.64	21426491.58	24892.10	1923.5	False	13C9-PFNA	1182656.32	1250.00	PFNA			
PFNA_2	463.0 / 219.0	2.64	7336584.53	24836.08	3140.0	False	13C9-PFNA	1182656.32	1250.00	PFNA	0.342	0.336	✓
PFOS_1	499.0 / 80.0	2.63	15203000.92	25710.01	3330.3	False	13C8-PFOS	190708.52	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.64	3021358.33	25551.78	2631.9	False	13C8-PFOS	190708.52	1195.00	PFOS	0.199	0.204	✓
PFDA_1	513.0 / 469.0	3.00	19408524.73	23855.97	1794.0	False	13C6-PFDA	1092817.35	1250.00	PFDA			
PFDA_2	513.0 / 219.0	2.99	1318061.75	24482.85	3835.7	False	13C6-PFDA	1092817.35	1250.00	PFDA	0.068	0.059	✓
PFUnA_1	563.0 / 519.0	3.32	21878309.83	24872.72	2852.9	False	13C7-PFUnA	958041.34	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.32	1431259.04	24870.73	2854.1	False	13C7-PFUnA	958041.34	1250.00	PFUnA	0.065	0.062	✓
PFDoA_1	613.0 / 569.0	3.61	25347794.77	24408.84	2523.0	False	13C2-PFDoA	1271034.58	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.61	3290338.14	24791.82	3924.9	False	13C2-PFDoA	1271034.58	1250.00	PFDoA	0.130	0.118	✓
PFTeDA_1	663.0 / 619.0	3.86	20765507.00	24179.75	3225.6	False	13C2-PFTeDA	1253386.65	1250.00	PFTeDA			
PFTeDA_2	663.0 / 169.0	3.86	1598697.73	24398.78	3146.4	False	13C2-PFTeDA	1253386.65	1250.00	PFTeDA	0.077	0.072	✓
PFTeDA_1	713.0 / 669.0	4.09	24235241.69	24230.66	3860.0	False	13C2-PFTeDA	1253386.65	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.09	1482683.41	24579.88	4004.7	False	13C2-PFTeDA	1253386.65	1250.00	PFTeDA	0.061	0.057	✓
NMeFOSAA_1	570.0 / 419.0	3.14	3020414.13	25499.01	10420.0	False	d3-MeFOSAA	178466.59	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.14	2806719.68	24393.10	2953.8	False	d3-MeFOSAA	178466.59	1250.00	NMeFOSAA	0.929	1.071	✓
NEiFOSAA_1	584.0 / 419.0	3.31	2647060.72	25191.44	3086.5	False	d5-EiFOSAA	123088.37	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	3.31	154275.73	25773.71	1995.2	False	d5-EiFOSAA	123088.37	1250.00	NEiFOSAA	0.058	0.053	✓
HFPO-DA_1	285.0 / 169.0	1.67	23517830.20	24918.37	13602.6	False	13C3-HFPO-DA	481255.55	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	1.66	615819.64	24924.88	231312.1	False	13C3-HFPO-DA	481255.55	1250.00	HFPO-DA	0.026	0.024	✓
ADONA_1	377.0 / 251.0	1.94	51857390.90	25653.64	31627.7	False	13C8-PFOA	1171331.76	1222.50	ADONA			
ADONA_2	377.0 / 85.0	1.94	824072.70	25746.43	62339.3	False	13C8-PFOA	1171331.76	1222.50	ADONA	0.016	0.015	✓
9CI-PF3ONS_1	531.0 / 351.0	2.84	28566986.59	25620.21	6001.2	False	13C8-PFOA	1171331.76	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	2.84	324661.02	26146.95	35531.2	False	13C8-PFOA	1171331.76	1222.50	9CI-PF3ONS	0.011	0.011	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.47	20707558.39	25564.68	6369.2	False	13C8-PFOA	1171331.76	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.47	109265.33	25593.29	2189.5	False	13C8-PFOA	1171331.76	1222.50	11Cl-PF3OUdS	0.005	0.005	✓

Sample Name	LE52	Injection Vial	2
Sample ID	L1	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.60	1505789.55	1302.12	5394.1	False	13C2-PFDA	1116778.58	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.14	221730.09	1286.55	1471.4	True	13C4-PFOS	199220.17	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.30	183767.26	1273.58	1399.1	False	13C4-PFOS	199220.17	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.58	1314673.37	1227.96	7206.8	False	13C2-PFOA	801852.28	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.91	1320212.02	1298.86	73827.2	False	13C2-PFOA	801852.28	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.27	1505679.17	1186.84	588590.5	False	13C2-PFOA	801852.28	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.64	1525382.00	1244.97	4726.5	False	13C2-PFOA	801852.28	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.99	1430590.43	1332.79	8706.1	False	13C2-PFDA	1116778.58	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.31	1383242.61	1397.70	3316.5	False	13C2-PFDA	1116778.58	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.08	1403726.10	1240.68	4516.4	False	13C2-PFDA	1116778.58	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.33	277359.69	1078.67	10751.0	False	13C4-PFOS	199220.17	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.92	235908.69	1119.59	8060.7	False	13C4-PFOS	199220.17	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.64	208627.83	1062.25	2493.0	False	13C4-PFOS	199220.17	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.68	418428.99	1153.25	3733.6	False	13C2-PFOA	801852.28	1250.00		N/A	N/A	✓

Sample Name	LE53	Injection Vial	3
Sample ID	L2	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:17:56 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481 SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.57	1496422.39	1208.11	3358.8	False	13C2-PFDA	1196191.73	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.11	217617.72	1197.66	1305.2	False	13C4-PFOS	210036.36	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.27	194241.44	1276.84	1224.4	False	13C4-PFOS	210036.36	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.58	1312274.21	1307.01	9150.8	False	13C2-PFOA	751979.29	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.91	1290953.40	1354.31	266963.1	False	13C2-PFOA	751979.29	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.26	1526342.92	1282.92	1275709.7	False	13C2-PFOA	751979.29	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.63	1530206.51	1331.74	6945.9	False	13C2-PFOA	751979.29	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.97	1442668.59	1254.81	4556.9	False	13C2-PFDA	1196191.73	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.29	1335572.57	1259.94	5201.2	False	13C2-PFDA	1196191.73	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.02	1457794.28	1202.93	3898.3	False	13C2-PFDA	1196191.73	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.33	256978.01	947.94	9891.0	False	13C4-PFOS	210036.36	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.92	232244.10	1045.43	7959.9	False	13C4-PFOS	210036.36	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.62	229552.50	1108.60	1463.8	False	13C4-PFOS	210036.36	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.67	394878.27	1160.52	5376.3	False	13C2-PFOA	751979.29	1250.00		N/A	N/A	✓

Sample Name	LE54	Injection Vial	4
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:28:24 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481 SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.59	1412764.86	1127.83	3545.9	False	13C2-PFDA	1209707.91	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.12	200698.99	1232.14	1626.4	False	13C4-PFOS	188286.52	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.29	186649.07	1368.66	1228.1	False	13C4-PFOS	188286.52	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.57	1400558.82	1392.79	10736.7	False	13C2-PFOA	753138.40	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.90	1286753.00	1347.82	69358402.0	False	13C2-PFOA	753138.40	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.26	1639736.32	1376.11	36163.9	False	13C2-PFOA	753138.40	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.63	1608464.03	1397.69	57215.5	False	13C2-PFOA	753138.40	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.98	1359385.28	1169.16	3892.9	False	13C2-PFDA	1209707.91	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.30	1275204.50	1189.55	3375.8	False	13C2-PFDA	1209707.91	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.08	1435506.54	1171.31	4245.9	False	13C2-PFDA	1209707.91	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.32	276029.89	1135.84	12983.5	False	13C4-PFOS	188286.52	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.91	253722.14	1274.05	1336.8	False	13C4-PFOS	188286.52	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.63	224996.57	1212.11	1301.5	False	13C4-PFOS	188286.52	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.67	406710.53	1193.45	3797.1	False	13C2-PFOA	753138.40	1250.00		N/A	N/A	✓

Sample Name	LE55	Injection Vial	5
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:38:51 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481 SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.58	1456848.82	1230.43	3990.9	False	13C2-PFDA	1143432.87	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.11	189957.52	1178.66	952.6	False	13C4-PFOS	186295.06	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.28	168972.17	1252.29	1418.8	False	13C4-PFOS	186295.06	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.57	1285588.08	1195.09	5842.5	False	13C2-PFOA	805678.68	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.89	1250143.50	1224.08	1579351.8	False	13C2-PFOA	805678.68	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.25	1605377.26	1259.42	316181.8	False	13C2-PFOA	805678.68	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.61	1510629.07	1227.07	4261.5	False	13C2-PFOA	805678.68	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.97	1344667.08	1223.53	25087.3	False	13C2-PFDA	1143432.87	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.29	1176626.34	1161.21	3199.4	False	13C2-PFDA	1143432.87	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.08	1429153.67	1233.71	4726.4	False	13C2-PFDA	1143432.87	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.32	291582.33	1212.66	48270.2	False	13C4-PFOS	186295.06	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.90	242134.25	1228.86	2919.8	False	13C4-PFOS	186295.06	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.61	230233.11	1253.58	1339.3	False	13C4-PFOS	186295.06	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.66	444814.40	1220.15	5185.3	False	13C2-PFOA	805678.68	1250.00		N/A	N/A	✓

Sample Name	LE56	Injection Vial	6
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:49:18 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481 SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.62	1310571.21	1221.42	4942.3	False	13C2-PFDA	1036214.22	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.14	193858.33	1302.33	1127.2	False	13C4-PFOS	172067.33	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.31	156807.25	1258.22	1190.1	False	13C4-PFOS	172067.33	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.57	1253983.80	1251.14	8480.8	False	13C2-PFOA	750664.35	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.90	1025288.60	1077.49	99227.0	False	13C2-PFOA	750664.35	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.27	1403048.47	1181.36	84108.2	False	13C2-PFOA	750664.35	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.64	1379334.63	1202.54	4592.5	False	13C2-PFOA	750664.35	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.99	1208641.86	1213.56	4195.0	False	13C2-PFDA	1036214.22	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.32	1147499.99	1249.65	4464.5	False	13C2-PFDA	1036214.22	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.10	1291383.70	1230.13	3952.3	False	13C2-PFDA	1036214.22	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.33	286265.47	1288.99	13544.3	False	13C4-PFOS	172067.33	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.91	219381.01	1205.44	8714.1	False	13C4-PFOS	172067.33	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.63	222886.68	1313.93	1448.1	False	13C4-PFOS	172067.33	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.67	430213.14	1266.58	3439.4	False	13C2-PFOA	750664.35	1250.00		N/A	N/A	✓

Sample Name	LE57	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:59:46 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.61	1271034.58	1410.09	4292.0	False	13C2-PFDA	870492.05	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.14	178755.82	1302.66	869.0	False	13C4-PFOS	158621.74	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.30	122976.95	1070.41	979.4	False	13C4-PFOS	158621.74	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.57	1061737.07	1126.02	7137.2	False	13C2-PFOA	706202.58	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.90	1071944.61	1197.44	16993.5	False	13C2-PFOA	706202.58	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.26	1171331.76	1048.35	126133.5	False	13C2-PFOA	706202.58	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.63	1182656.32	1095.98	3721.6	False	13C2-PFOA	706202.58	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.99	1092817.35	1306.15	4923.6	False	13C2-PFDA	870492.05	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.32	958041.34	1241.95	3958.3	False	13C2-PFDA	870492.05	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.09	1253386.65	1421.24	3318.6	False	13C2-PFDA	870492.05	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.32	268383.20	1310.91	7468.0	False	13C4-PFOS	158621.74	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.91	204953.64	1221.63	36651.6	False	13C4-PFOS	158621.74	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.63	190708.52	1219.53	1379.7	False	13C4-PFOS	158621.74	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.66	481255.55	1506.06	3592.3	False	13C2-PFOA	706202.58	1250.00		N/A	N/A	✓

Sample Name	LE59 ICC	Injection Vial	9
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 9:20:41 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS 1	298.9 / 80.0	1.33	2644.39	2500.00	105.78
PFBS 2	298.9 / 99.0	1.33	2542.30	2500.00	101.69
PFHxA 1	313.0 / 269.0	1.58	2378.78	2525.00	94.21
PFHxA 2	313.0 / 119.0	1.58	2218.42	2525.00	87.86
PFHpA 1	363.0 / 319.0	1.91	2398.16	2500.00	95.93
PFHpA 2	363.0 / 169.0	1.91	2202.14	2500.00	88.09
PFHxS 1	399.0 / 80.0	1.92	2546.86	2525.00	100.87
PFHxS 2	399.0 / 99.0	1.92	2682.81	2525.00	106.25
PFOA 1	413.0 / 369.0	2.27	2537.81	2500.00	101.51
PFOA 2	413.0 / 169.0	2.27	2305.73	2500.00	92.23
PFNA 1	463.0 / 419.0	2.64	2463.13	2500.00	98.53
PFNA 2	463.0 / 219.0	2.64	2308.18	2500.00	92.33
PFOS 1	499.0 / 80.0	2.64	2356.83	2525.00	93.34
PFOS 2	499.0 / 99.0	2.63	2406.52	2525.00	95.31
PFDA 1	513.0 / 469.0	3.00	2553.45	2500.00	102.14
PFDA 2	513.0 / 219.0	3.00	2435.58	2500.00	97.42
PFUnA 1	563.0 / 519.0	3.32	2395.56	2500.00	95.82
PFUnA 2	563.0 / 269.0	3.32	2498.28	2500.00	99.93
PFDoA 1	613.0 / 569.0	3.61	2446.06	2500.00	97.84
PFDoA 2	613.0 / 319.0	3.61	2206.47	2500.00	88.26
PFTrDA 1	663.0 / 619.0	3.86	2467.21	2500.00	98.69
PFTrDA 2	663.0 / 169.0	3.86	2310.18	2500.00	92.41
PFTeDA 1	713.0 / 669.0	4.10	2565.97	2500.00	102.64
PFTeDA 2	713.0 / 169.0	4.10	2526.20	2500.00	101.05
NMeFOSAA 1	570.0 / 419.0	3.14	2137.74	2500.00	85.51
NMeFOSAA 2	570.0 / 512.0	3.14	2257.70	2500.00	90.31
NEtFOSAA 1	584.0 / 419.0	3.31	2221.33	2500.00	88.85
NEtFOSAA 2	584.0 / 483.0	3.30	2430.59	2500.00	97.22
HFPO-DA 1	285.0 / 169.0	1.67	2411.28	2500.00	96.45
HFPO-DA 2	285.0 / 118.8	1.66	2398.26	2500.00	95.93
ADONA 1	377.0 / 251.0	1.94	2343.73	2500.00	93.75
ADONA 2	377.0 / 85.0	1.94	2280.34	2500.00	91.21
9Cl-PF3ONS 1	531.0 / 351.0	2.84	2221.08	2500.00	88.84
9Cl-PF3ONS 2	531.0 / 83.0	2.84	2187.30	2500.00	87.49
11Cl-pf3OUdS 1	631.0 / 451.0	3.47	2203.15	2500.00	88.13
11Cl-pf3OUdS 2	631.0 / 83.0	3.47	2319.19	2500.00	92.77

Sample Name	LE55 CCV	Injection Vial	32
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:00:30 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS 1	298.9 / 80.0	1.33	2844.79	2500.00	113.79
PFBS 2	298.9 / 99.0	1.33	2668.22	2500.00	106.73
PFHxA 1	313.0 / 269.0	1.57	2383.47	2525.00	94.39
PFHxA 2	313.0 / 119.0	1.57	2388.83	2525.00	94.61
PFHpA 1	363.0 / 319.0	1.90	2662.88	2500.00	106.52
PFHpA 2	363.0 / 169.0	1.90	2304.14	2500.00	92.17
PFHxS 1	399.0 / 80.0	1.91	2670.65	2525.00	105.77
PFHxS 2	399.0 / 99.0	1.91	2556.59	2525.00	101.25
PFOA 1	413.0 / 369.0	2.26	2394.97	2500.00	95.80
PFOA 2	413.0 / 169.0	2.26	2354.27	2500.00	94.17
PFNA 1	463.0 / 419.0	2.63	2346.00	2500.00	93.84
PFNA 2	463.0 / 219.0	2.63	2319.40	2500.00	92.78
PFOS 1	499.0 / 80.0	2.62	2695.34	2525.00	106.75
PFOS 2	499.0 / 99.0	2.63	2679.08	2525.00	106.10
PFDA 1	513.0 / 469.0	2.98	2658.22	2500.00	106.33
PFDA 2	513.0 / 219.0	2.98	2547.01	2500.00	101.88
PFUnA 1	563.0 / 519.0	3.30	2645.75	2500.00	105.83
PFUnA 2	563.0 / 269.0	3.30	2573.48	2500.00	102.94
PFDoA 1	613.0 / 569.0	3.59	2504.74	2500.00	100.19
PFDoA 2	613.0 / 319.0	3.59	2290.28	2500.00	91.61
PFTrDA 1	663.0 / 619.0	3.84	2573.04	2500.00	102.92
PFTrDA 2	663.0 / 169.0	3.84	2514.45	2500.00	100.58
PFTeDA 1	713.0 / 669.0	4.07	2516.35	2500.00	100.65
PFTeDA 2	713.0 / 169.0	4.07	2512.14	2500.00	100.49
NMeFOSAA 1	570.0 / 419.0	3.13	2227.26	2500.00	89.09
NMeFOSAA 2	570.0 / 512.0	3.13	2498.61	2500.00	99.94
NEtFOSAA 1	584.0 / 419.0	3.29	2344.52	2500.00	93.78
NEtFOSAA 2	584.0 / 483.0	3.29	2053.42	2500.00	82.14
HFPO-DA 1	285.0 / 169.0	1.66	2504.70	2500.00	100.19
HFPO-DA 2	285.0 / 118.8	1.66	2714.03	2500.00	108.56
ADONA 1	377.0 / 251.0	1.93	2415.94	2500.00	96.64
ADONA 2	377.0 / 85.0	1.93	2359.27	2500.00	94.37
9Cl-PF3ONS 1	531.0 / 351.0	2.83	2051.40	2500.00	82.06
9Cl-PF3ONS 2	531.0 / 83.0	2.83	1855.48	2500.00	74.22
11Cl-pf3OUdS 1	631.0 / 451.0	3.46	2203.14	2500.00	88.13
11Cl-pf3OUdS 2	631.0 / 83.0	3.46	1935.71	2500.00	77.43

Sample Name	LE54 CCV	Injection Vial	9
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:34:49 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.33	1102.04	1000.00	110.20
PFBS_2	298.9 / 99.0	1.33	1059.03	1000.00	105.90
PFHxA_1	313.0 / 269.0	1.58	1010.56	1010.00	100.06
PFHxA_2	313.0 / 119.0	1.58	953.35	1010.00	94.39
PFHpA_1	363.0 / 319.0	1.91	1051.55	1000.00	105.16
PFHpA_2	363.0 / 169.0	1.91	785.98	1000.00	78.60
PFHxS_1	399.0 / 80.0	1.92	1078.00	1010.00	106.73
PFHxS_2	399.0 / 99.0	1.92	1062.79	1010.00	105.23
PFOA_1	413.0 / 369.0	2.27	882.74	1000.00	88.27
PFOA_2	413.0 / 169.0	2.27	905.51	1000.00	90.55
PFNA_1	463.0 / 419.0	2.63	978.00	1000.00	97.80
PFNA_2	463.0 / 219.0	2.63	919.77	1000.00	91.98
PFOS_1	499.0 / 80.0	2.63	968.84	1010.00	95.93
PFOS_2	499.0 / 99.0	2.63	964.31	1010.00	95.48
PFDA_1	513.0 / 469.0	2.99	1106.55	1000.00	110.66
PFDA_2	513.0 / 219.0	2.99	1166.86	1000.00	116.69
PFUnA_1	563.0 / 519.0	3.31	919.47	1000.00	91.95
PFUnA_2	563.0 / 269.0	3.31	982.00	1000.00	98.20
PFDoA_1	613.0 / 569.0	3.59	950.55	1000.00	95.05
PFDoA_2	613.0 / 319.0	3.59	931.52	1000.00	93.15
PFTrDA_1	663.0 / 619.0	3.84	1076.76	1000.00	107.68
PFTrDA_2	663.0 / 169.0	3.84	1051.53	1000.00	105.15
PFTeDA_1	713.0 / 669.0	4.08	1023.84	1000.00	102.38
PFTeDA_2	713.0 / 169.0	4.07	997.91	1000.00	99.79
NMeFOSAA_1	570.0 / 419.0	3.13	891.17	1000.00	89.12
NMeFOSAA_2	570.0 / 512.0	3.13	941.85	1000.00	94.19
NEtFOSAA_1	584.0 / 419.0	3.29	951.45	1000.00	95.14
NEtFOSAA_2	584.0 / 483.0	3.29	1110.66	1000.00	111.07
HFPO-DA_1	285.0 / 169.0	1.66	991.79	1000.00	99.18
HFPO-DA_2	285.0 / 118.8	1.66	1097.54	1000.00	109.75
ADONA_1	377.0 / 251.0	1.94	926.03	1000.00	92.60
ADONA_2	377.0 / 85.0	1.94	873.29	1000.00	87.33
9Cl-PF3ONS_1	531.0 / 351.0	2.84	760.90	1000.00	76.09
9Cl-PF3ONS_2	531.0 / 83.0	2.83	780.49	1000.00	78.05
11Cl-pf3OUdS_1	631.0 / 451.0	3.46	821.10	1000.00	82.11
11Cl-pf3OUdS_2	631.0 / 83.0	3.46	826.34	1000.00	82.63

Sample Name	LE59 ICC	Injection Vial	9
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 9:20:41 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
13C2-PFDoA	615.0 / 570.0	3.61	1176.89	1250.00	94.15
d3-MeFOSAA	573.0 / 419.0	3.14	1110.67	1250.00	88.85
d5-EtFOSAA	589.0 / 419.0	3.30	1189.06	1250.00	95.12
13C5-PFHxA	318.0 / 273.0	1.57	1220.08	1250.00	97.61
13C4-PFHpA	367.0 / 322.0	1.90	1264.97	1250.00	101.20
13C8-PFOA	421.0 / 376.0	2.26	1191.38	1222.50	97.45
13C9-PFNA	472.0 / 427.0	2.63	1244.18	1250.00	99.53
13C6-PFDA	519.0 / 474.0	2.99	1178.60	1250.00	94.29
13C7-PFUnA	570.0 / 525.0	3.31	1131.90	1250.00	90.55
13C2-PFTeDA	715.0 / 670.0	4.09	1154.91	1250.00	92.39
13C3-PFBS	302.0 / 99.0	1.32	1025.88	1162.50	88.25
13C3-PFHxS	402.0 / 99.0	1.91	1036.50	1182.50	87.65
13C8-PFOS	507.0 / 99.0	2.63	1085.81	1195.00	90.86
13C3-HFPO-DA	287.0 / 169.0	1.66	1173.24	1250.00	93.86

Sample Name	LE55 CCV	Injection Vial	32
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:00:30 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
13C2-PFDoA	615.0 / 570.0	3.59	1302.83	1250.00	104.23
d3-MeFOSAA	573.0 / 419.0	3.12	1041.62	1250.00	83.33
d5-EtFOSAA	589.0 / 419.0	3.29	1144.64	1250.00	91.57
13C5-PFHxA	318.0 / 273.0	1.56	1232.84	1250.00	98.63
13C4-PFHpA	367.0 / 322.0	1.89	1245.79	1250.00	99.66
13C8-PFOA	421.0 / 376.0	2.25	1236.99	1222.50	101.19
13C9-PFNA	472.0 / 427.0	2.62	1264.78	1250.00	101.18
13C6-PFDA	519.0 / 474.0	2.98	1254.89	1250.00	100.39
13C7-PFUnA	570.0 / 525.0	3.30	1266.19	1250.00	101.30
13C2-PFTeDA	715.0 / 670.0	4.06	1253.63	1250.00	100.29
13C3-PFBS	302.0 / 99.0	1.32	1011.35	1162.50	87.00
13C3-PFHxS	402.0 / 99.0	1.90	1013.07	1182.50	85.67
13C8-PFOS	507.0 / 99.0	2.62	1003.05	1195.00	83.94
13C3-HFPO-DA	287.0 / 169.0	1.66	1150.25	1250.00	92.02

Sample Name	LE54 CCV	Injection Vial	9
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:34:49 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
13C2-PFDoA	615.0 / 570.0	3.59	1205.03	1250.00	96.40
d3-MeFOSAA	573.0 / 419.0	3.12	1600.46	1250.00	128.04
d5-EtFOSAA	589.0 / 419.0	3.29	1555.87	1250.00	124.47
13C5-PFHxA	318.0 / 273.0	1.57	1104.20	1250.00	88.34
13C4-PFHpA	367.0 / 322.0	1.90	1103.91	1250.00	88.31
13C8-PFOA	421.0 / 376.0	2.26	1224.13	1222.50	100.13
13C9-PFNA	472.0 / 427.0	2.63	1172.80	1250.00	93.82
13C6-PFDA	519.0 / 474.0	2.98	1062.85	1250.00	85.03
13C7-PFUnA	570.0 / 525.0	3.30	1160.08	1250.00	92.81
13C2-PFTeDA	715.0 / 670.0	4.07	1122.69	1250.00	89.82
13C3-PFBS	302.0 / 99.0	1.32	1004.20	1162.50	86.38
13C3-PFHxS	402.0 / 99.0	1.91	1034.97	1182.50	87.52
13C8-PFOS	507.0 / 99.0	2.62	1151.14	1195.00	96.33
13C3-HFPO-DA	287.0 / 169.0	1.66	963.75	1250.00	77.10

Sample Name	LE59 ICC	Injection Vial	9
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 9:20:41 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.33	1696866.77	2644.39	9333.1	False	13C3-PFBS	275006.90	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.33	546973.65	2542.30	3788.7	False	13C3-PFBS	275006.90	1162.50	PFBS	0.322	0.326	✓
PFHxA_1	313.0 / 269.0	1.58	2865025.41	2378.78	1193.5	False	13C5-PFHxA	1258985.02	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.58	171161.14	2218.42	1062.1	False	13C5-PFHxA	1258985.02	1250.00	PFHxA	0.060	0.062	✓
PFHpA_1	363.0 / 319.0	1.91	2242170.77	2398.16	1107.6	False	13C4-PFHpA	1239248.51	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	1.91	68531.54	2202.14	1406.3	False	13C4-PFHpA	1239248.51	1250.00	PFHpA	0.031	0.032	✓
PFHxS_1	399.0 / 80.0	1.92	1638236.75	2546.86	2672.9	False	13C3-PFHxS	227691.88	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	1.92	630506.77	2682.81	2326.7	False	13C3-PFHxS	227691.88	1182.50	PFHxS	0.385	0.368	✓
PFOA_1	413.0 / 369.0	2.27	2768328.81	2537.81	791.4	False	13C8-PFOA	1456754.81	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.27	270452.60	2305.73	1095.8	False	13C8-PFOA	1456754.81	1222.50	PFOA	0.098	0.103	✓
PFNA_1	463.0 / 419.0	2.64	2661482.21	2463.13	751.0	False	13C9-PFNA	1469255.32	1250.00	PFNA			
PFNA_2	463.0 / 219.0	2.64	850225.56	2308.18	1674.7	False	13C9-PFNA	1469255.32	1250.00	PFNA	0.319	0.336	✓
PFOS_1	499.0 / 80.0	2.64	1632918.77	2356.83	1774.5	False	13C8-PFOS	222326.24	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.63	335296.56	2406.52	6324.8	False	13C8-PFOS	222326.24	1195.00	PFOS	0.205	0.204	✓
PFDA_1	513.0 / 469.0	3.00	2571484.86	2553.45	870.2	False	13C6-PFDA	1318220.37	1250.00	PFDA			
PFDA_2	513.0 / 219.0	3.00	156504.09	2435.58	7838.7	False	13C6-PFDA	1318220.37	1250.00	PFDA	0.061	0.059	✓
PFOA_1	563.0 / 519.0	3.32	2599211.02	2395.56	1327.6	False	13C7-PFOA	1167234.68	1250.00	PFOA			
PFOA_2	563.0 / 269.0	3.32	174218.72	2498.28	3521.7	False	13C7-PFOA	1167234.68	1250.00	PFOA	0.067	0.062	✓
PFDoA_1	613.0 / 569.0	3.61	2891450.93	2446.06	1490.2	False	13C2-PFDoA	1418129.53	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.61	325194.67	2206.47	2278.5	False	13C2-PFDoA	1418129.53	1250.00	PFDoA	0.112	0.118	✓
PFTeDA_1	663.0 / 619.0	3.86	2365870.61	2467.21	2146.5	False	13C2-PFTeDA	1361554.53	1250.00	PFTeDA			
PFTeDA_2	663.0 / 169.0	3.86	166034.49	2310.18	2706.6	False	13C2-PFTeDA	1361554.53	1250.00	PFTeDA	0.070	0.072	✓
PFTeDA_1	713.0 / 669.0	4.10	2859610.70	2565.97	3107.7	False	13C2-PFTeDA	1361554.53	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.10	166719.52	2526.20	3948.8	False	13C2-PFTeDA	1361554.53	1250.00	PFTeDA	0.058	0.057	✓
NMeFOSAA_1	570.0 / 419.0	3.14	280531.77	2137.74	4119.3	False	d3-MeFOSAA	199438.26	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.14	297360.22	2257.70	1753.9	False	d3-MeFOSAA	199438.26	1250.00	NMeFOSAA	1.060	1.071	✓
NEiFOSAA_1	584.0 / 419.0	3.31	338709.72	2221.33	2875.5	False	d5-EiFOSAA	179712.01	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	3.30	20673.83	2430.59	267.3	False	d5-EiFOSAA	179712.01	1250.00	NEiFOSAA	0.061	0.053	✓
HFPO-DA_1	285.0 / 169.0	1.67	2657100.26	2411.28	4781.9	False	13C3-HFPO-DA	410283.06	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	1.66	58887.40	2398.26	50944.4	False	13C3-HFPO-DA	410283.06	1250.00	HFPO-DA	0.022	0.024	✓
ADONA_1	377.0 / 251.0	1.94	5888955.99	2343.73	7492.7	False	13C8-PFOA	1456754.81	1222.50	ADONA			
ADONA_2	377.0 / 85.0	1.94	88431.79	2280.34	7095.8	False	13C8-PFOA	1456754.81	1222.50	ADONA	0.015	0.015	✓
9CI-PF3ONS_1	531.0 / 351.0	2.84	3023065.11	2221.08	2196.7	False	13C8-PFOA	1456754.81	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	2.84	32559.86	2187.30	3072.4	False	13C8-PFOA	1456754.81	1222.50	9CI-PF3ONS	0.011	0.011	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.47	2181900.90	2203.15	2162.9	False	13C8-PFOA	1456754.81	1222.50	11Cl-pf3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.47	11744.17	2319.19	2995.4	False	13C8-PFOA	1456754.81	1222.50	11Cl-pf3OUdS	0.005	0.005	✓

Sample Name	LE55 CCV	Injection Vial	32
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:00:30 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.33	1898966.54	2844.79	7128.4	False	13C3-PFBS	287305.46	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.33	598504.24	2668.22	4035.6	False	13C3-PFBS	287305.46	1162.50	PFBS	0.315	0.326	✓
PFHxA_1	313.0 / 269.0	1.57	3196793.03	2383.47	908.9	False	13C5-PFHxA	1402117.66	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.57	204934.04	2388.83	965.2	False	13C5-PFHxA	1402117.66	1250.00	PFHxA	0.064	0.062	✓
PFHpA_1	363.0 / 319.0	1.90	2692262.67	2662.88	1090.4	False	13C4-PFHpA	1345146.36	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	1.90	77795.33	2304.14	1033.7	False	13C4-PFHpA	1345146.36	1250.00	PFHpA	0.029	0.032	✓
PFHxS_1	399.0 / 80.0	1.91	1778567.71	2670.65	3068.2	False	13C3-PFHxS	235836.59	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	1.91	622696.04	2556.59	1827.8	False	13C3-PFHxS	235836.59	1182.50	PFHxS	0.350	0.368	✓
PFOA_1	413.0 / 369.0	2.26	2992637.80	2394.97	711.4	False	13C8-PFOA	1667053.35	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.26	316030.52	2354.27	719.4	False	13C8-PFOA	1667053.35	1222.50	PFOA	0.106	0.103	✓
PFNA_1	463.0 / 419.0	2.63	2841804.09	2346.00	681.2	False	13C9-PFNA	1646184.60	1250.00	PFNA			
PFNA_2	463.0 / 219.0	2.63	957222.42	2319.40	1048.6	False	13C9-PFNA	1646184.60	1250.00	PFNA	0.337	0.336	✓
PFOS_1	499.0 / 80.0	2.62	1826893.54	2695.34	1218.8	False	13C8-PFOS	217649.17	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.63	364983.41	2679.08	1752.8	False	13C8-PFOS	217649.17	1195.00	PFOS	0.200	0.204	✓
PFDA_1	513.0 / 469.0	2.98	2832717.99	2658.22	953.5	False	13C6-PFDA	1396476.66	1250.00	PFDA			
PFDA_2	513.0 / 219.0	2.98	173469.82	2547.01	20779.8	False	13C6-PFDA	1396476.66	1250.00	PFDA	0.061	0.059	✓
PFUnA_1	563.0 / 519.0	3.30	3190957.76	2645.75	1440.4	False	13C7-PFUnA	1299137.88	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.30	199777.77	2573.48	4505.0	False	13C7-PFUnA	1299137.88	1250.00	PFUnA	0.063	0.062	✓
PFDoA_1	613.0 / 569.0	3.59	3259459.79	2504.74	1765.7	False	13C2-PFDoA	1561973.37	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.59	371854.63	2290.28	2135.4	False	13C2-PFDoA	1561973.37	1250.00	PFDoA	0.114	0.118	✓
PFTeDA_1	663.0 / 619.0	3.84	2661453.40	2573.04	2230.0	False	13C2-PFTeDA	1470492.87	1250.00	PFTeDA			
PFTeDA_2	663.0 / 169.0	3.84	195005.81	2514.45	2548.3	False	13C2-PFTeDA	1470492.87	1250.00	PFTeDA	0.073	0.072	✓
PFTeDA_1	713.0 / 669.0	4.07	3030357.55	2516.35	3549.1	False	13C2-PFTeDA	1470492.87	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.07	179064.71	2512.14	3484.8	False	13C2-PFTeDA	1470492.87	1250.00	PFTeDA	0.059	0.057	✓
NMeFOSAA_1	570.0 / 419.0	3.13	291935.11	2227.26	648.2	False	d3-MeFOSAA	199127.44	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.13	327748.59	2498.61	3272.7	False	d3-MeFOSAA	199127.44	1250.00	NMeFOSAA	1.123	1.071	✓
NEiFOSAA_1	584.0 / 419.0	3.29	362182.53	2344.52	1941.5	False	d5-EtFOSAA	182004.58	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	3.29	17589.99	2053.42	1354723.3	False	d5-EtFOSAA	182004.58	1250.00	NEiFOSAA	0.049	0.053	✓
HFPO-DA_1	285.0 / 169.0	1.66	2977820.79	2504.70	8489.2	False	13C3-HFPO-DA	443339.20	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	1.66	71648.84	2714.03	1915481.2	False	13C3-HFPO-DA	443339.20	1250.00	HFPO-DA	0.024	0.024	✓
ADONA_1	377.0 / 251.0	1.93	6946862.69	2415.94	13118.0	False	13C8-PFOA	1667053.35	1222.50	ADONA			
ADONA_2	377.0 / 85.0	1.93	104802.73	2359.27	13751.5	False	13C8-PFOA	1667053.35	1222.50	ADONA	0.015	0.015	✓
9CI-PF3ONS_1	531.0 / 351.0	2.83	3189740.19	2051.40	1948.8	False	13C8-PFOA	1667053.35	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	2.83	31377.18	1855.48	3676.0	False	13C8-PFOA	1667053.35	1222.50	9CI-PF3ONS	0.010	0.011	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.46	2496876.05	2203.14	2267.1	False	13C8-PFOA	1667053.35	1222.50	11Cl-pf3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.46	11098.75	1935.71	2222.8	False	13C8-PFOA	1667053.35	1222.50	11Cl-pf3OUdS	0.004	0.005	✓

Sample Name	LE54 CCV	Injection Vial	9
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:34:49 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.33	811272.10	1102.04	4950.0	False	13C3-PFBS	290853.74	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.33	255681.95	1059.03	2703.0	False	13C3-PFBS	290853.74	1162.50	PFBS	0.315	0.326	✓
PFHxA_1	313.0 / 269.0	1.58	1483965.76	1010.56	883.0	False	13C5-PFHxA	1456899.08	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.58	87655.23	953.35	710.6	False	13C5-PFHxA	1456899.08	1250.00	PFHxA	0.059	0.062	✓
PFHpA_1	363.0 / 319.0	1.91	1150152.53	1051.55	797.8	False	13C4-PFHpA	1382811.45	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	1.91	27836.27	785.98	342.2	False	13C4-PFHpA	1382811.45	1250.00	PFHpA	0.024	0.032	✓
PFHxS_1	399.0 / 80.0	1.92	757290.44	1078.00	1770.6	False	13C3-PFHxS	245650.03	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	1.92	274284.05	1062.79	2453.7	False	13C3-PFHxS	245650.03	1182.50	PFHxS	0.362	0.368	✓
PFOA_1	413.0 / 369.0	2.27	1304639.39	882.74	510.0	False	13C8-PFOA	1913878.81	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.27	138882.71	905.51	417.0	False	13C8-PFOA	1913878.81	1222.50	PFOA	0.106	0.103	✓
PFNA_1	463.0 / 419.0	2.63	1295870.56	978.00	566.1	False	13C9-PFNA	1770882.40	1250.00	PFNA			
PFNA_2	463.0 / 219.0	2.63	410875.68	919.77	875.2	False	13C9-PFNA	1770882.40	1250.00	PFNA	0.317	0.336	✓
PFOS_1	499.0 / 80.0	2.63	774999.91	968.84	779.3	False	13C8-PFOS	254668.58	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.63	156599.12	964.31	2060.6	False	13C8-PFOS	254668.58	1195.00	PFOS	0.202	0.204	✓
PFDA_1	513.0 / 469.0	2.99	1343766.91	1106.55	736.5	False	13C6-PFDA	1532355.36	1250.00	PFDA			
PFDA_2	513.0 / 219.0	2.99	86041.59	1166.86	5046.8	False	13C6-PFDA	1532355.36	1250.00	PFDA	0.064	0.059	✓
PFUnA_1	563.0 / 519.0	3.31	1346774.56	919.47	1076.7	False	13C7-PFUnA	1542069.85	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.31	89628.54	982.00	1173.1	False	13C7-PFUnA	1542069.85	1250.00	PFUnA	0.067	0.062	✓
PFDoA_1	613.0 / 569.0	3.59	1534439.04	950.55	1134.9	False	13C2-PFDoA	1871719.26	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.59	179916.33	931.52	2592.5	False	13C2-PFDoA	1871719.26	1250.00	PFDoA	0.117	0.118	✓
PFTTrDA_1	663.0 / 619.0	3.84	1344321.39	1076.76	2030.3	False	13C2-PFTTeDA	1706138.45	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	3.84	95907.77	1051.53	2043.3	False	13C2-PFTTeDA	1706138.45	1250.00	PFTTrDA	0.071	0.072	✓
PFTTeDA_1	713.0 / 669.0	4.08	1490138.18	1023.84	2729.1	False	13C2-PFTTeDA	1706138.45	1250.00	PFTTeDA			
PFTTeDA_2	713.0 / 169.0	4.07	83527.45	997.91	2140.6	False	13C2-PFTTeDA	1706138.45	1250.00	PFTTeDA	0.056	0.057	✓
NMeFOSAA_1	570.0 / 419.0	3.13	194331.49	891.17	651.8	False	d3-MeFOSAA	335878.12	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.13	216550.90	941.85	2943.1	False	d3-MeFOSAA	335878.12	1250.00	NMeFOSAA	1.114	1.071	✓
NEiFOSAA_1	584.0 / 419.0	3.29	206709.25	951.45	43486.3	False	d5-EtFOSAA	258376.98	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	3.29	13092.42	1110.66	348.4	False	d5-EtFOSAA	258376.98	1250.00	NEiFOSAA	0.063	0.053	✓
HFPO-DA_1	285.0 / 169.0	1.66	1187366.24	991.79	3723.6	False	13C3-HFPO-DA	430935.37	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	1.66	29474.00	1097.54	9517.9	False	13C3-HFPO-DA	430935.37	1250.00	HFPO-DA	0.025	0.024	✓
ADONA_1	377.0 / 251.0	1.94	3054108.08	926.03	15772.8	False	13C8-PFOA	1913878.81	1222.50	ADONA			
ADONA_2	377.0 / 85.0	1.94	42411.56	873.29	1293717.8	False	13C8-PFOA	1913878.81	1222.50	ADONA	0.014	0.015	✓
9CI-PF3ONS_1	531.0 / 351.0	2.84	1306771.76	760.90	1680.5	False	13C8-PFOA	1913878.81	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	2.83	14141.55	780.49	280.6	False	13C8-PFOA	1913878.81	1222.50	9CI-PF3ONS	0.011	0.011	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.46	1034521.12	821.10	1565.2	False	13C8-PFOA	1913878.81	1222.50	11Cl-pf3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.46	4967.65	826.34	432.3	False	13C8-PFOA	1913878.81	1222.50	11Cl-pf3OUdS	0.005	0.005	✓

Sample Name	LE59 ICC	Injection Vial	9
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 9:20:41 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481 SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.61	1418129.53	1176.89	3985.3	False	13C2-PFDA	1163677.97	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.14	199561.54	1110.67	1021.5	False	13C4-PFOS	207694.43	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.30	178870.79	1189.06	1352.0	False	13C4-PFOS	207694.43	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.57	1258985.02	1220.08	5524.1	False	13C2-PFOA	772840.43	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.90	1239248.51	1264.97	125692845.8	False	13C2-PFOA	772840.43	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.26	1456754.81	1191.38	1249.0	False	13C2-PFOA	772840.43	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.63	1469255.32	1244.18	3676.8	False	13C2-PFOA	772840.43	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.99	1318220.37	1178.60	4547.8	False	13C2-PFDA	1163677.97	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.31	1167234.68	1131.90	3538.5	False	13C2-PFDA	1163677.97	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.09	1361554.53	1154.91	4808.9	False	13C2-PFDA	1163677.97	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.32	275006.90	1025.88	8134.1	False	13C4-PFOS	207694.43	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.91	227691.88	1036.50	7201.0	False	13C4-PFOS	207694.43	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.63	222326.24	1085.81	2353.0	False	13C4-PFOS	207694.43	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.66	410283.06	1173.24	4145.2	False	13C2-PFOA	772840.43	1250.00		N/A	N/A	✓

Sample Name	LE55 CCV	Injection Vial	32
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:00:30 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481 SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.59	1561973.37	1302.83	4117.4	False	13C2-PFDA	1157816.77	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.12	198332.53	1041.62	1175.6	False	13C4-PFOS	220099.98	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.29	182473.16	1144.64	1217.3	False	13C4-PFOS	220099.98	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.56	1402117.66	1232.84	7530.6	False	13C2-PFOA	851801.97	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.89	1345146.36	1245.79	29021378.8	False	13C2-PFOA	851801.97	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.25	1667053.35	1236.99	22155797.0	False	13C2-PFOA	851801.97	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.62	1646184.60	1264.78	4411.9	False	13C2-PFOA	851801.97	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.98	1396476.66	1254.89	16234.4	False	13C2-PFDA	1157816.77	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.30	1299137.88	1266.19	3249.0	False	13C2-PFDA	1157816.77	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.06	1470492.87	1253.63	3828.5	False	13C2-PFDA	1157816.77	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.32	287305.46	1011.35	13121.1	False	13C4-PFOS	220099.98	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.90	235836.59	1013.07	3534.8	False	13C4-PFOS	220099.98	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.62	217649.17	1003.05	1196.2	False	13C4-PFOS	220099.98	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.66	443339.20	1150.25	9108.0	False	13C2-PFOA	851801.97	1250.00		N/A	N/A	✓



Sample Name	LE54 CCV	Injection Vial	9
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:34:49 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481 SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.59	1871719.26	1205.03	4126.9	False	13C2-PFDA	1500024.67	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.12	310702.87	1600.46	547.9	True	13C4-PFOS	224406.09	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.29	252882.34	1555.87	1279.8	True	13C4-PFOS	224406.09	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.57	1456899.08	1104.20	7060.9	False	13C2-PFOA	988193.06	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.90	1382811.45	1103.91	21416.7	False	13C2-PFOA	988193.06	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.26	1913878.81	1224.13	19786.5	False	13C2-PFOA	988193.06	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.63	1770882.40	1172.80	4123.0	False	13C2-PFOA	988193.06	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.98	1532355.36	1062.85	18800.3	False	13C2-PFDA	1500024.67	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.30	1542069.85	1160.08	4228.7	False	13C2-PFDA	1500024.67	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.07	1706138.45	1122.69	4626.6	False	13C2-PFDA	1500024.67	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.32	290853.74	1004.20	11487.4	False	13C4-PFOS	224406.09	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.91	245650.03	1034.97	3720.4	False	13C4-PFOS	224406.09	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.62	254668.58	1151.14	1698.3	False	13C4-PFOS	224406.09	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.66	430935.37	963.75	6194.0	False	13C2-PFOA	988193.06	1250.00		N/A	N/A	✓

Raw Analytical Data

Sample Name	LE58 IB	Injection Vial	8
Sample ID	Instrument Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 9:10:14 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	N/A	N/A	N/A	True	13C3-PFBS	267877.53	1162.50	PFBS			
PFBS_2	298.9 / 99.0	N/A	N/A	N/A	N/A	True	13C3-PFBS	267877.53	1162.50	PFBS	N/A	0.326	✓
PFHxA_1	313.0 / 269.0	N/A	N/A	N/A	N/A	True	13C5-PFHxA	1277755.94	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	N/A	N/A	N/A	True	13C5-PFHxA	1277755.94	1250.00	PFHxA	N/A	0.062	✓
PFHpA_1	363.0 / 319.0	N/A	N/A	N/A	N/A	True	13C4-PFHpA	1321266.49	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	N/A	N/A	N/A	True	13C4-PFHpA	1321266.49	1250.00	PFHpA	N/A	0.032	✓
PFHxS_1	399.0 / 80.0	N/A	N/A	N/A	N/A	True	13C3-PFHxS	240039.93	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	N/A	N/A	N/A	True	13C3-PFHxS	240039.93	1182.50	PFHxS	N/A	0.368	✓
PFOA_1	413.0 / 369.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1386690.80	1222.50	PFOA			
PFOA_2	413.0 / 169.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1386690.80	1222.50	PFOA	N/A	0.103	✓
PFNA_1	463.0 / 419.0	N/A	N/A	N/A	N/A	True	13C9-PFNA	1470033.48	1250.00	PFNA			
PFNA_2	463.0 / 219.0	N/A	N/A	N/A	N/A	True	13C9-PFNA	1470033.48	1250.00	PFNA	N/A	0.336	✓
PFOS_1	499.0 / 80.0	2.61	12147.71	4.81	47.5	False	13C8-PFOS	218728.00	1195.00	PFOS			
PFOS_2	499.0 / 99.0	N/A	N/A	N/A	N/A	True	13C8-PFOS	218728.00	1195.00	PFOS	N/A	0.204	
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	1467460.01	1250.00	PFDA			
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	1467460.01	1250.00	PFDA	N/A	0.059	✓
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	1248892.92	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	1248892.92	1250.00	PFUnA	N/A	0.062	✓
PFDoA_1	613.0 / 569.0	3.58	23759.41	< 0	83.4	False	13C2-PFDoA	1434637.03	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.60	880.92	17.26	53.4	False	13C2-PFDoA	1434637.03	1250.00	PFDoA	0.037	0.118	✓
PFTTrDA_1	663.0 / 619.0	3.84	14838.21	< 0	167.3	False	13C2-PFTeDA	1446418.53	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	3.84	801.15	< 0	67.7	False	13C2-PFTeDA	1446418.53	1250.00	PFTTrDA	0.054	0.072	✓
PFTeDA_1	713.0 / 669.0	4.07	41229.80	< 0	370.1	False	13C2-PFTeDA	1446418.53	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.07	1669.18	3.81	217.2	False	13C2-PFTeDA	1446418.53	1250.00	PFTeDA	0.040	0.057	✓
NMeFOSAA_1	570.0 / 419.0	3.11	6972.34	75.65	3844.2	False	d3-MeFOSAA	189085.28	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.12	8489.24	9.17	219.2	False	d3-MeFOSAA	189085.28	1250.00	NMeFOSAA	1.218	1.071	✓
NEiFOSAA_1	584.0 / 419.0	3.29	9560.13	80.72	170.9	True	d5-EiFOSAA	169904.71	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	3.30	806.37	168.89	52.6	False	d5-EiFOSAA	169904.71	1250.00	NEiFOSAA	0.084	0.053	
HFPO-DA_1	285.0 / 169.0	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	428342.24	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	428342.24	1250.00	HFPO-DA	N/A	0.024	✓
ADONA_1	377.0 / 251.0	1.93	8405.73	4.92	229.0	False	13C8-PFOA	1386690.80	1222.50	ADONA			
ADONA_2	377.0 / 85.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1386690.80	1222.50	ADONA	N/A	0.015	
9CI-PF3ONS_1	531.0 / 351.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1386690.80	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1386690.80	1222.50	9CI-PF3ONS	N/A	0.011	✓
11CI-pf3OUdS_1	631.0 / 451.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1386690.80	1222.50	11CI-PF3OUdS			
11CI-pf3OUdS_2	631.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1386690.80	1222.50	11CI-PF3OUdS	N/A	0.005	✓

Sample Name	DB386PB-FS(0)	Injection Vial	2
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:21:28 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	N/A	N/A	N/A	True	13C3-PFBS	290965.17	1162.50	PFBS			
PFBS_2	298.9 / 99.0	N/A	N/A	N/A	N/A	True	13C3-PFBS	290965.17	1162.50	PFBS	N/A	0.326	✓
PFHxA_1	313.0 / 269.0	1.59	125096.10	< 0	184.5	True	13C5-PFHxA	1436478.33	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.58	7313.58	34.01	63.1	True	13C5-PFHxA	1436478.33	1250.00	PFHxA	0.058	0.062	✓
PFHpA_1	363.0 / 319.0	N/A	N/A	N/A	N/A	True	13C4-PFHpA	1400081.78	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	N/A	N/A	N/A	True	13C4-PFHpA	1400081.78	1250.00	PFHpA	N/A	0.032	✓
PFHxS_1	399.0 / 80.0	1.92	2010.02	< 0	35.3	False	13C3-PFHxS	276959.50	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	N/A	N/A	N/A	True	13C3-PFHxS	276959.50	1182.50	PFHxS	N/A	0.368	
PFOA_1	413.0 / 369.0	2.26	11482.25	< 0	28.7	False	13C8-PFOA	1902315.21	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.27	1846.79	19.04	11.3	False	13C8-PFOA	1902315.21	1222.50	PFOA	0.161	0.103	
PFNA_1	463.0 / 419.0	2.64	8914.22	< 0	25.5	False	13C9-PFNA	1756598.74	1250.00	PFNA			
PFNA_2	463.0 / 219.0	2.63	4302.49	0.33	33.6	False	13C9-PFNA	1756598.74	1250.00	PFNA	0.483	0.336	✓
PFOS_1	499.0 / 80.0	2.63	9589.49	< 0	39.5	True	13C8-PFOS	238708.05	1195.00	PFOS			
PFOS_2	499.0 / 99.0	N/A	N/A	N/A	N/A	True	13C8-PFOS	238708.05	1195.00	PFOS	N/A	0.204	
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	1406842.26	1250.00	PFDA			
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	1406842.26	1250.00	PFDA	N/A	0.059	✓
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	1338344.73	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	1338344.73	1250.00	PFUnA	N/A	0.062	✓
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	1652829.00	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	1652829.00	1250.00	PFDoA	N/A	0.118	✓
PFTeDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1507697.62	1250.00	PFTeDA			
PFTeDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1507697.62	1250.00	PFTeDA	N/A	0.072	✓
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1507697.62	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1507697.62	1250.00	PFTeDA	N/A	0.057	✓
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	225846.05	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	225846.05	1250.00	NMeFOSAA	N/A	1.071	✓
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	True	d5-EtFOSAA	211340.82	1250.00	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	True	d5-EtFOSAA	211340.82	1250.00	NEtFOSAA	N/A	0.053	✓
HFPO-DA_1	285.0 / 169.0	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	428289.17	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	428289.17	1250.00	HFPO-DA	N/A	0.024	✓
ADONA_1	377.0 / 251.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1902315.21	1222.50	ADONA			
ADONA_2	377.0 / 85.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1902315.21	1222.50	ADONA	N/A	0.015	✓
9CI-PF3ONS_1	531.0 / 351.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1902315.21	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1902315.21	1222.50	9CI-PF3ONS	N/A	0.011	✓
11Cl-pf3OUdS_1	631.0 / 451.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1902315.21	1222.50	11Cl-pf3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1902315.21	1222.50	11Cl-pf3OUdS	N/A	0.005	✓

Sample Name	DB387LCS-FS(0)	Injection Vial	3
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:31:57 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.33	7039951.69	9785.74	12758.4	False	13C3-PFBS	322566.09	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.33	2258380.84	9241.00	7444.2	False	13C3-PFBS	322566.09	1162.50	PFBS	0.321	0.326	✓
PFHxA_1	313.0 / 269.0	1.58	11037039.48	9141.32	2037.5	False	13C5-PFHxA	1300168.20	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.58	699479.81	8929.53	1577.4	False	13C5-PFHxA	1300168.20	1250.00	PFHxA	0.063	0.062	✓
PFHpA_1	363.0 / 319.0	1.90	8697762.31	8786.87	1966.0	False	13C4-PFHpA	1349099.08	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	1.90	279180.11	8307.85	2301.5	False	13C4-PFHpA	1349099.08	1250.00	PFHpA	0.032	0.032	✓
PFHxS_1	399.0 / 80.0	1.91	6628037.17	9676.22	5365.3	False	13C3-PFHxS	244090.51	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	1.91	2401903.62	9614.66	5440.0	False	13C3-PFHxS	244090.51	1182.50	PFHxS	0.362	0.368	✓
PFOA_1	413.0 / 369.0	2.26	10973927.40	8670.23	1365.3	False	13C8-PFOA	1710461.25	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.26	1170293.80	8478.56	1406.2	False	13C8-PFOA	1710461.25	1222.50	PFOA	0.107	0.103	✓
PFNA_1	463.0 / 419.0	2.62	9622847.14	8703.38	1977.4	False	13C9-PFNA	1515863.58	1250.00	PFNA			
PFNA_2	463.0 / 219.0	2.62	3642766.37	9615.16	2767.0	False	13C9-PFNA	1515863.58	1250.00	PFNA	0.379	0.336	✓
PFOS_1	499.0 / 80.0	2.61	6391899.26	8187.82	2035.0	False	13C8-PFOS	251496.07	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.62	1292003.74	8266.26	2319.2	False	13C8-PFOS	251496.07	1195.00	PFOS	0.202	0.204	✓
PFDA_1	513.0 / 469.0	2.97	9407007.24	9064.04	1762.8	False	13C6-PFDA	1386960.56	1250.00	PFDA			
PFDA_2	513.0 / 219.0	2.97	588721.19	8634.68	2466.0	False	13C6-PFDA	1386960.56	1250.00	PFDA	0.063	0.059	✓
PFUnA_1	563.0 / 519.0	3.29	10156910.79	8559.73	2056.5	False	13C7-PFUnA	1289138.49	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.29	670970.94	8674.56	2633.2	False	13C7-PFUnA	1289138.49	1250.00	PFUnA	0.066	0.062	✓
PFDoA_1	613.0 / 569.0	3.58	11224238.27	8986.70	2848.0	False	13C2-PFDoA	1522808.22	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.58	1311961.55	8258.49	2730.9	False	13C2-PFDoA	1522808.22	1250.00	PFDoA	0.117	0.118	✓
PFTTrDA_1	663.0 / 619.0	3.83	9600615.29	10307.61	3601.4	False	13C2-PFTTeDA	1353591.75	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	3.83	727857.76	10271.61	3553.7	False	13C2-PFTTeDA	1353591.75	1250.00	PFTTrDA	0.076	0.072	✓
PFTTeDA_1	713.0 / 669.0	4.07	10321737.43	9511.01	3615.9	False	13C2-PFTTeDA	1353591.75	1250.00	PFTTeDA			
PFTTeDA_2	713.0 / 169.0	4.07	625545.94	9590.28	4229.3	False	13C2-PFTTeDA	1353591.75	1250.00	PFTTeDA	0.061	0.057	✓
NMeFOSAA_1	570.0 / 419.0	3.12	1198831.99	9035.88	3969.9	False	d3-MeFOSAA	200183.24	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.12	1281944.06	9896.73	2561.8	False	d3-MeFOSAA	200183.24	1250.00	NMeFOSAA	1.069	1.071	✓
NEiFOSAA_1	584.0 / 419.0	3.28	1268335.15	7959.47	3122.1	False	d5-EiFOSAA	186900.50	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	3.28	74007.62	8191.54	37241.6	False	d5-EiFOSAA	186900.50	1250.00	NEiFOSAA	0.058	0.053	✓
HFPO-DA_1	285.0 / 169.0	1.66	10542742.50	9160.84	9157.3	False	13C3-HFPO-DA	469220.10	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	1.66	252142.63	9537.29	4109.6	False	13C3-HFPO-DA	469220.10	1250.00	HFPO-DA	0.024	0.024	✓
ADONA_1	377.0 / 251.0	1.94	24432248.24	8277.87	19176.2	False	13C8-PFOA	1710461.25	1222.50	ADONA			
ADONA_2	377.0 / 85.0	1.93	383177.11	8242.05	1602.2	False	13C8-PFOA	1710461.25	1222.50	ADONA	0.016	0.015	✓
9CI-PF3ONS_1	531.0 / 351.0	2.82	12171238.31	7506.93	3781.1	False	13C8-PFOA	1710461.25	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	2.82	136388.78	7583.13	414198.9	False	13C8-PFOA	1710461.25	1222.50	9CI-PF3ONS	0.011	0.011	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.44	8349734.66	7088.58	5010.5	False	13C8-PFOA	1710461.25	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.44	51775.31	8384.23	1188.9	False	13C8-PFOA	1710461.25	1222.50	11Cl-PF3OUdS	0.006	0.005	✓

Sample Name	G1773-FS1(0)	Injection Vial	4
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:42:26 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	1.33	4747119.23	15768.39	1307.3	False	13C3-PFBS	135867.25	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.33	1664415.80	16255.98	1317.4	False	13C3-PFBS	135867.25	1162.50	PFBS	0.351	0.326	✓
PFHxA_1	313.0 / 269.0	1.57	57027842.89	190186.27	936.5	False	13C5-PFHxA	326192.51	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.57	3189136.19	163150.55	866.5	False	13C5-PFHxA	326192.51	1250.00	PFHxA	0.056	0.062	✓
PFHpA_1	363.0 / 319.0	1.89	19480620.07	126580.98	486.1	False	13C4-PFHpA	211842.43	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	1.89	858381.64	163129.43	1348.8	False	13C4-PFHpA	211842.43	1250.00	PFHpA	0.044	0.032	✓
PFHxS_1	399.0 / 80.0	1.90	125904466.41	804316.17	2842.2	False	13C3-PFHxS	55912.96	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	1.91	40902614.98	717103.28	3008.2	False	13C3-PFHxS	55912.96	1182.50	PFHxS	0.325	0.368	✓
PFOA_1	413.0 / 369.0	2.26	108177898.82	311319.35	1250.8	False	13C8-PFOA	471851.09	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.25	12821701.10	336458.06	2192.9	False	13C8-PFOA	471851.09	1222.50	PFOA	0.119	0.103	✓
PFNA_1	463.0 / 419.0	2.62	39189961.48	175417.35	1187.5	False	13C9-PFNA	307254.74	1250.00	PFNA			
PFNA_2	463.0 / 219.0	2.62	12771629.74	166470.19	1438.3	False	13C9-PFNA	307254.74	1250.00	PFNA	0.326	0.336	✓
PFOS_1	499.0 / 80.0	2.56	266346712.22	1560731.90	2671.7	False	13C8-PFOS	55065.53	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.61	48824029.25	1431591.71	5530.0	False	13C8-PFOS	55065.53	1195.00	PFOS	0.183	0.204	✓
PFDA_1	513.0 / 469.0	2.97	1625609.64	2001.34	509.2	False	13C6-PFDA	1054919.68	1250.00	PFDA			
PFDA_2	513.0 / 219.0	2.97	105806.70	2061.99	440.0	True	13C6-PFDA	1054919.68	1250.00	PFDA	0.065	0.059	✓
PFUnA_1	563.0 / 519.0	3.29	5787209.04	6286.46	1353.2	False	13C7-PFUnA	998751.53	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.29	352427.52	5885.89	1031.6	False	13C7-PFUnA	998751.53	1250.00	PFUnA	0.061	0.062	✓
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	1162409.37	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	1162409.37	1250.00	PFDoA	N/A	0.118	✓
PFTTrDA_1	663.0 / 619.0	3.84	8708.71	< 0	89.5	False	13C2-PFTeDA	792105.22	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	3.78	750.24	< 0	54.6	False	13C2-PFTeDA	792105.22	1250.00	PFTTrDA	0.086	0.072	✓
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	792105.22	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	792105.22	1250.00	PFTeDA	N/A	0.057	✓
NMeFOSAA_1	570.0 / 419.0	3.04	6438.22	88.57	614.7	True	d3-MeFOSAA	141652.67	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.11	5475.89	< 0	31.5	False	d3-MeFOSAA	141652.67	1250.00	NMeFOSAA	0.851	1.071	✓
NEiFOSAA_1	584.0 / 419.0	3.29	2888.81	37.55	1063.4	False	d5-EiFOSAA	148964.05	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	True	d5-EiFOSAA	148964.05	1250.00	NEiFOSAA	N/A	0.053	
HFPO-DA_1	285.0 / 169.0	1.66	30395.07	4.46	74.3	False	13C3-HFPO-DA	323538.56	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	323538.56	1250.00	HFPO-DA	N/A	0.024	
ADONA_1	377.0 / 251.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	471851.09	1222.50	ADONA			
ADONA_2	377.0 / 85.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	471851.09	1222.50	ADONA	N/A	0.015	✓
9CI-PF3ONS_1	531.0 / 351.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	471851.09	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	471851.09	1222.50	9CI-PF3ONS	N/A	0.011	✓
11CI-pf3OUdS_1	631.0 / 451.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	471851.09	1222.50	11CI-PF3OUdS			
11CI-pf3OUdS_2	631.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	471851.09	1222.50	11CI-PF3OUdS	N/A	0.005	✓

Sample Name	G1773-FS1-D(3)	Injection Vial	5
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:52:54 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	N/A	N/A	N/A	True	13C3-PFBS	252500.20	1162.50	PFBS			
PFBS_2	298.9 / 99.0	N/A	N/A	N/A	N/A	True	13C3-PFBS	252500.20	1162.50	PFBS	N/A	0.326	✓
PFHxA_1	313.0 / 269.0	1.57	25611108.59	34441.56	800.5	False	13C5-PFHxA	807050.81	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.57	1509046.71	31161.41	823.7	False	13C5-PFHxA	807050.81	1250.00	PFHxA	0.059	0.062	✓
PFHpA_1	363.0 / 319.0	1.90	11301666.34	20859.54	578.8	False	13C4-PFHpA	742989.31	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	1.90	397076.39	21494.42	1024.4	False	13C4-PFHpA	742989.31	1250.00	PFHpA	0.035	0.032	✓
PFHxS_1	399.0 / 80.0	1.91	59746467.42	139646.15	2536.7	False	13C3-PFHxS	152799.49	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	1.91	19643800.76	125995.92	2563.5	False	13C3-PFHxS	152799.49	1182.50	PFHxS	0.329	0.368	✓
PFOA_1	413.0 / 369.0	2.26	47817192.92	52835.31	1198.9	False	13C8-PFOA	1228114.06	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.26	4756677.86	47963.38	1893.8	True	13C8-PFOA	1228114.06	1222.50	PFOA	0.099	0.103	✓
PFNA_1	463.0 / 419.0	2.63	18899138.00	29852.93	1167.8	False	13C9-PFNA	869975.06	1250.00	PFNA			
PFNA_2	463.0 / 219.0	2.63	6545349.16	30123.32	1588.7	False	13C9-PFNA	869975.06	1250.00	PFNA	0.346	0.336	✓
PFOS_1	499.0 / 80.0	2.58	99764718.56	241695.58	2830.2	False	13C8-PFOS	133183.11	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.62	19370090.41	234803.05	4988.1	False	13C8-PFOS	133183.11	1195.00	PFOS	0.194	0.204	✓
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	1346457.46	1250.00	PFDA			
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	1346457.46	1250.00	PFDA	N/A	0.059	✓
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	1211818.54	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	1211818.54	1250.00	PFUnA	N/A	0.062	✓
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	1460446.93	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	1460446.93	1250.00	PFDoA	N/A	0.118	✓
PFTTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1353964.21	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1353964.21	1250.00	PFTTrDA	N/A	0.072	✓
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1353964.21	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1353964.21	1250.00	PFTeDA	N/A	0.057	✓
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	184927.32	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	184927.32	1250.00	NMeFOSAA	N/A	1.071	✓
NEiFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	True	d5-EiFOSAA	170227.97	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	True	d5-EiFOSAA	170227.97	1250.00	NEiFOSAA	N/A	0.053	✓
HFPO-DA_1	285.0 / 169.0	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	448556.50	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	448556.50	1250.00	HFPO-DA	N/A	0.024	✓
ADONA_1	377.0 / 251.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1228114.06	1222.50	ADONA			
ADONA_2	377.0 / 85.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1228114.06	1222.50	ADONA	N/A	0.015	✓
9CI-PF3ONS_1	531.0 / 351.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1228114.06	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1228114.06	1222.50	9CI-PF3ONS	N/A	0.011	✓
11Cl-pf3OUdS_1	631.0 / 451.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1228114.06	1222.50	11Cl-pf3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1228114.06	1222.50	11Cl-pf3OUdS	N/A	0.005	✓

Sample Name	G1773-FS1-D(5)	Injection Vial	6
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:03:23 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	N/A	N/A	N/A	True	13C3-PFBS	291938.10	1162.50	PFBS			
PFBS_2	298.9 / 99.0	N/A	N/A	N/A	N/A	True	13C3-PFBS	291938.10	1162.50	PFBS	N/A	0.326	✓
PFHxA_1	313.0 / 269.0	1.57	14543534.31	13762.77	813.0	False	13C5-PFHxA	1142011.92	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.58	814515.39	11854.70	974.1	False	13C5-PFHxA	1142011.92	1250.00	PFHxA	0.056	0.062	✓
PFHpA_1	363.0 / 319.0	N/A	N/A	N/A	N/A	True	13C4-PFHpA	1068699.38	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	N/A	N/A	N/A	True	13C4-PFHpA	1068699.38	1250.00	PFHpA	N/A	0.032	✓
PFHxS_1	399.0 / 80.0	1.91	31027114.10	50616.28	2778.3	False	13C3-PFHxS	218858.30	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	1.91	10208812.08	45695.41	3220.3	False	13C3-PFHxS	218858.30	1182.50	PFHxS	0.329	0.368	✓
PFOA_1	413.0 / 369.0	2.26	23125236.41	19896.29	1071.7	False	13C8-PFOA	1575099.54	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.25	2385913.32	18762.48	1587.9	True	13C8-PFOA	1575099.54	1222.50	PFOA	0.103	0.103	✓
PFNA_1	463.0 / 419.0	N/A	N/A	N/A	N/A	True	13C9-PFNA	1222435.56	1250.00	PFNA			
PFNA_2	463.0 / 219.0	N/A	N/A	N/A	N/A	True	13C9-PFNA	1222435.56	1250.00	PFNA	N/A	0.336	✓
PFOS_1	499.0 / 80.0	2.61	50577312.26	85266.07	2918.1	False	13C8-PFOS	191371.46	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.62	9884735.75	83370.66	3032.6	False	13C8-PFOS	191371.46	1195.00	PFOS	0.195	0.204	✓
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	1453412.91	1250.00	PFDA			
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	1453412.91	1250.00	PFDA	N/A	0.059	✓
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	1218497.31	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	1218497.31	1250.00	PFUnA	N/A	0.062	✓
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	1557264.51	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	1557264.51	1250.00	PFDoA	N/A	0.118	✓
PFTTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1379106.10	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1379106.10	1250.00	PFTTrDA	N/A	0.072	✓
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1379106.10	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1379106.10	1250.00	PFTeDA	N/A	0.057	✓
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	198855.72	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	198855.72	1250.00	NMeFOSAA	N/A	1.071	✓
NEiFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	True	d5-EiFOSAA	197871.60	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	True	d5-EiFOSAA	197871.60	1250.00	NEiFOSAA	N/A	0.053	✓
HFPO-DA_1	285.0 / 169.0	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	436503.79	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	436503.79	1250.00	HFPO-DA	N/A	0.024	✓
ADONA_1	377.0 / 251.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1575099.54	1222.50	ADONA			
ADONA_2	377.0 / 85.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1575099.54	1222.50	ADONA	N/A	0.015	✓
9CI-PF3ONS_1	531.0 / 351.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1575099.54	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1575099.54	1222.50	9CI-PF3ONS	N/A	0.011	✓
11Cl-pf3OUdS_1	631.0 / 451.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1575099.54	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1575099.54	1222.50	11Cl-PF3OUdS	N/A	0.005	✓

Sample Name	G1773-FS1-D(7)	Injection Vial	7
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:13:52 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	N/A	N/A	N/A	True	13C3-PFBS	304838.46	1162.50	PFBS			
PFBS_2	298.9 / 99.0	N/A	N/A	N/A	N/A	True	13C3-PFBS	304838.46	1162.50	PFBS	N/A	0.326	✓
PFHxA_1	313.0 / 269.0	N/A	N/A	N/A	N/A	True	13C5-PFHxA	1406153.70	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	N/A	N/A	N/A	True	13C5-PFHxA	1406153.70	1250.00	PFHxA	N/A	0.062	✓
PFHpA_1	363.0 / 319.0	N/A	N/A	N/A	N/A	True	13C4-PFHpA	1269211.86	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	N/A	N/A	N/A	True	13C4-PFHpA	1269211.86	1250.00	PFHpA	N/A	0.032	✓
PFHxS_1	399.0 / 80.0	1.92	14576328.90	20385.53	2570.7	False	13C3-PFHxS	255119.33	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	1.92	5141452.97	19724.48	3544.4	False	13C3-PFHxS	255119.33	1182.50	PFHxS	0.353	0.368	✓
PFOA_1	413.0 / 369.0	2.26	11103517.70	8698.44	1016.4	False	13C8-PFOA	1725074.48	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.26	1129394.33	8113.25	1026.6	True	13C8-PFOA	1725074.48	1222.50	PFOA	0.102	0.103	✓
PFNA_1	463.0 / 419.0	N/A	N/A	N/A	N/A	True	13C9-PFNA	1495003.57	1250.00	PFNA			
PFNA_2	463.0 / 219.0	N/A	N/A	N/A	N/A	True	13C9-PFNA	1495003.57	1250.00	PFNA	N/A	0.336	✓
PFOS_1	499.0 / 80.0	2.61	23118615.79	32967.97	2295.5	False	13C8-PFOS	226183.76	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.62	4527138.63	32288.85	2787.6	False	13C8-PFOS	226183.76	1195.00	PFOS	0.196	0.204	✓
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	1446900.45	1250.00	PFDA			
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	1446900.45	1250.00	PFDA	N/A	0.059	✓
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	1396568.27	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	1396568.27	1250.00	PFUnA	N/A	0.062	✓
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	1589273.90	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	1589273.90	1250.00	PFDoA	N/A	0.118	✓
PFTeDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1484070.65	1250.00	PFTeDA			
PFTeDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1484070.65	1250.00	PFTeDA	N/A	0.072	✓
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1484070.65	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1484070.65	1250.00	PFTeDA	N/A	0.057	✓
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	193057.43	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	193057.43	1250.00	NMeFOSAA	N/A	1.071	✓
NEiFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	True	d5-EiFOSAA	201742.37	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	True	d5-EiFOSAA	201742.37	1250.00	NEiFOSAA	N/A	0.053	✓
HFPO-DA_1	285.0 / 169.0	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	441223.10	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	441223.10	1250.00	HFPO-DA	N/A	0.024	✓
ADONA_1	377.0 / 251.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1725074.48	1222.50	ADONA			
ADONA_2	377.0 / 85.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1725074.48	1222.50	ADONA	N/A	0.015	✓
9CI-PF3ONS_1	531.0 / 351.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1725074.48	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1725074.48	1222.50	9CI-PF3ONS	N/A	0.011	✓
11Cl-pf3OUdS_1	631.0 / 451.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1725074.48	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1725074.48	1222.50	11Cl-PF3OUdS	N/A	0.005	✓

Sample Name	G1773-FS1-D(9)	Injection Vial	8
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:24:21 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
PFBS_1	298.9 / 80.0	N/A	N/A	N/A	N/A	True	13C3-PFBS	309541.96	1162.50	PFBS			
PFBS_2	298.9 / 99.0	N/A	N/A	N/A	N/A	True	13C3-PFBS	309541.96	1162.50	PFBS	N/A	0.326	✓
PFHxA_1	313.0 / 269.0	N/A	N/A	N/A	N/A	True	13C5-PFHxA	1485999.53	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	N/A	N/A	N/A	True	13C5-PFHxA	1485999.53	1250.00	PFHxA	N/A	0.062	✓
PFHpA_1	363.0 / 319.0	N/A	N/A	N/A	N/A	True	13C4-PFHpA	1556408.80	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	N/A	N/A	N/A	True	13C4-PFHpA	1556408.80	1250.00	PFHpA	N/A	0.032	✓
PFHxS_1	399.0 / 80.0	1.91	3132897.73	3986.56	2591.9	False	13C3-PFHxS	279088.33	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	1.91	1085541.61	3781.22	2506.5	False	13C3-PFHxS	279088.33	1182.50	PFHxS	0.346	0.368	✓
PFOA_1	413.0 / 369.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1944827.75	1222.50	PFOA			
PFOA_2	413.0 / 169.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1944827.75	1222.50	PFOA	N/A	0.103	✓
PFNA_1	463.0 / 419.0	N/A	N/A	N/A	N/A	True	13C9-PFNA	1769232.42	1250.00	PFNA			
PFNA_2	463.0 / 219.0	N/A	N/A	N/A	N/A	True	13C9-PFNA	1769232.42	1250.00	PFNA	N/A	0.336	✓
PFOS_1	499.0 / 80.0	2.61	5167390.19	6532.78	2080.1	False	13C8-PFOS	254722.19	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.62	998583.35	6301.27	1642.8	False	13C8-PFOS	254722.19	1195.00	PFOS	0.193	0.204	✓
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	1607406.03	1250.00	PFDA			
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	1607406.03	1250.00	PFDA	N/A	0.059	✓
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	1499184.73	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	1499184.73	1250.00	PFUnA	N/A	0.062	✓
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	1737896.91	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	1737896.91	1250.00	PFDoA	N/A	0.118	✓
PFTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1499337.78	1250.00	PFTrDA			
PFTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1499337.78	1250.00	PFTrDA	N/A	0.072	✓
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1499337.78	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1499337.78	1250.00	PFTeDA	N/A	0.057	✓
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	221684.51	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	221684.51	1250.00	NMeFOSAA	N/A	1.071	✓
NEiFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	True	d5-EiFOSAA	213047.27	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	True	d5-EiFOSAA	213047.27	1250.00	NEiFOSAA	N/A	0.053	✓
HFPO-DA_1	285.0 / 169.0	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	474458.23	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	474458.23	1250.00	HFPO-DA	N/A	0.024	✓
ADONA_1	377.0 / 251.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1944827.75	1222.50	ADONA			
ADONA_2	377.0 / 85.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1944827.75	1222.50	ADONA	N/A	0.015	✓
9CI-PF3ONS_1	531.0 / 351.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1944827.75	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1944827.75	1222.50	9CI-PF3ONS	N/A	0.011	✓
11Cl-pf3OUdS_1	631.0 / 451.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1944827.75	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	1944827.75	1222.50	11Cl-PF3OUdS	N/A	0.005	✓

Sample Name	LE58 IB	Injection Vial	8
Sample ID	Instrument Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 9:10:14 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481 SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.59	1434637.03	1194.14	4476.2	False	13C2-PFDA	1160218.53	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.12	188258.20	1065.62	1342.0	False	13C4-PFOS	204214.87	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.28	169601.10	1146.65	1014.1	False	13C4-PFOS	204214.87	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.57	1277755.94	1306.06	5393.1	False	13C2-PFOA	732732.71	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.90	1321266.49	1422.52	19235.1	False	13C2-PFOA	732732.71	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.25	1386690.80	1196.16	107390786.0	False	13C2-PFOA	732732.71	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.62	1470033.48	1312.98	4911.1	False	13C2-PFOA	732732.71	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.97	1467460.01	1315.95	5374.4	False	13C2-PFDA	1160218.53	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.29	1248892.92	1214.70	3885.5	False	13C2-PFDA	1160218.53	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.07	1446418.53	1230.55	4145.9	False	13C2-PFDA	1160218.53	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.32	267877.53	1016.31	9956.3	False	13C4-PFOS	204214.87	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.91	240039.93	1111.33	8654.8	False	13C4-PFOS	204214.87	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.62	218728.00	1086.43	1518.7	False	13C4-PFOS	204214.87	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.66	428342.24	1291.93	5042.5	False	13C2-PFOA	732732.71	1250.00		N/A	N/A	✓



Sample Name	DB386PB-FS(0)	Injection Vial	2
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:21:28 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.59	1652829.00	1136.57	5287.9	False	13C2-PFDA	1404380.51	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.13	225579.30	1065.19	2940.2	False	13C4-PFOS	244796.33	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.29	211290.90	1191.70	1575.8	False	13C4-PFOS	244796.33	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.57	1436478.33	963.95	4635.1	False	13C2-PFOA	1116106.08	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.89	1400081.78	989.60	7293.3	False	13C2-PFOA	1116106.08	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.26	1902315.21	1077.29	16832.1	False	13C2-PFOA	1116106.08	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.63	1756598.74	1030.01	84353.6	False	13C2-PFOA	1116106.08	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.98	1406842.26	1042.25	4109.9	False	13C2-PFDA	1404380.51	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.30	1338344.73	1075.39	3855.8	False	13C2-PFDA	1404380.51	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.06	1507697.62	1059.68	4122.8	False	13C2-PFDA	1404380.51	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.32	290965.17	920.91	5511.2	False	13C4-PFOS	244796.33	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.91	276959.50	1069.69	721388.2	False	13C4-PFOS	244796.33	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.62	238708.05	989.12	2022.8	False	13C4-PFOS	244796.33	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.66	428289.17	848.06	6478.0	False	13C2-PFOA	1116106.08	1250.00		N/A	N/A	✓



Sample Name	DB387LCS-FS(0)	Injection Vial	3
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:31:57 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.58	1522808.22	1208.87	4926.8	False	13C2-PFDA	1216522.46	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.11	198752.46	983.29	1341.2	False	13C4-PFOS	233648.59	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.27	186850.56	1104.13	1522.6	False	13C4-PFOS	233648.59	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.57	1300168.20	894.07	7634.0	False	13C2-PFOA	1089154.16	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.89	1349099.08	977.16	2712.3	False	13C2-PFOA	1089154.16	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.25	1710461.25	992.61	10915.3	False	13C2-PFOA	1089154.16	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.61	1515863.58	910.85	6403.5	False	13C2-PFOA	1089154.16	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.97	1386960.56	1186.19	4843.0	False	13C2-PFDA	1216522.46	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.29	1289138.49	1195.81	3003.3	False	13C2-PFDA	1216522.46	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.06	1353591.75	1098.28	3910.6	False	13C2-PFDA	1216522.46	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.32	322566.09	1069.63	22484.8	False	13C4-PFOS	233648.59	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.90	244090.51	987.72	4652.8	False	13C4-PFOS	233648.59	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.61	251496.07	1091.83	2675.3	False	13C4-PFOS	233648.59	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.66	469220.10	952.10	3394.5	False	13C2-PFOA	1089154.16	1250.00		N/A	N/A	✓



Sample Name	G1773-FS1(0)	Injection Vial	4
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:42:26 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.58	1162409.37	1014.99	3431.6	False	13C2-PFDA	1105993.29	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.11	140487.13	2854.87	1040.6	False	13C4-PFOS	56883.34	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.28	148919.12	3614.56	987.2	False	13C4-PFOS	56883.34	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.56	326192.51	508.06	631.1	False	13C2-PFOA	480861.00	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.89	211842.43	347.54	781.3	False	13C2-PFOA	480861.00	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.25	471851.09	620.21	1001.1	False	13C2-PFOA	480861.00	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.62	307254.74	418.17	1164.4	False	13C2-PFOA	480861.00	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.97	1054919.68	992.38	3247.2	False	13C2-PFDA	1105993.29	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.29	998751.53	1019.03	3085.7	False	13C2-PFDA	1105993.29	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.07	792105.22	706.93	4706.7	False	13C2-PFDA	1105993.29	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.32	135867.25	1850.58	1407.4	False	13C4-PFOS	56883.34	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.90	55912.96	929.34	312.8	False	13C4-PFOS	56883.34	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.61	55065.53	981.93	228.8	False	13C4-PFOS	56883.34	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.66	323538.56	1486.97	1013.0	False	13C2-PFOA	480861.00	1250.00		N/A	N/A	✓



Sample Name	G1773-FS1-D(3)	Injection Vial	5
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:52:54 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481 SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.58	1460446.93	1196.06	4198.7	False	13C2-PFDA	1179199.36	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.12	183526.26	1480.18	1250.6	False	13C4-PFOS	143323.93	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.28	171089.63	1648.14	1061.8	False	13C4-PFOS	143323.93	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.56	807050.81	676.14	1557.1	False	13C2-PFOA	893967.88	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.89	742989.31	655.65	1750.7	False	13C2-PFOA	893967.88	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.25	1228114.06	868.30	2071.7	False	13C2-PFOA	893967.88	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.62	869975.06	636.88	2200.2	False	13C2-PFOA	893967.88	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.97	1346457.46	1188.00	6625.7	False	13C2-PFDA	1179199.36	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.29	1211818.54	1159.67	4050.9	False	13C2-PFDA	1179199.36	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.07	1353964.21	1133.35	4300.3	False	13C2-PFDA	1179199.36	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.32	252500.20	1364.97	2281.2	False	13C4-PFOS	143323.93	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.90	152799.49	1007.98	1198.1	False	13C4-PFOS	143323.93	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.62	133183.11	942.58	665.8	False	13C4-PFOS	143323.93	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.66	448556.50	1108.89	2019.8	False	13C2-PFOA	893967.88	1250.00		N/A	N/A	✓



Sample Name	G1773-FS1-D(5)	Injection Vial	6
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:03:23 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481 SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.59	1557264.51	1271.93	4128.5	False	13C2-PFDA	1182373.14	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.12	197609.20	1146.68	1446.0	False	13C4-PFOS	199204.08	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.29	198313.22	1374.50	1926.5	False	13C4-PFOS	199204.08	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.57	1142011.92	836.10	2050.9	False	13C2-PFOA	1022996.24	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.89	1068699.38	824.13	3128.0	False	13C2-PFOA	1022996.24	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.25	1575099.54	973.17	2578.0	False	13C2-PFOA	1022996.24	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.62	1222435.56	782.04	3585.7	False	13C2-PFOA	1022996.24	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.98	1453412.91	1278.93	4663.3	False	13C2-PFDA	1182373.14	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.30	1218497.31	1162.93	3865.3	False	13C2-PFDA	1182373.14	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.07	1379106.10	1151.30	4079.4	False	13C2-PFDA	1182373.14	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.32	291938.10	1135.46	4269.8	False	13C4-PFOS	199204.08	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.91	218858.30	1038.75	2009.0	False	13C4-PFOS	199204.08	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.62	191371.46	974.46	821.2	False	13C4-PFOS	199204.08	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.66	436503.79	942.99	2365.1	False	13C2-PFOA	1022996.24	1250.00		N/A	N/A	✓



PFAS Sample Quant Report

Created with Analyst Reporter
Printed: 17/11/2020 2:04:57 PM

Sample Name	G1773-FS1-D(7)	Injection Vial	7
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:13:52 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.59	1589273.90	1217.45	4803.2	False	13C2-PFDA	1260669.94	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.12	191995.36	985.72	1057.6	False	13C4-PFOS	225149.79	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.29	201292.44	1234.37	1352.3	False	13C4-PFOS	225149.79	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.57	1406153.70	940.25	2404.7	False	13C2-PFOA	1120073.56	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.89	1269211.86	893.92	3575.0	False	13C2-PFOA	1120073.56	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.25	1725074.48	973.46	3329.2	False	13C2-PFOA	1120073.56	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.62	1495003.57	873.52	6239.0	False	13C2-PFOA	1120073.56	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.97	1446900.45	1194.12	4451.5	False	13C2-PFDA	1260669.94	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.30	1396568.27	1250.10	2586.4	False	13C2-PFDA	1260669.94	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.07	1484070.65	1161.98	4156.8	False	13C2-PFDA	1260669.94	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.32	304838.46	1049.00	9336.9	False	13C4-PFOS	225149.79	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.91	255119.33	1071.32	5493.1	False	13C4-PFOS	225149.79	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.62	226183.76	1019.00	1365.7	False	13C4-PFOS	225149.79	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.66	441223.10	870.58	2543.9	False	13C2-PFOA	1120073.56	1250.00		N/A	N/A	✓



Sample Name	G1773-FS1-D(9)	Injection Vial	8
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:24:21 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS
Sample Comment			

Results Summary

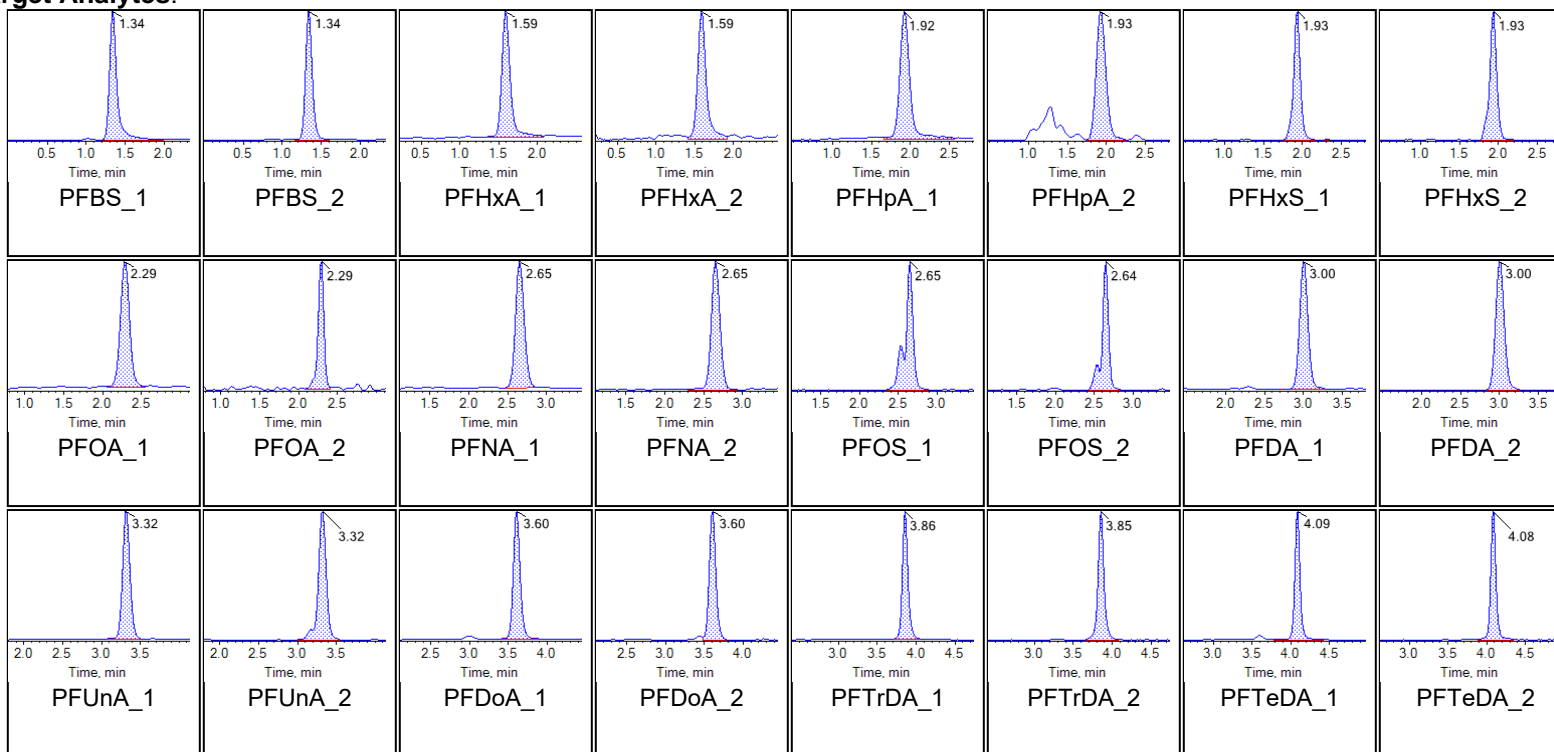
Analyte	MRM Transition	RT	Area	Conc. (ng/L)	S/N Ratio	Modified	IS	IS Area	IS Conc. (ng/L)	Ratio Group	Ion Ratio	Expected Ion Ratio	Ratio OK
13C2-PFDoA	615.0 / 570.0	3.58	1737896.91	1265.94	3149.7	False	13C2-PFDA	1325763.24	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.12	220180.96	1009.46	998.5	False	13C4-PFOS	252129.48	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.28	213481.62	1169.03	1314.1	False	13C4-PFOS	252129.48	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.57	1485999.53	1068.50	4140.2	False	13C2-PFOA	1041603.30	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	1.89	1556408.80	1178.78	5582.5	False	13C2-PFOA	1041603.30	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.25	1944827.75	1180.14	40807.9	False	13C2-PFOA	1041603.30	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	2.62	1769232.42	1111.62	4190.3	False	13C2-PFOA	1041603.30	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	2.97	1607406.03	1261.45	34212.0	False	13C2-PFDA	1325763.24	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.29	1499184.73	1276.07	3647.0	False	13C2-PFDA	1325763.24	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.06	1499337.78	1116.30	3745.7	False	13C2-PFDA	1325763.24	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.32	309541.96	951.21	17747.0	False	13C4-PFOS	252129.48	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	1.91	279088.33	1046.56	18095.9	False	13C4-PFOS	252129.48	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	2.62	254722.19	1024.78	1096.8	False	13C4-PFOS	252129.48	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.66	474458.23	1006.68	4191.1	False	13C2-PFOA	1041603.30	1250.00		N/A	N/A	✓

Chromatograms

Sample Name	LE52	Injection Vial	2
Sample ID	L1	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481

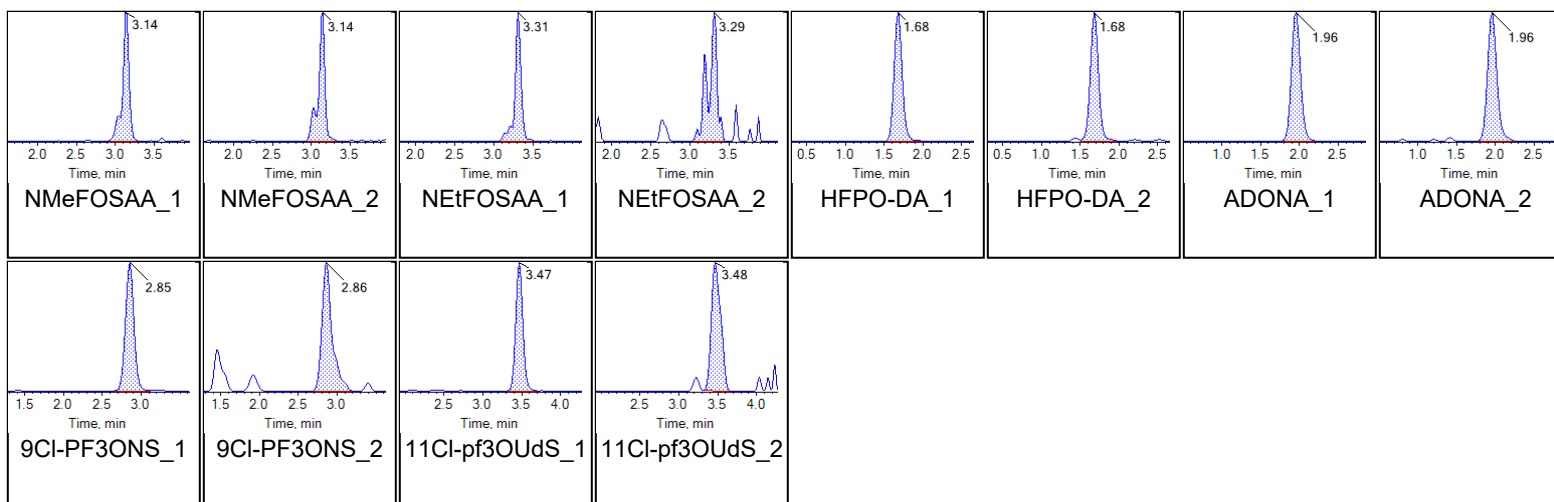
Chromatograms

Target Analytes:

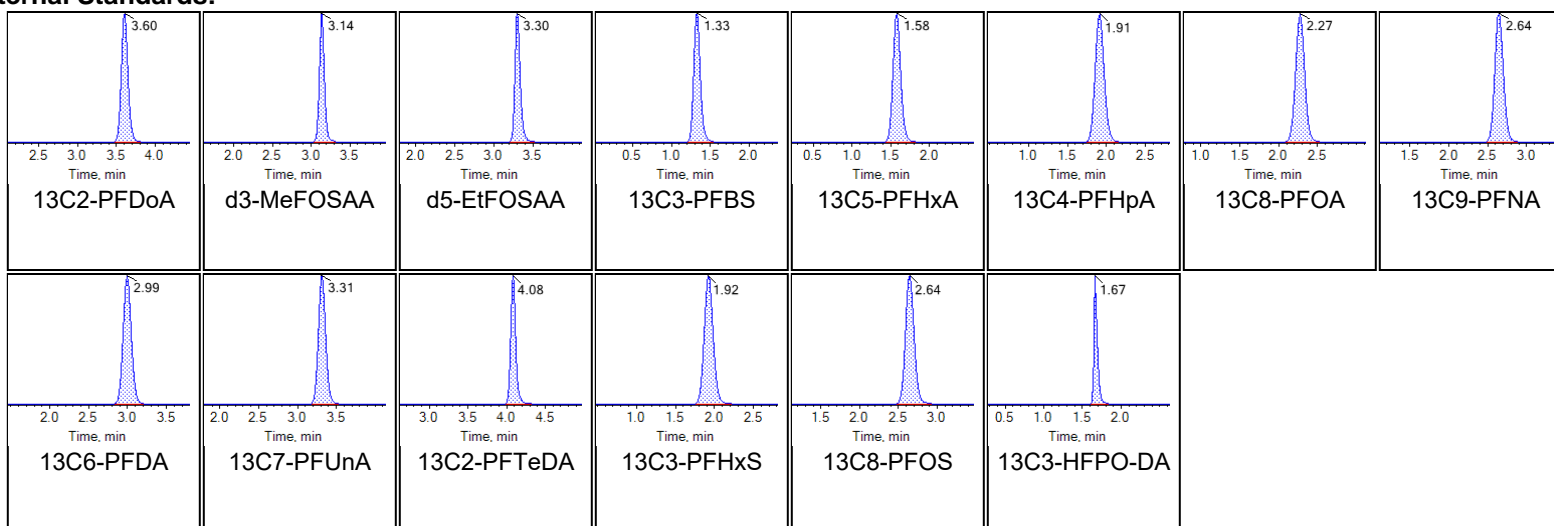




Chromatogram Report

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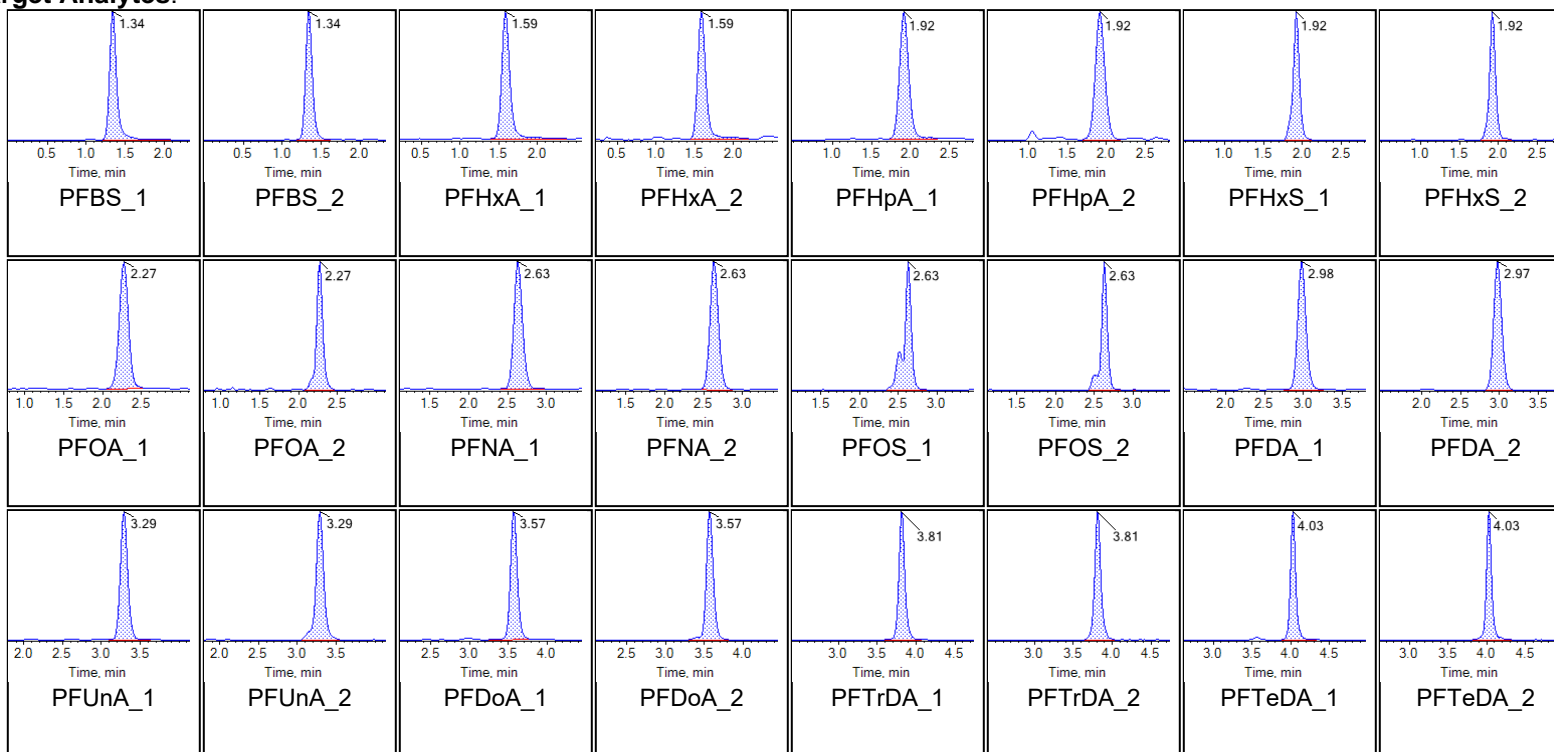
Internal Standards:



Sample Name	LE53	Injection Vial	3
Sample ID	L2	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:17:56 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481

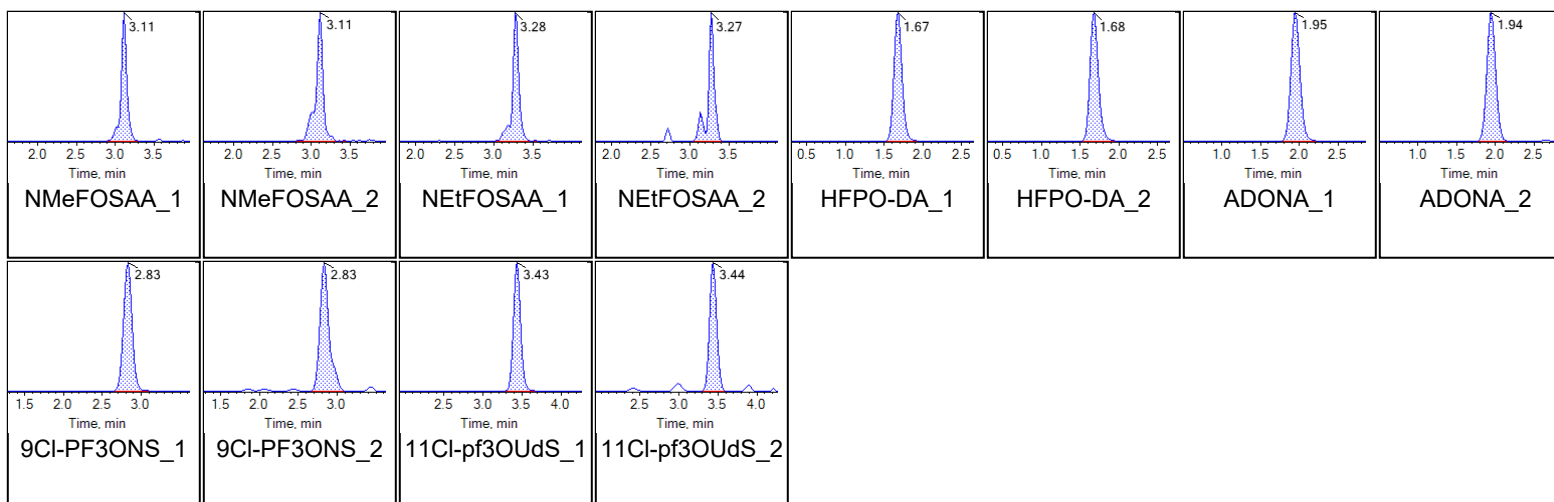
Chromatograms

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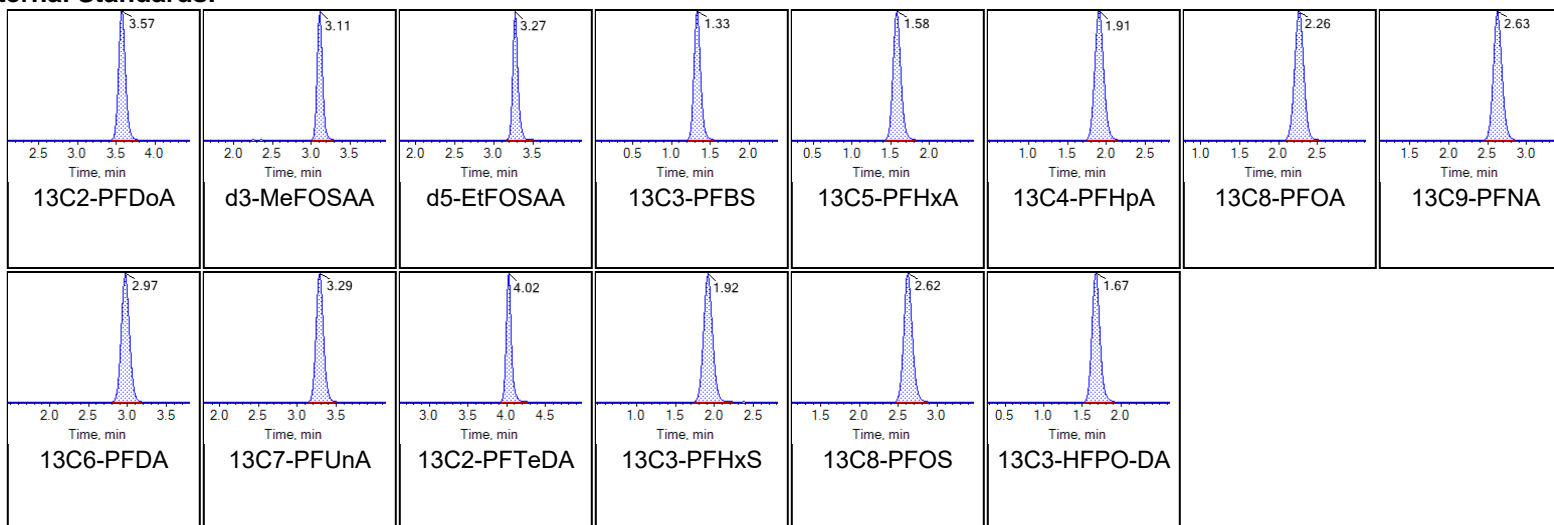




Chromatogram Report

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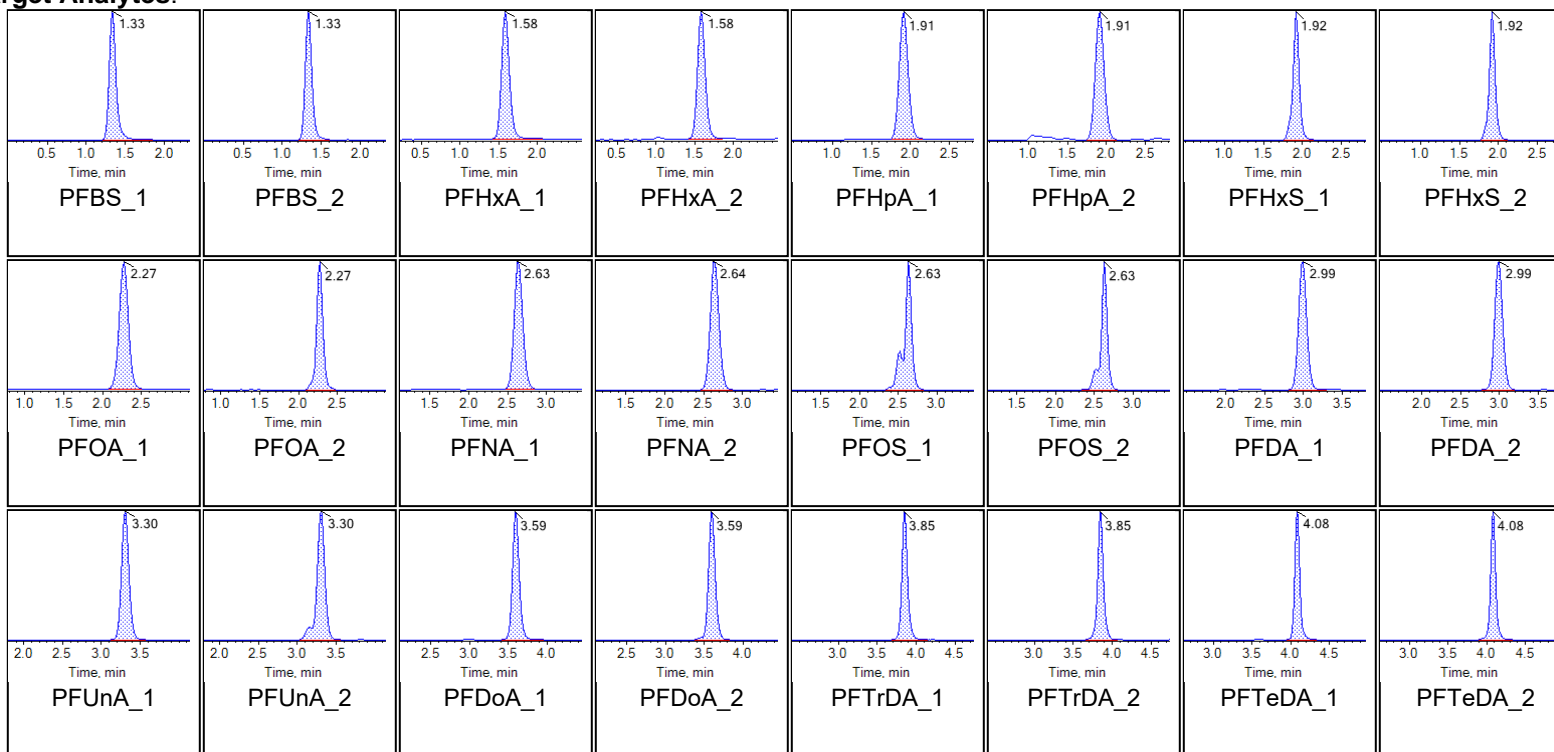
Internal Standards:



Sample Name	LE54	Injection Vial	4
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:28:24 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481

Chromatograms

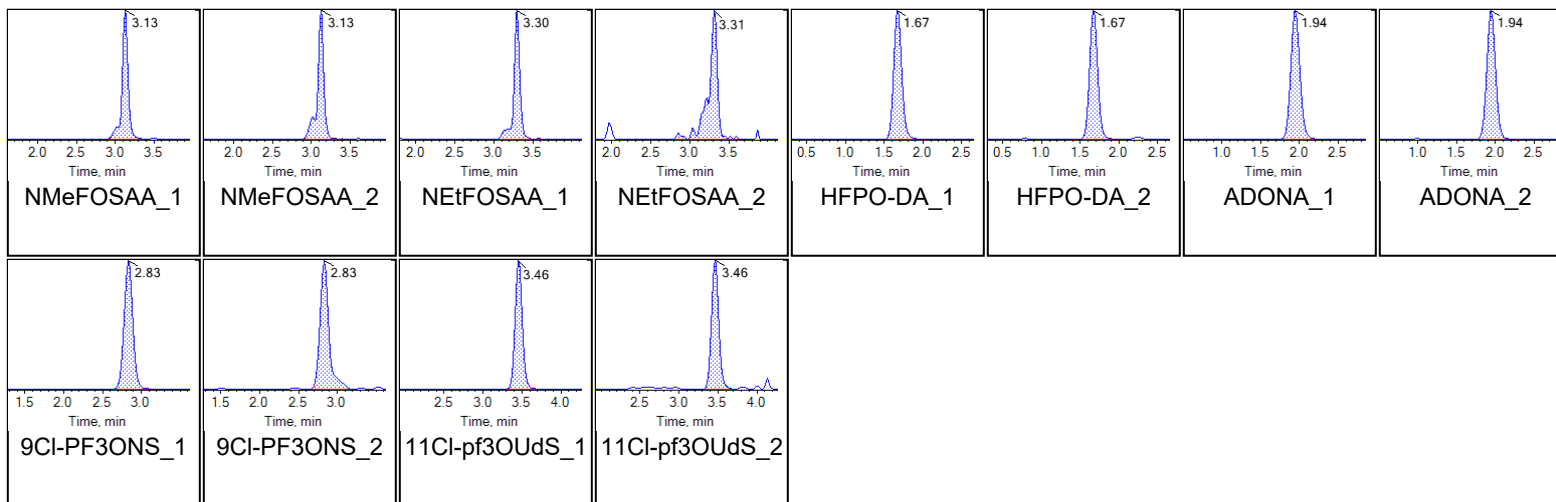
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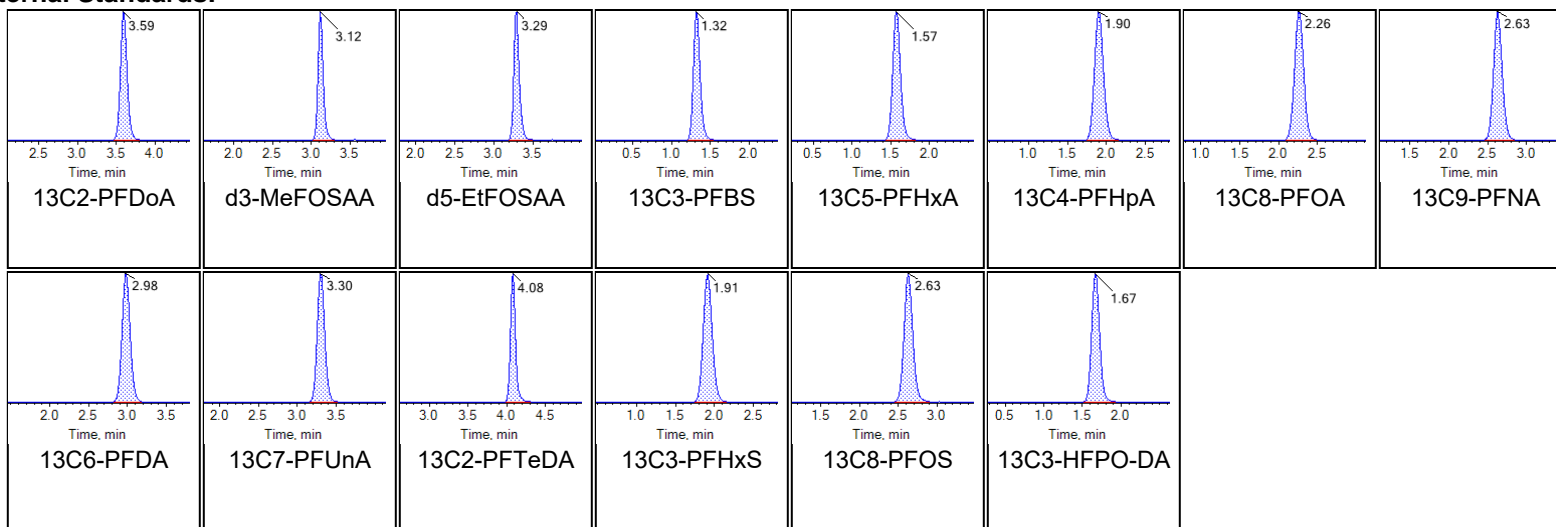


Chromatogram Report

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Internal Standards:





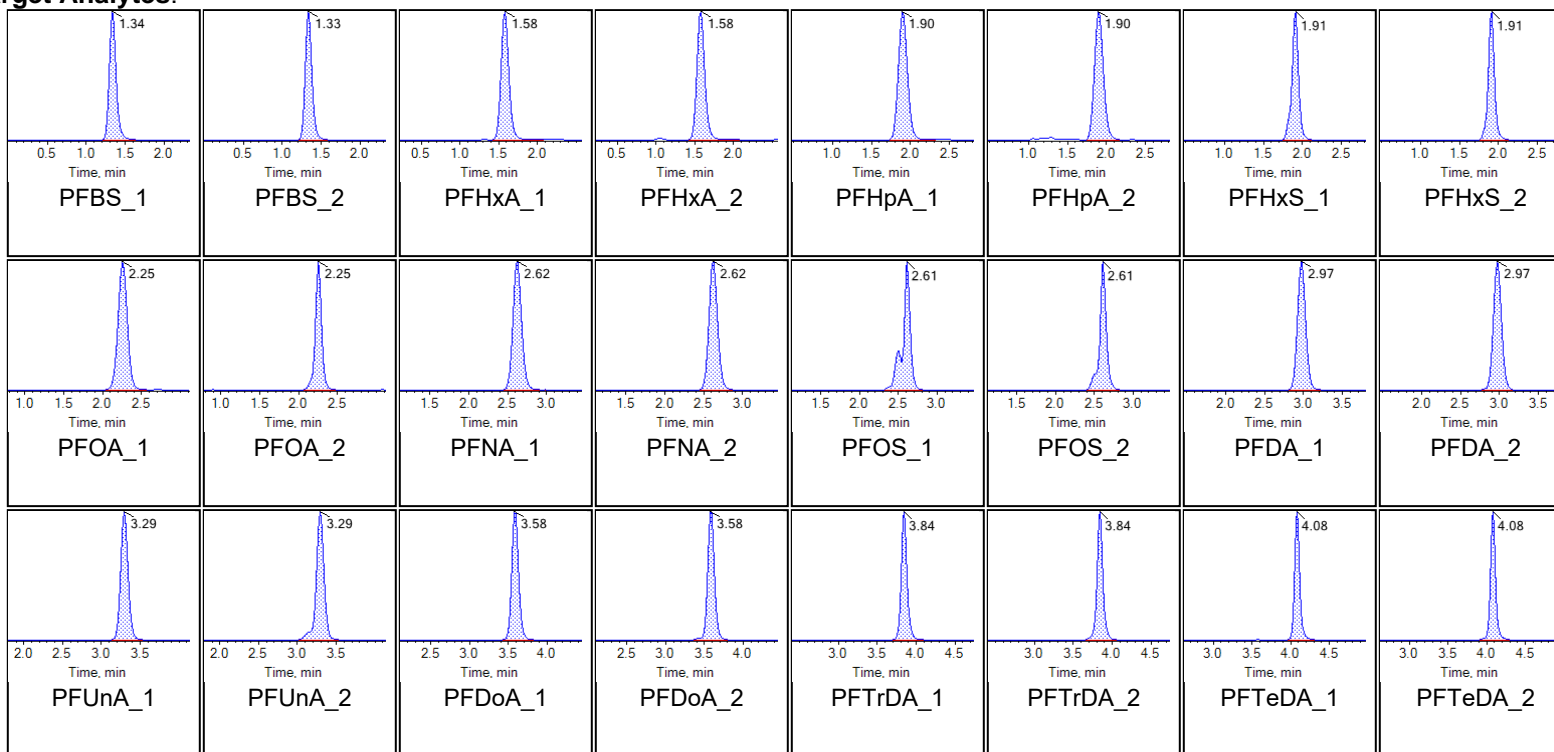
Chromatogram Report

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Printed: 17/11/2020 2:13:50 PM

Sample Name	LE55	Injection Vial	5
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:38:51 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481

Chromatograms

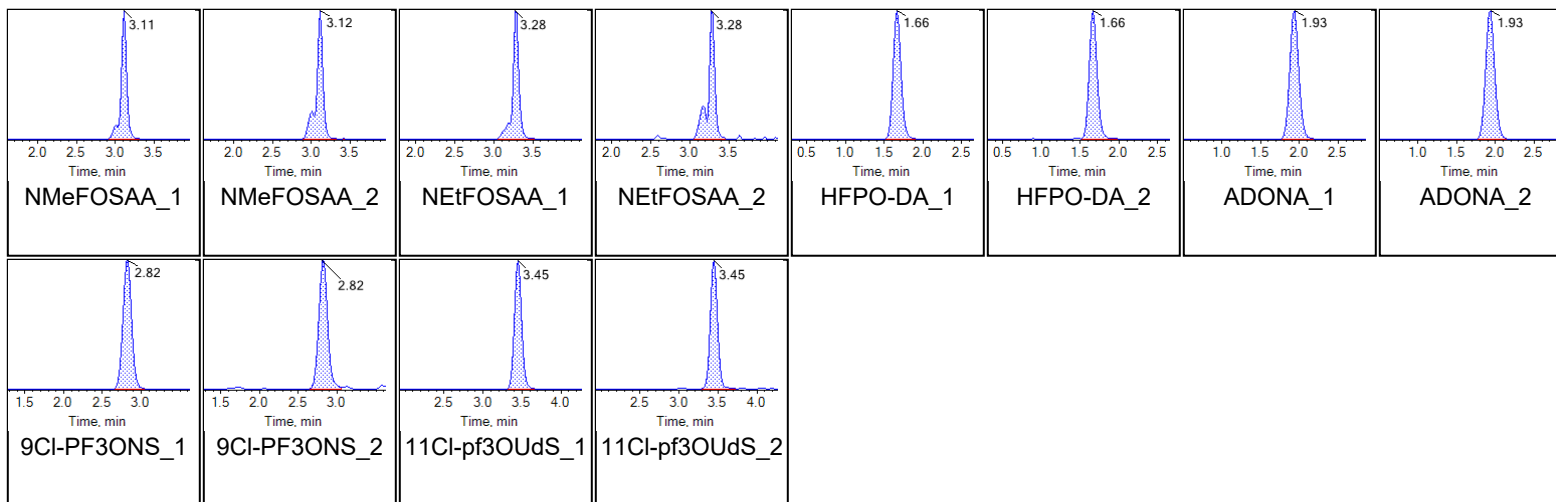
Target Analytes:



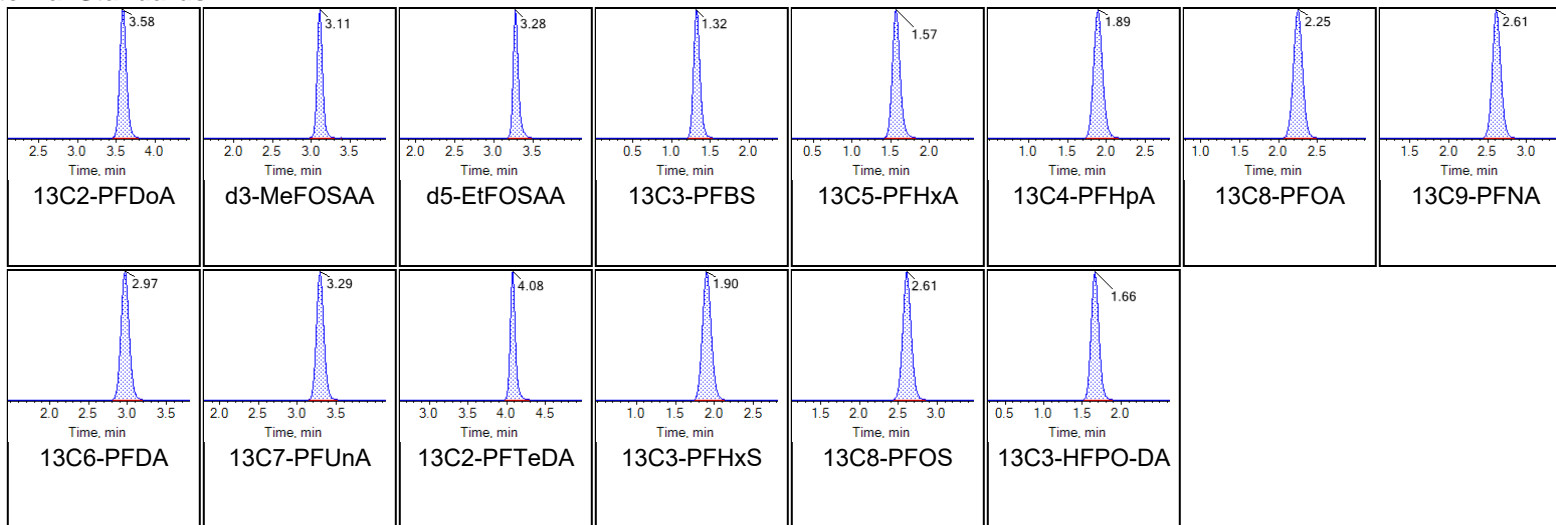


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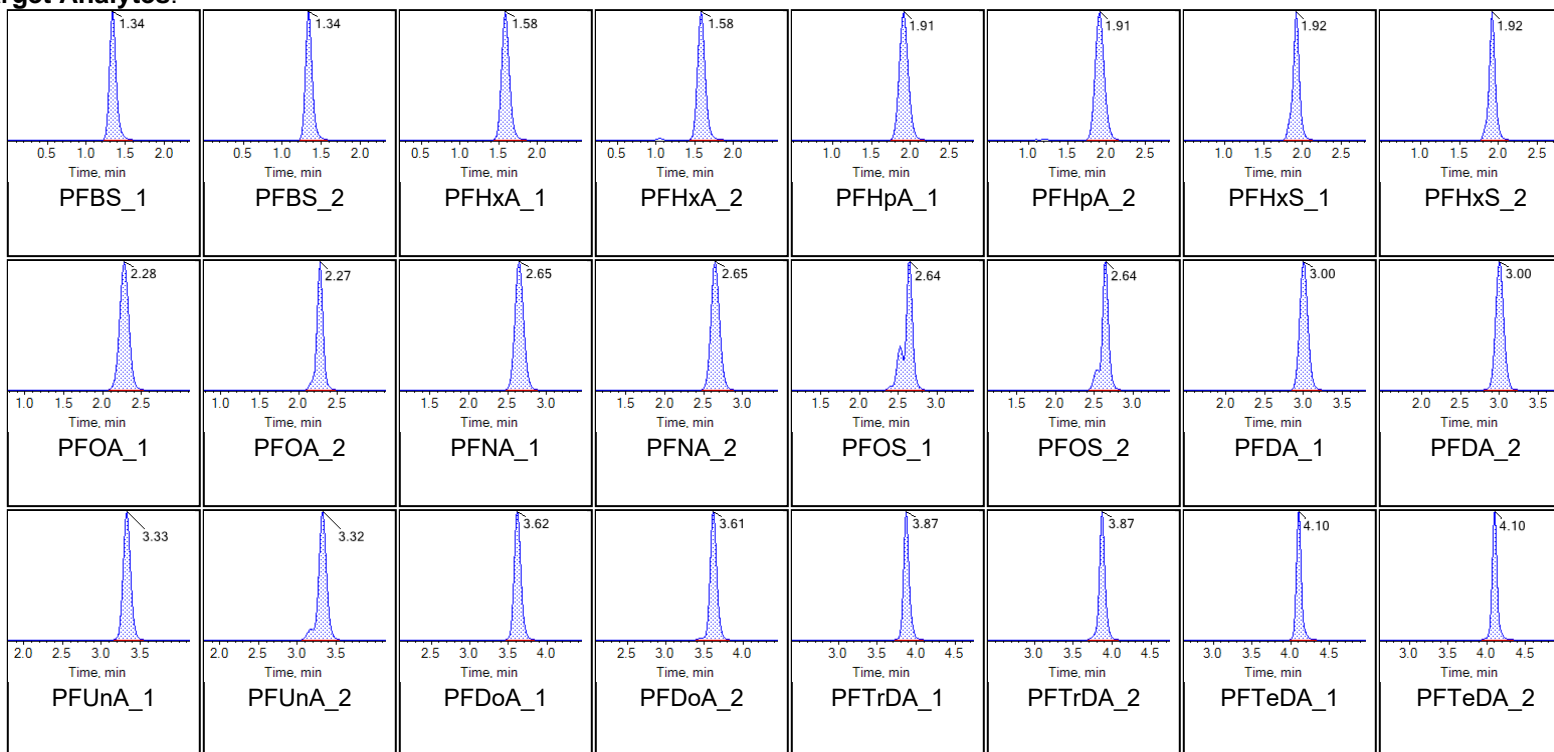
Internal Standards:



Sample Name	LE56	Injection Vial	6
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:49:18 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481

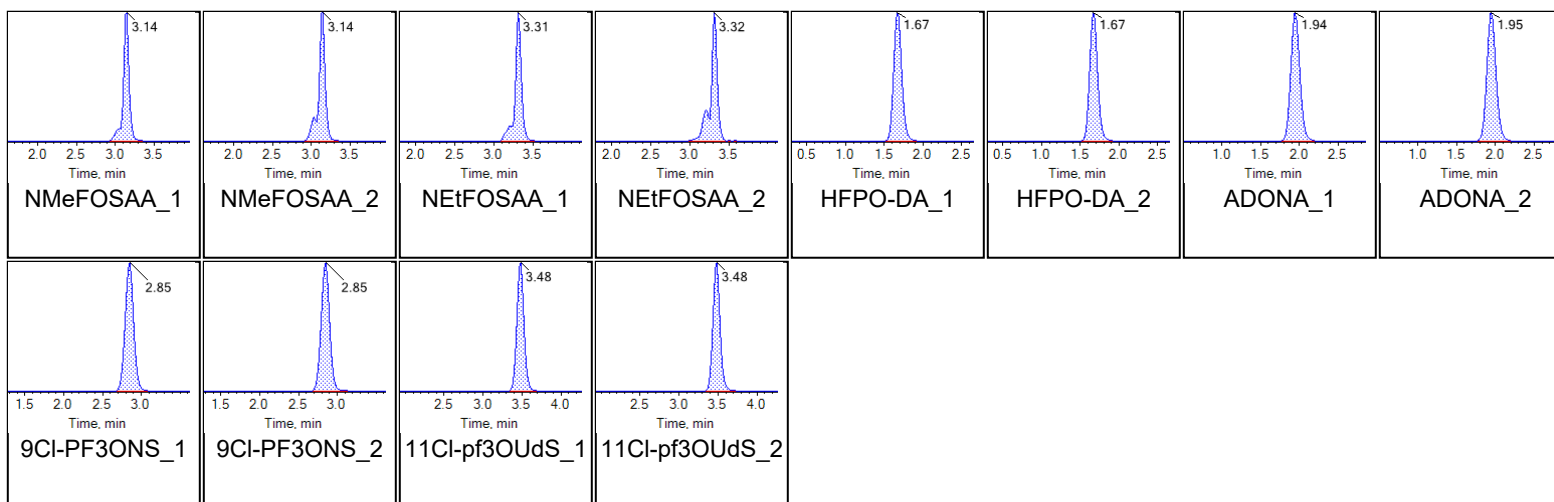
Chromatograms

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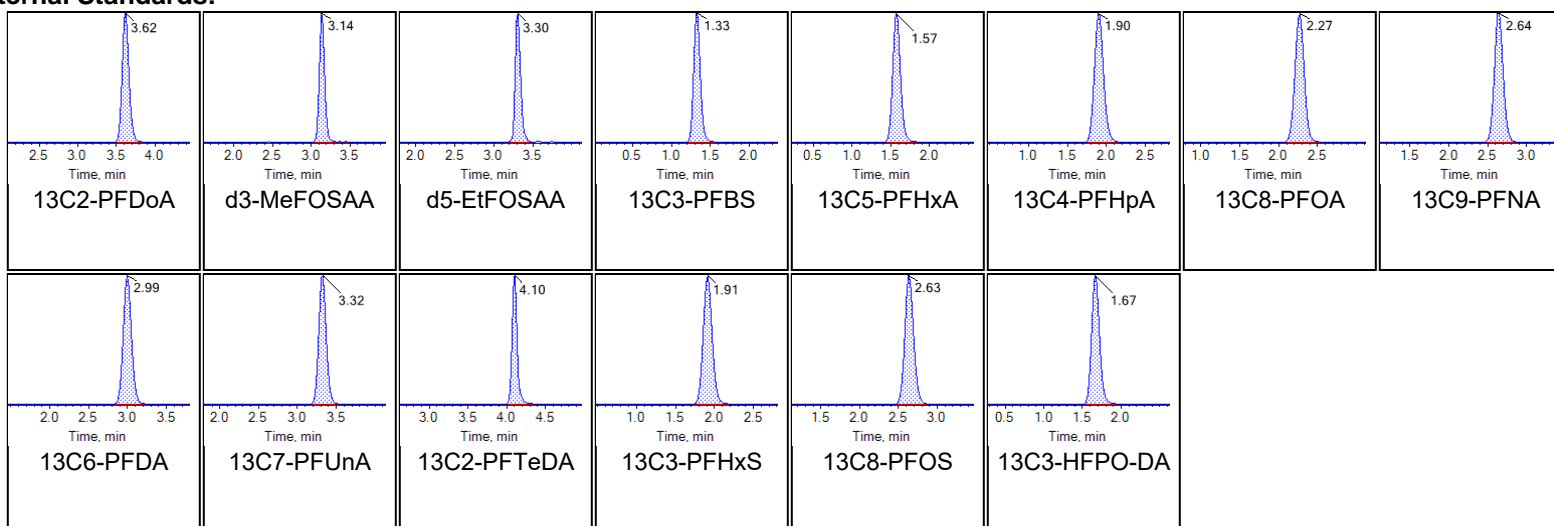




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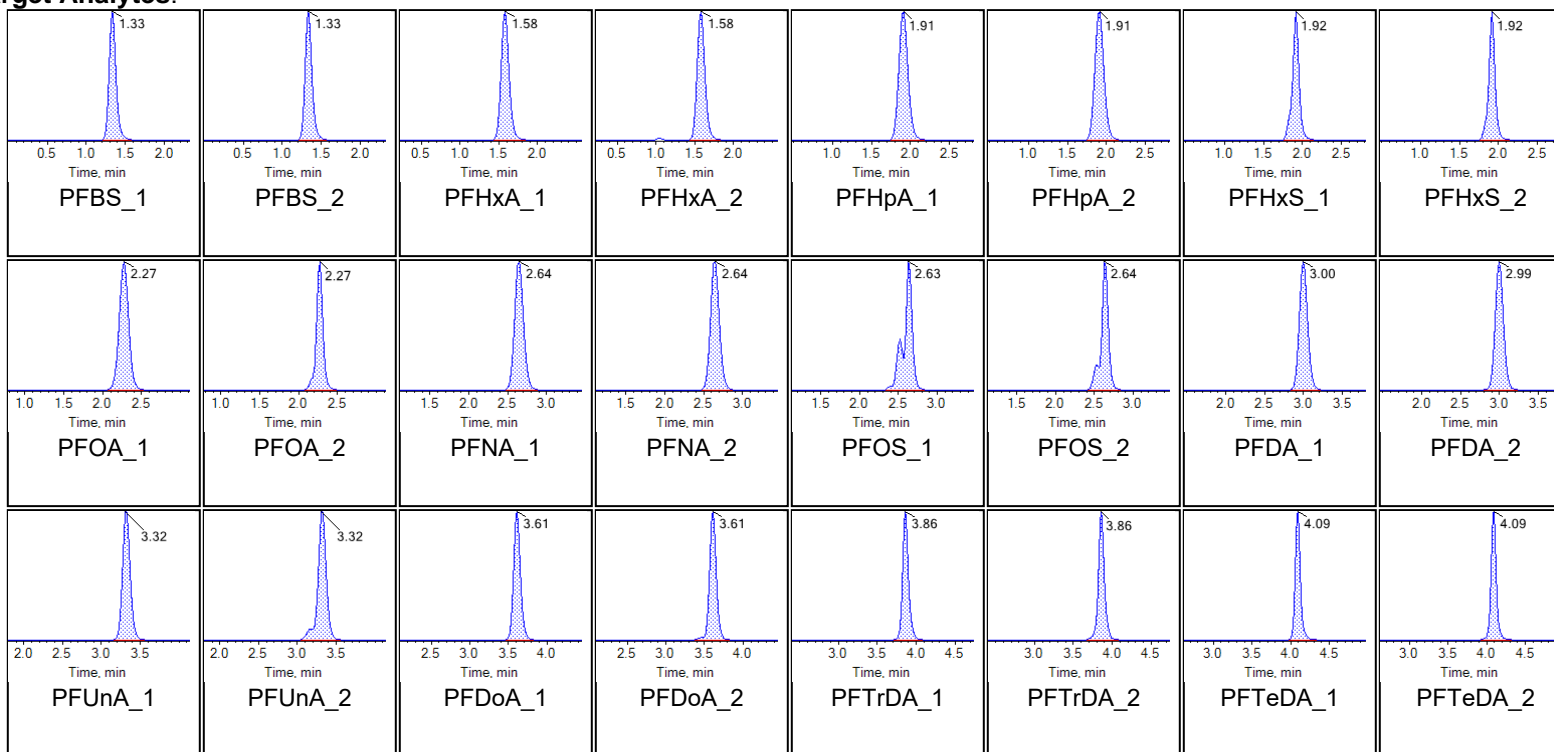
Chromatogram Report

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Sample Name	LE57	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:59:46 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481

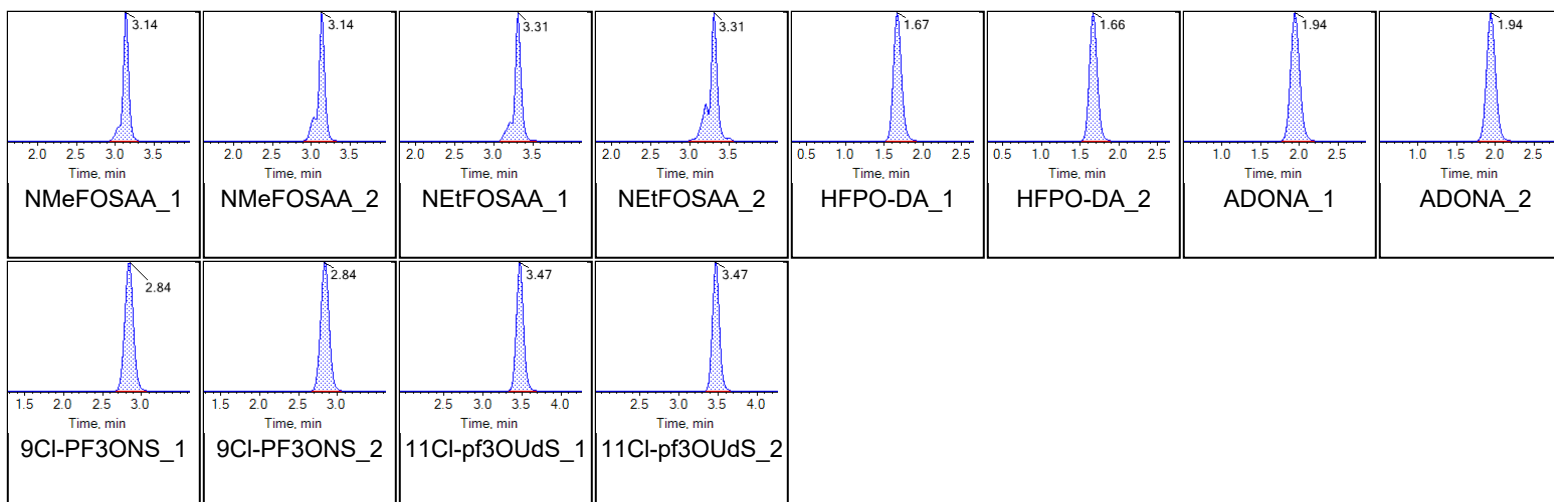
Chromatograms

Target Analytes:

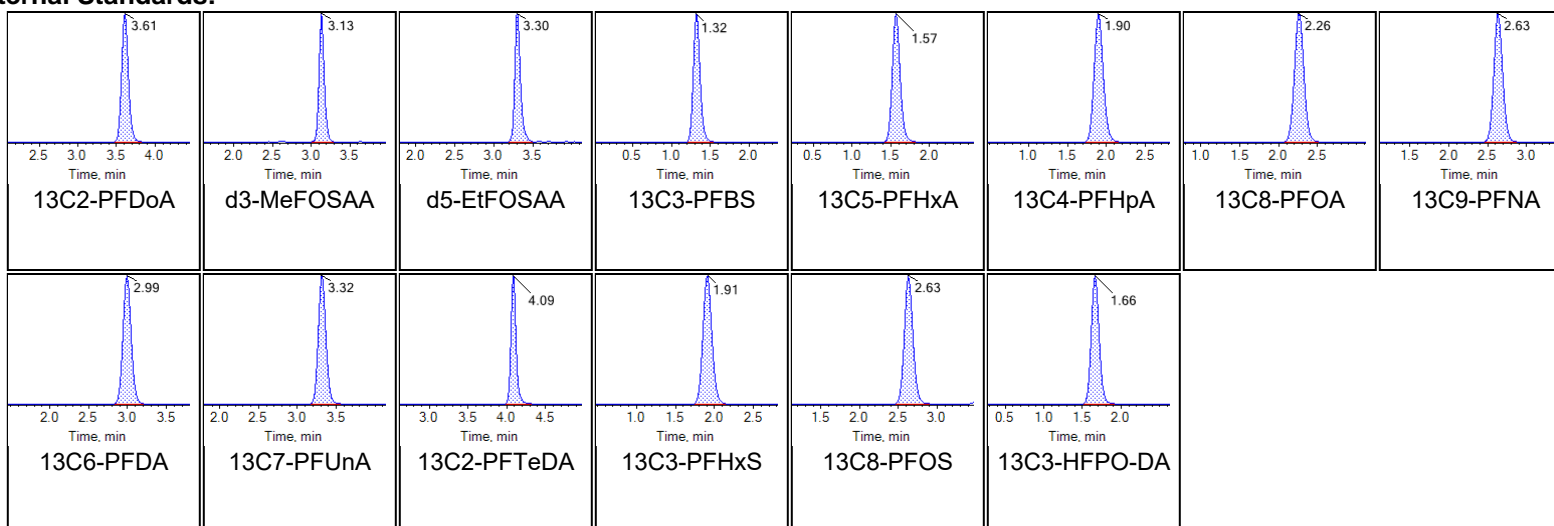




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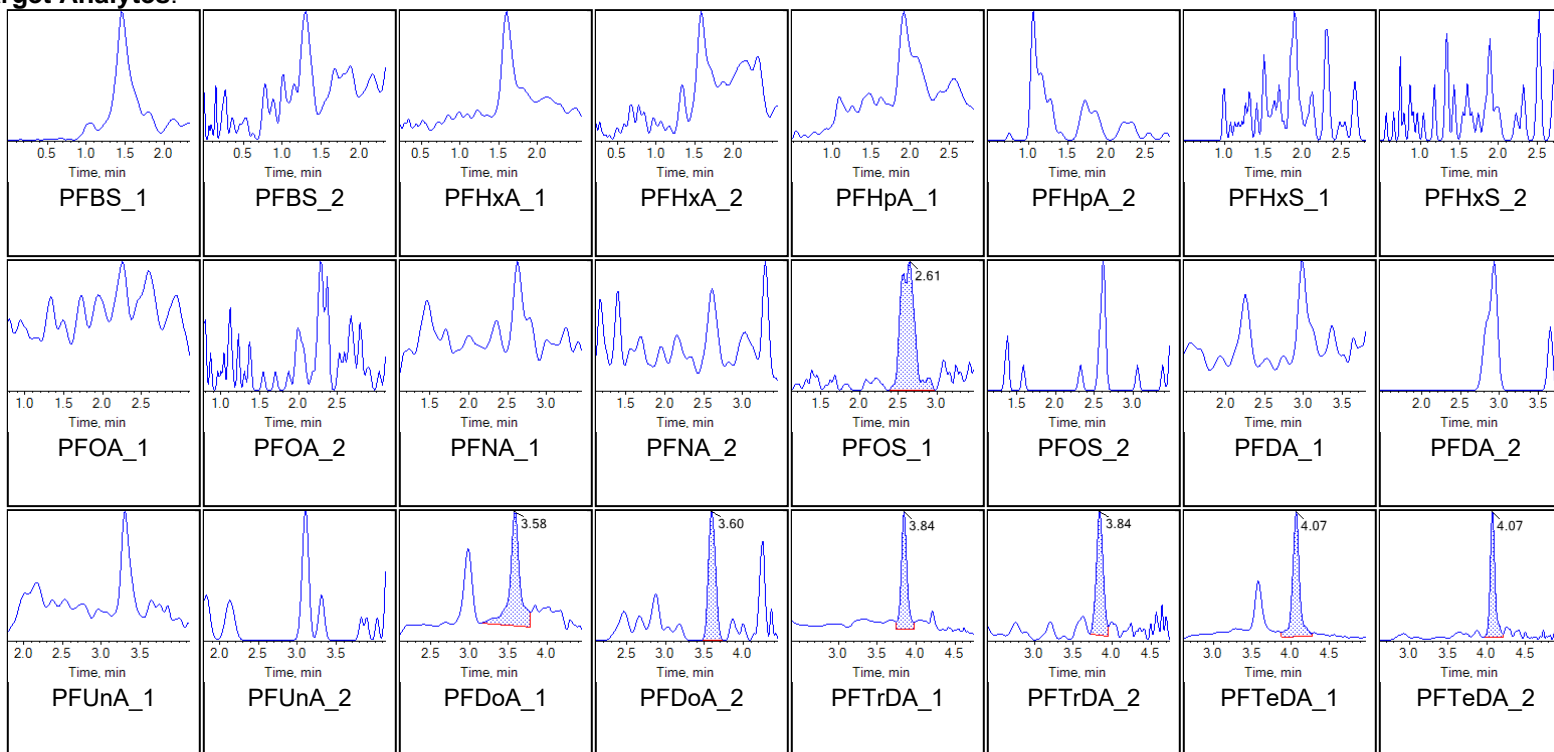
Internal Standards:



Sample Name	LE58 IB	Injection Vial	8
Sample ID	Instrument Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 9:10:14 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481

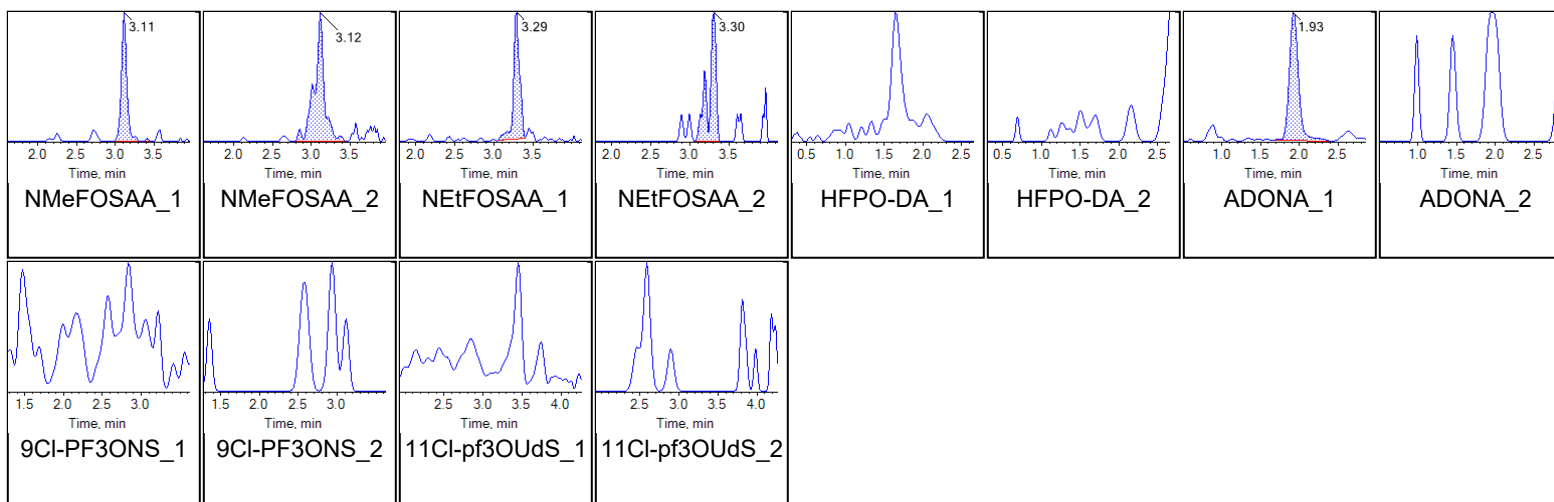
Chromatograms

Target Analytes:

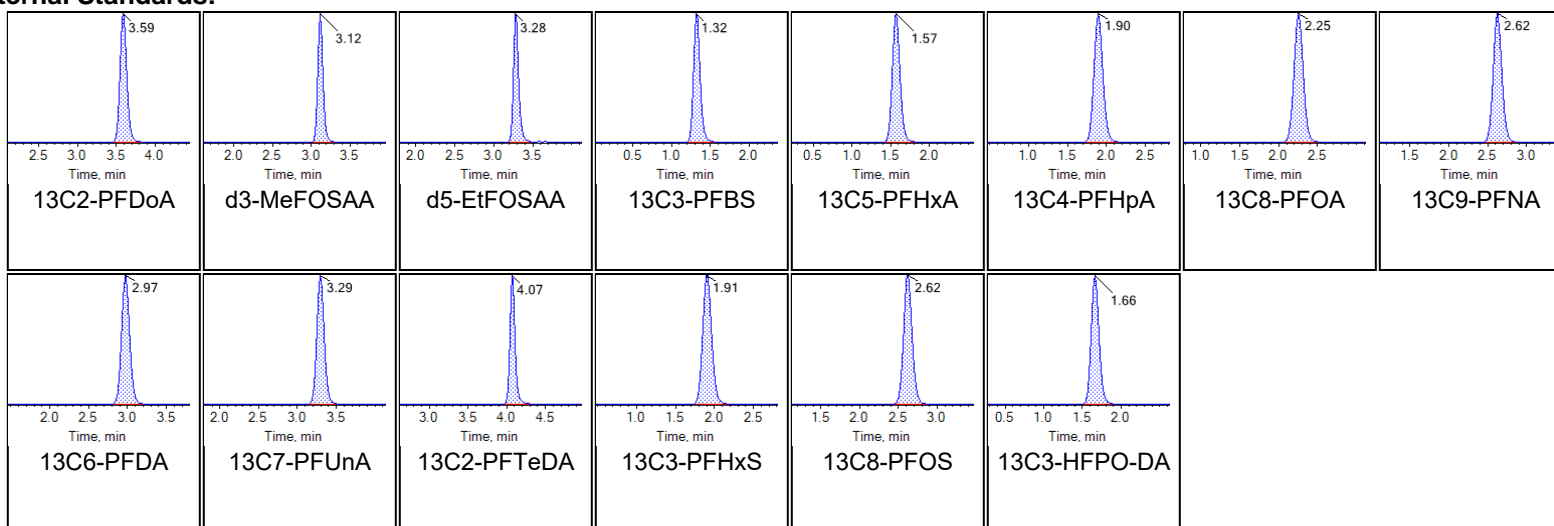




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Internal Standards:





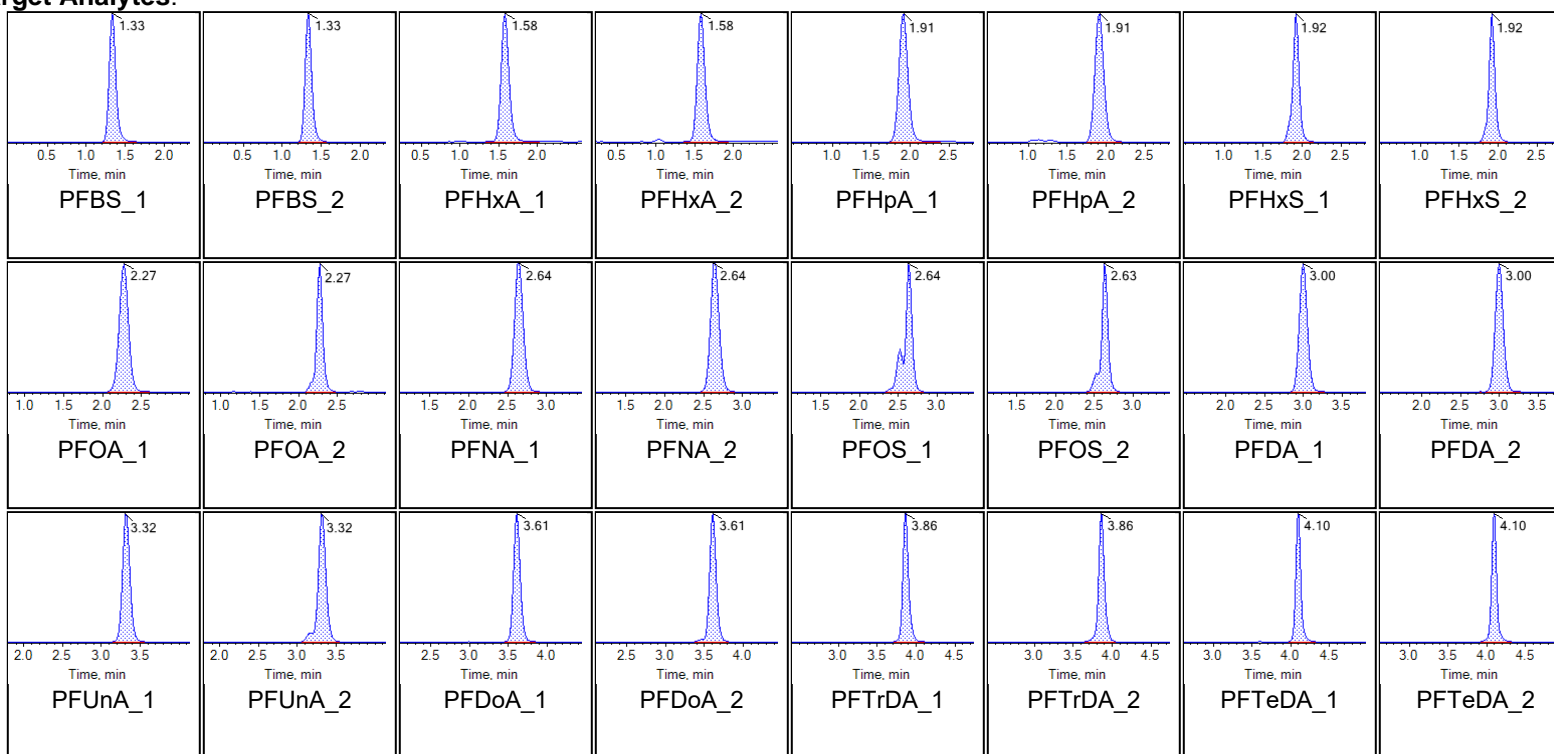
Chromatogram Report

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Sample Name	LE59 ICC	Injection Vial	9
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 9:20:41 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481

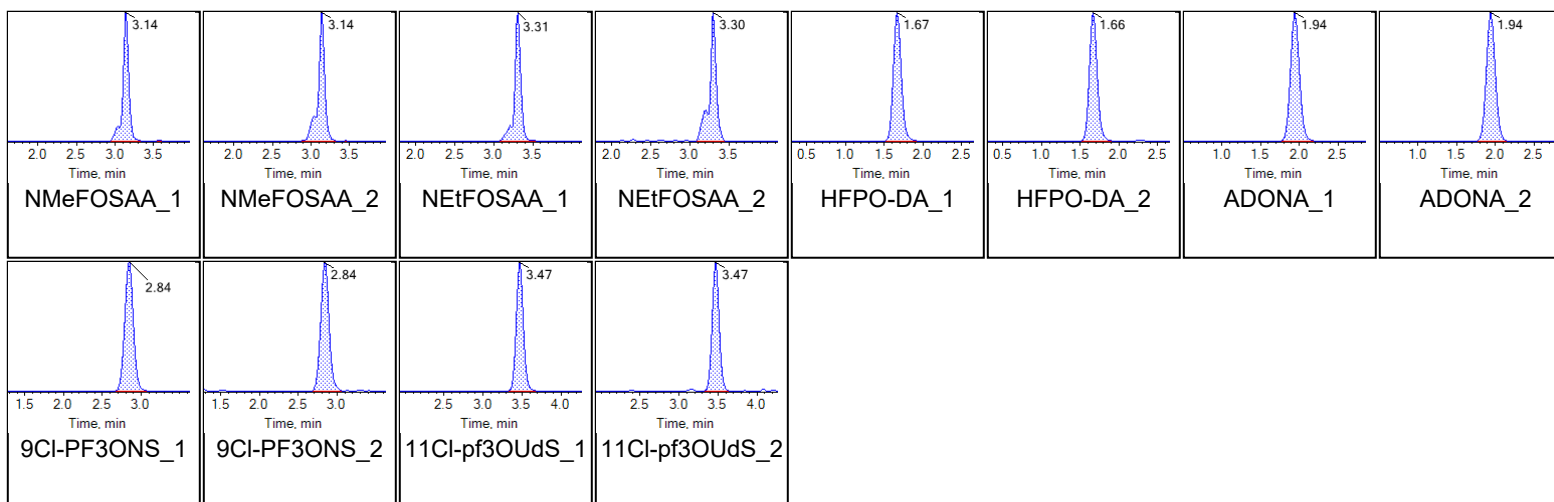
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Target Analytes:

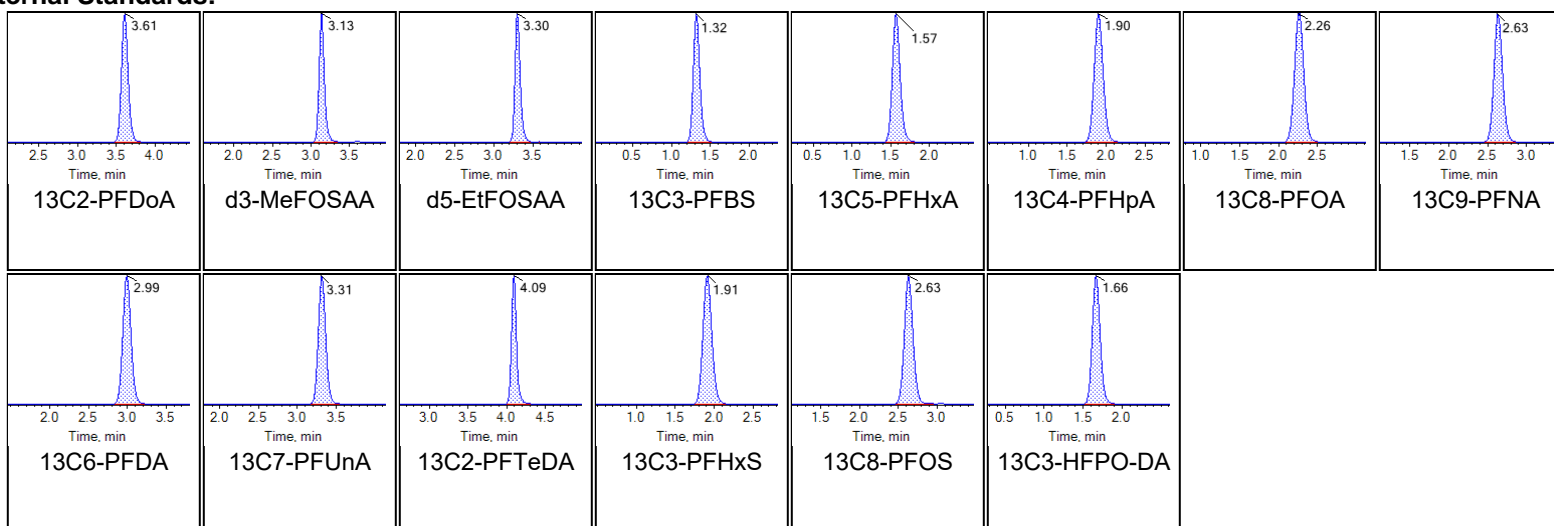




Chromatogram Report

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Internal Standards:





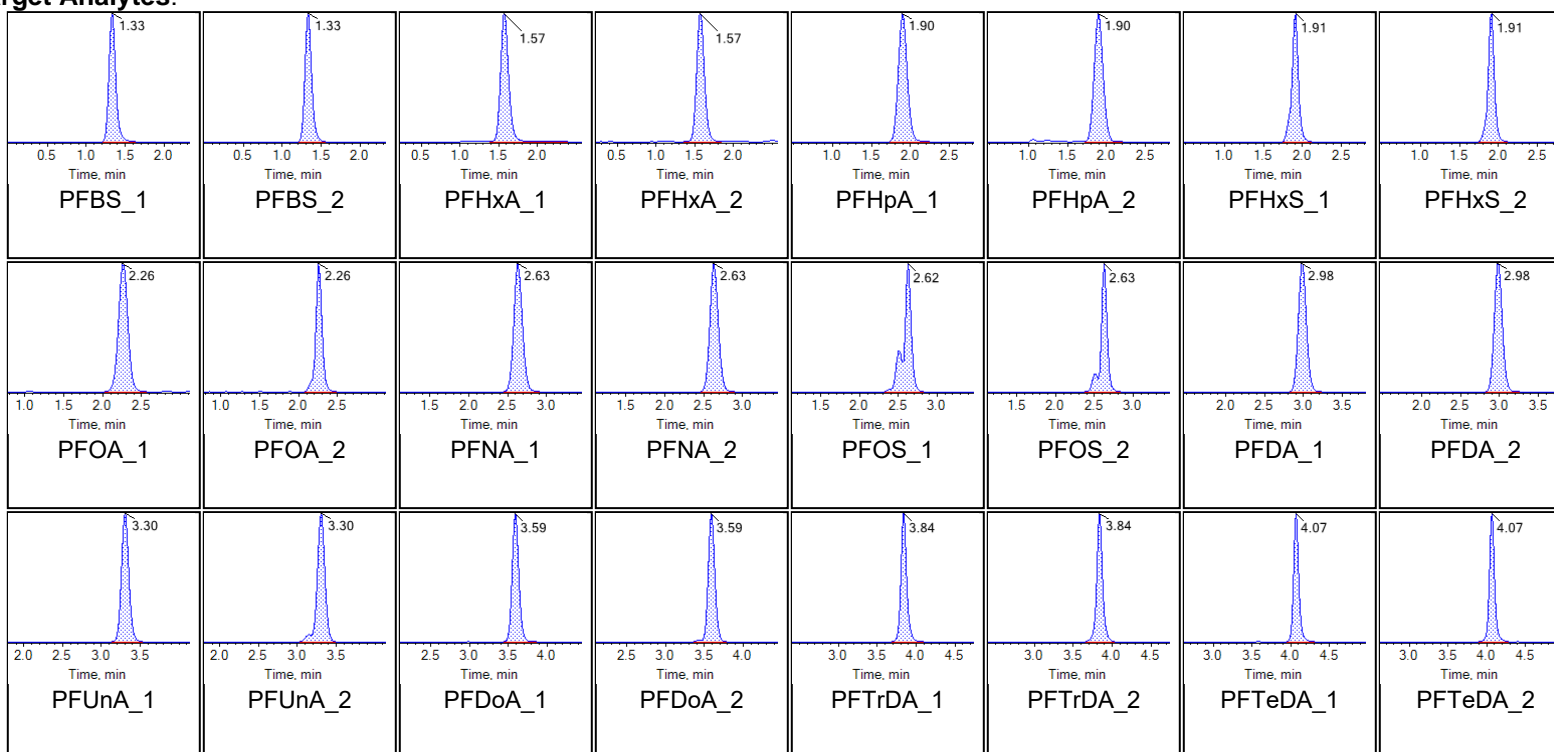
Chromatogram Report

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Sample Name	LE55 CCV	Injection Vial	32
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:00:30 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481

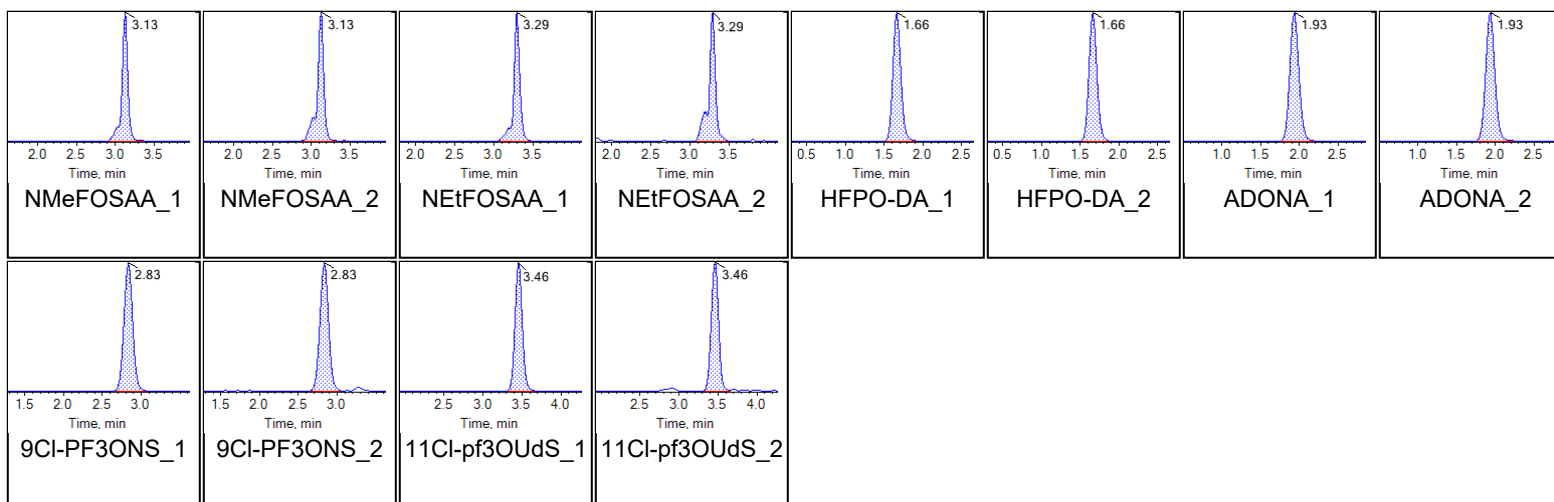
Chromatograms

Target Analytes:

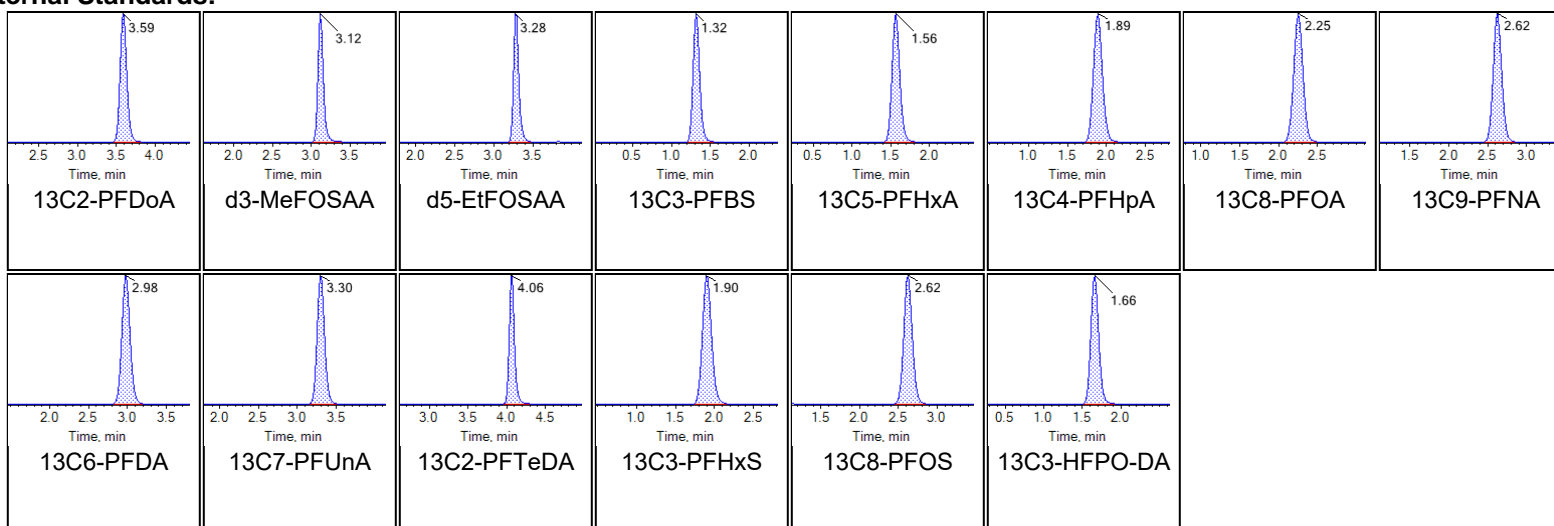




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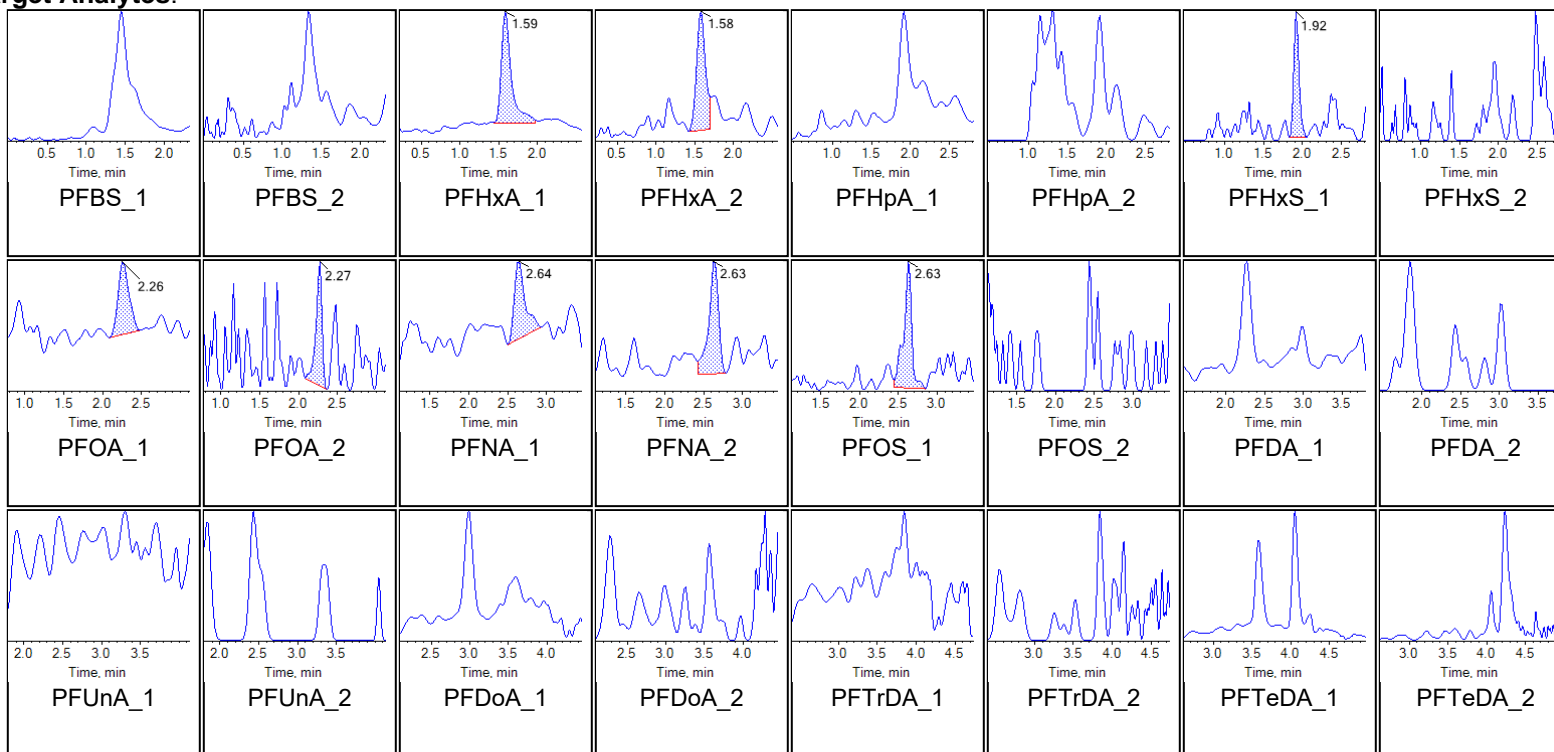
Internal Standards:



Sample Name	DB386PB-FS(0)	Injection Vial	2
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:21:28 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481

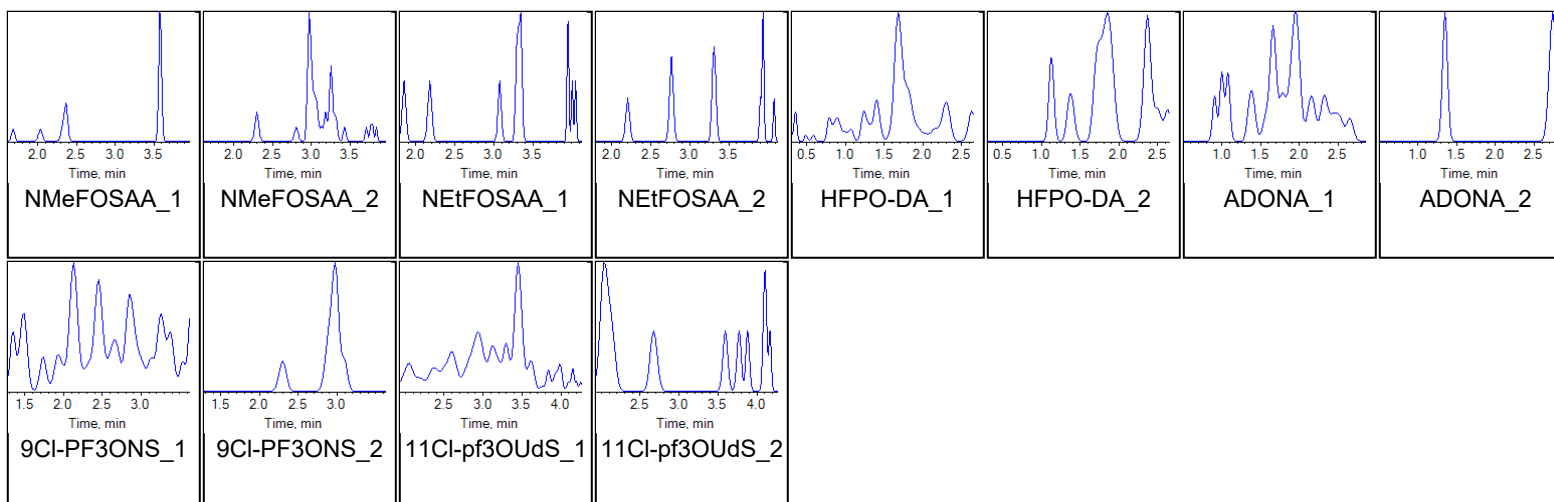
Chromatograms

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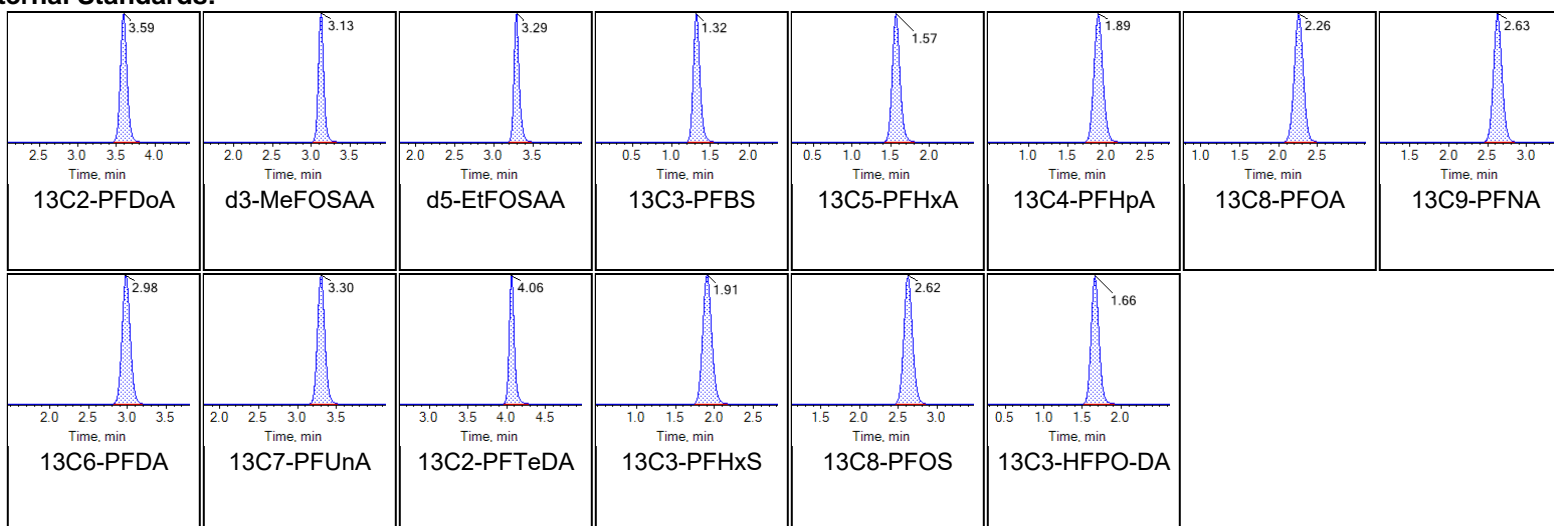




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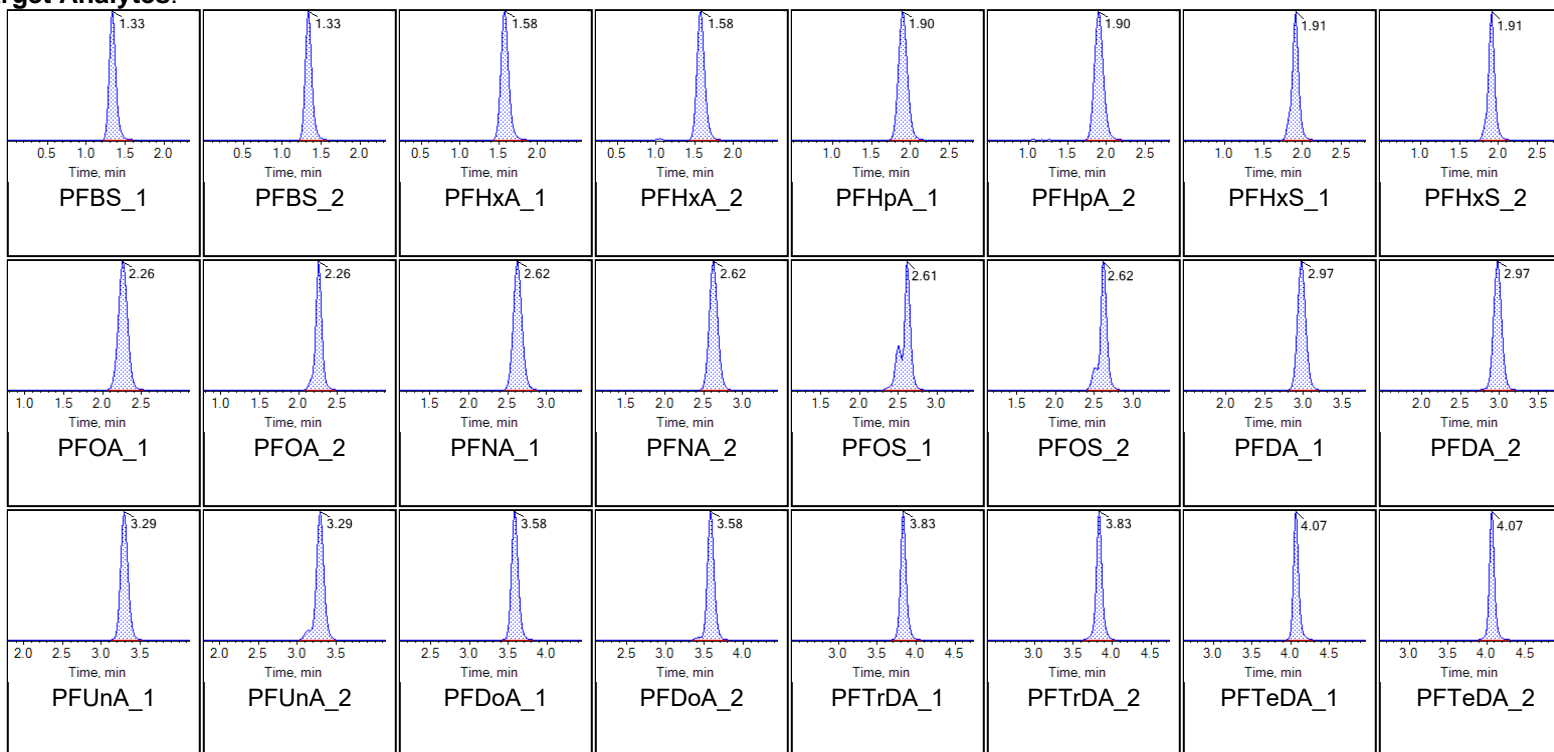
Internal Standards:



Sample Name	DB387LCS-FS(0)	Injection Vial	3
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
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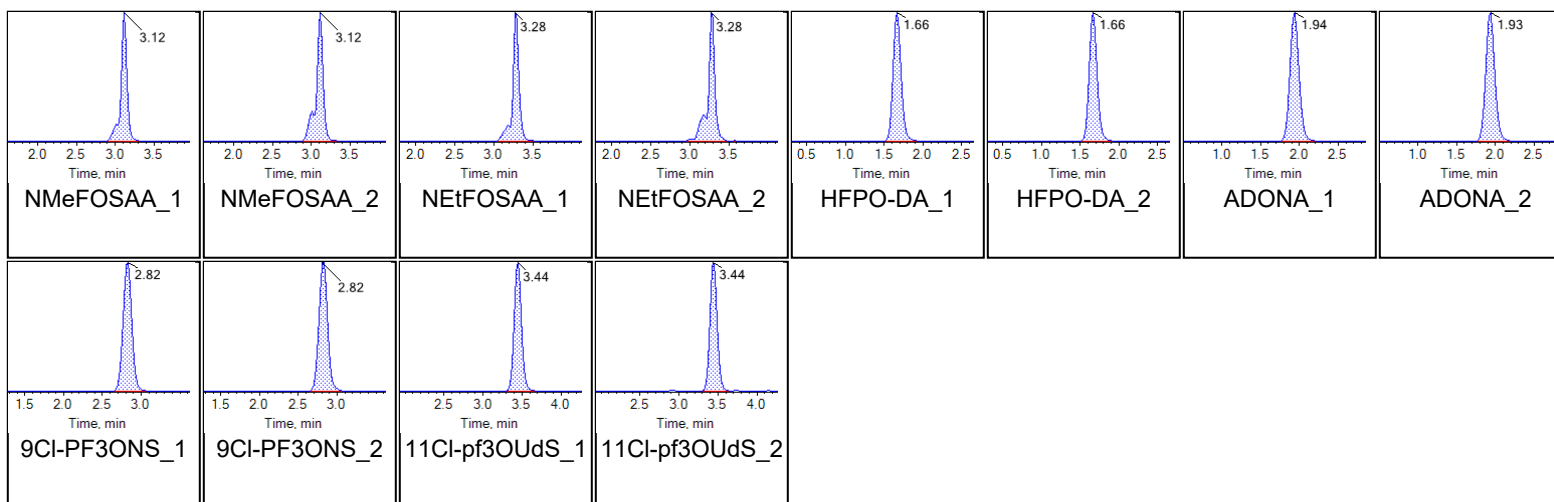
Chromatograms

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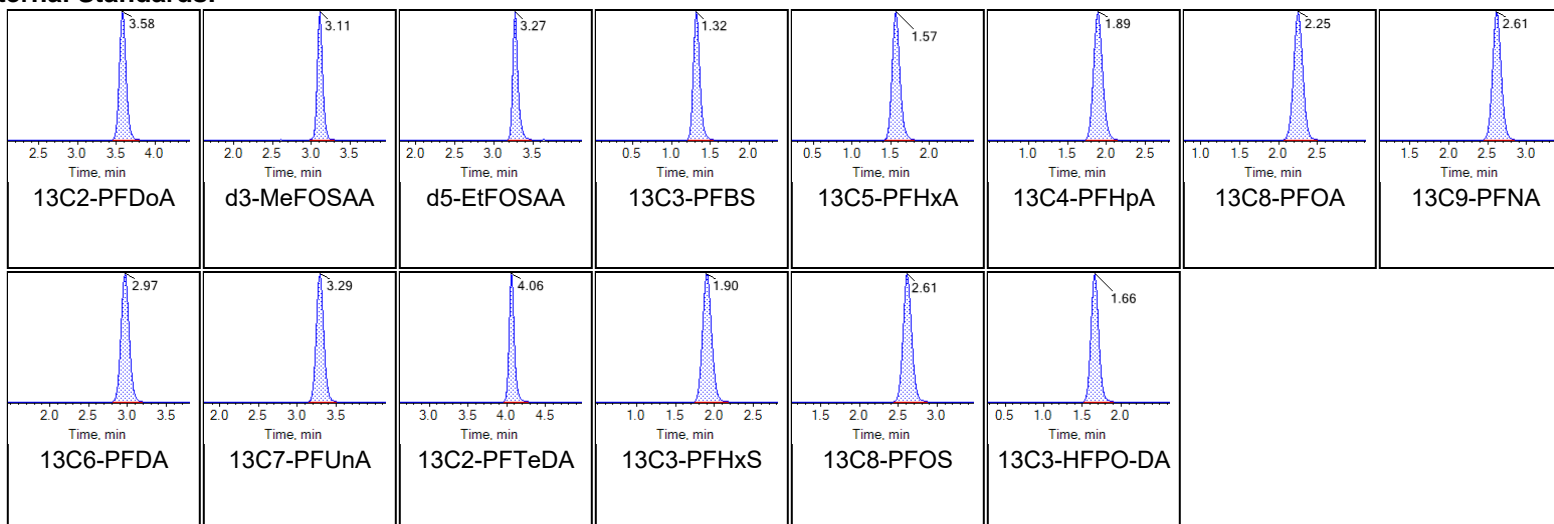




Chromatogram Report

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Internal Standards:





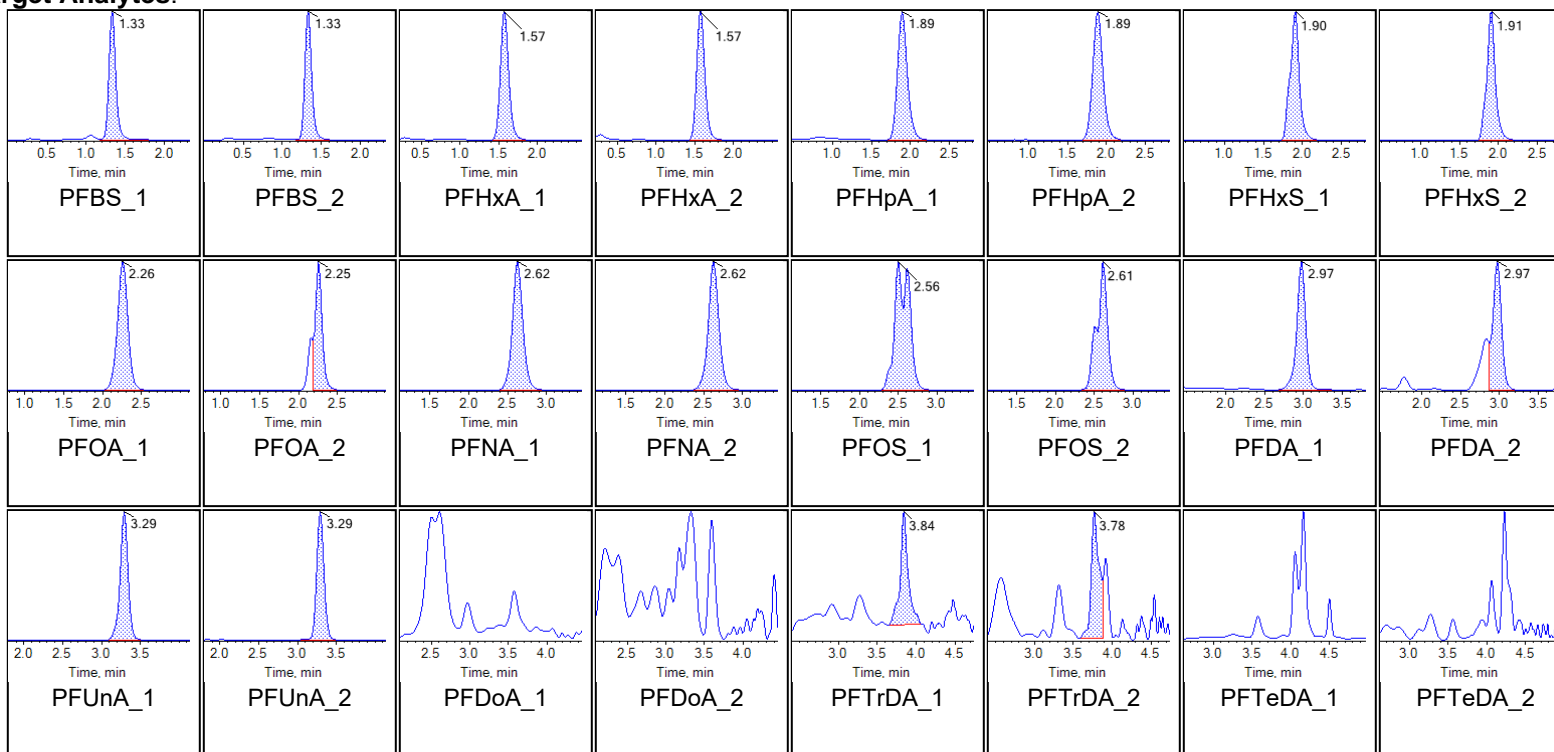
Chromatogram Report

Created with Analyst Reporter
Printed: 17/11/2020 2:13:50 PM

Sample Name	G1773-FS1(0)	Injection Vial	4
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:42:26 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481

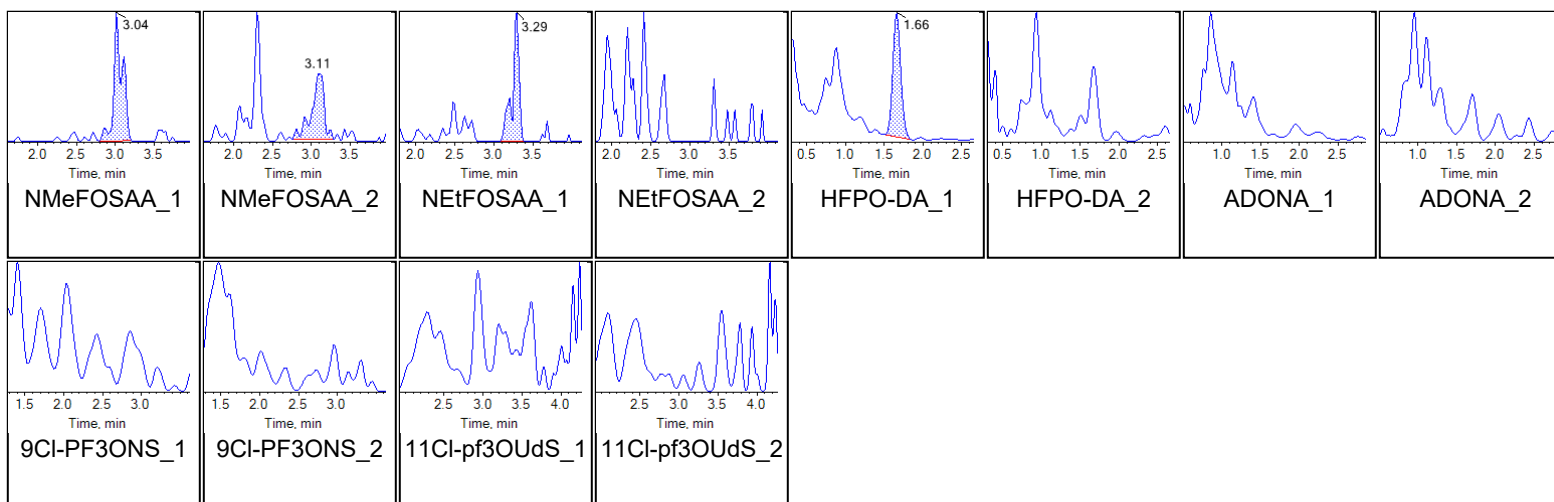
Chromatograms

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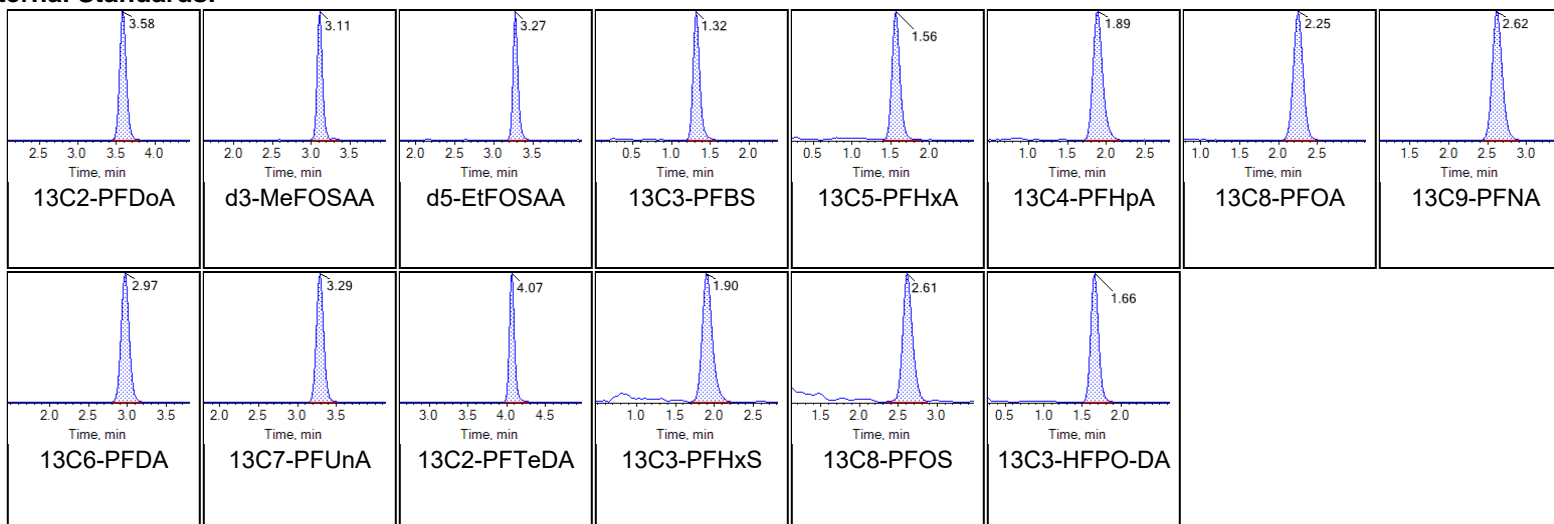




Chromatogram Report

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Internal Standards:





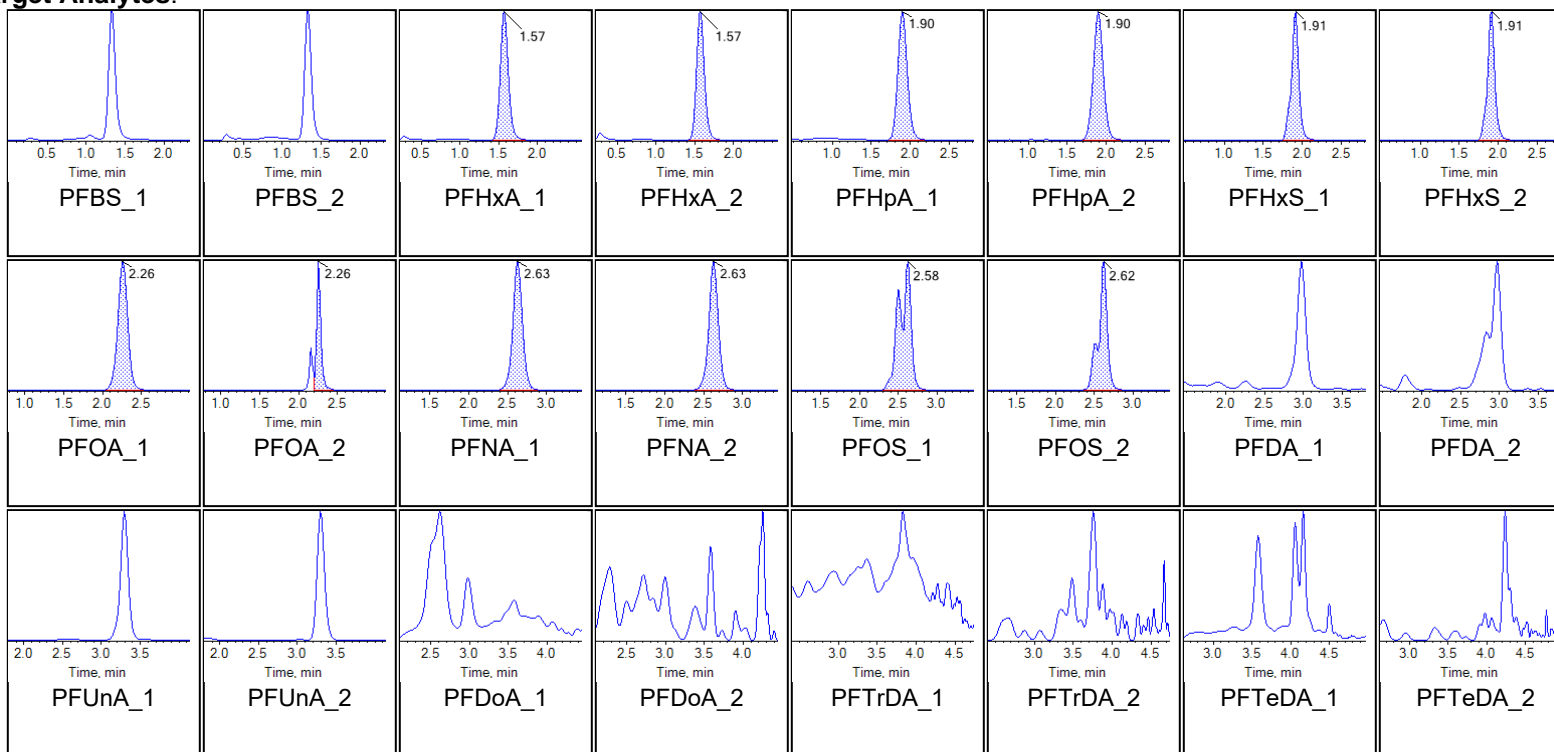
Chromatogram Report

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Sample Name	G1773-FS1-D(3)	Injection Vial	5
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:52:54 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481

Chromatograms

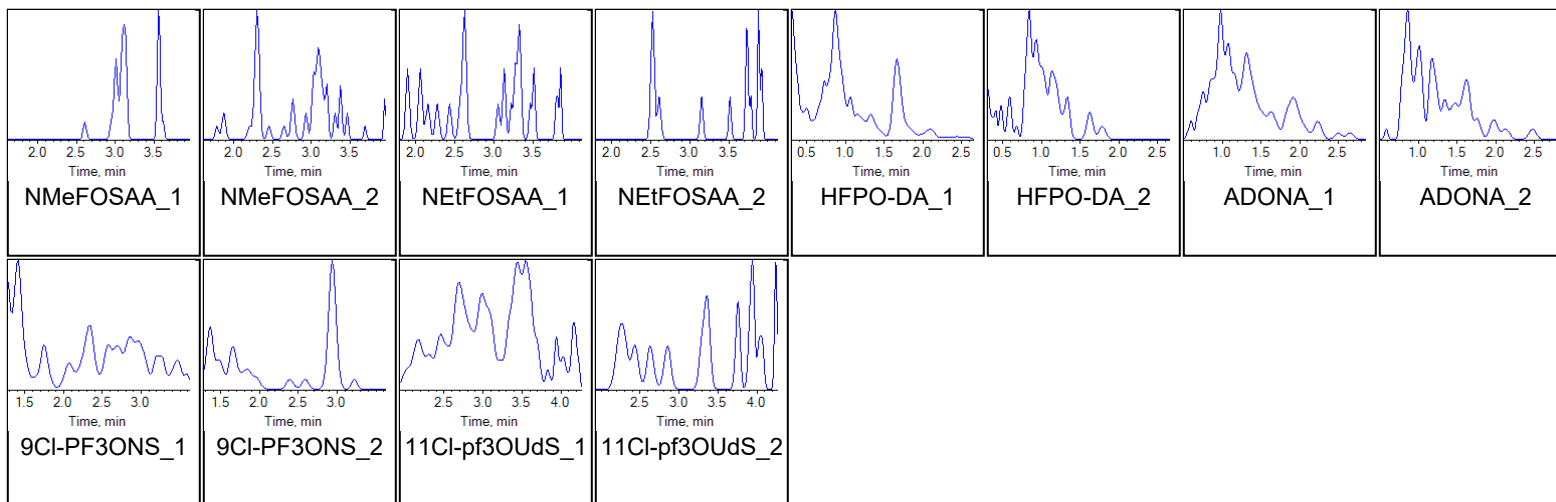
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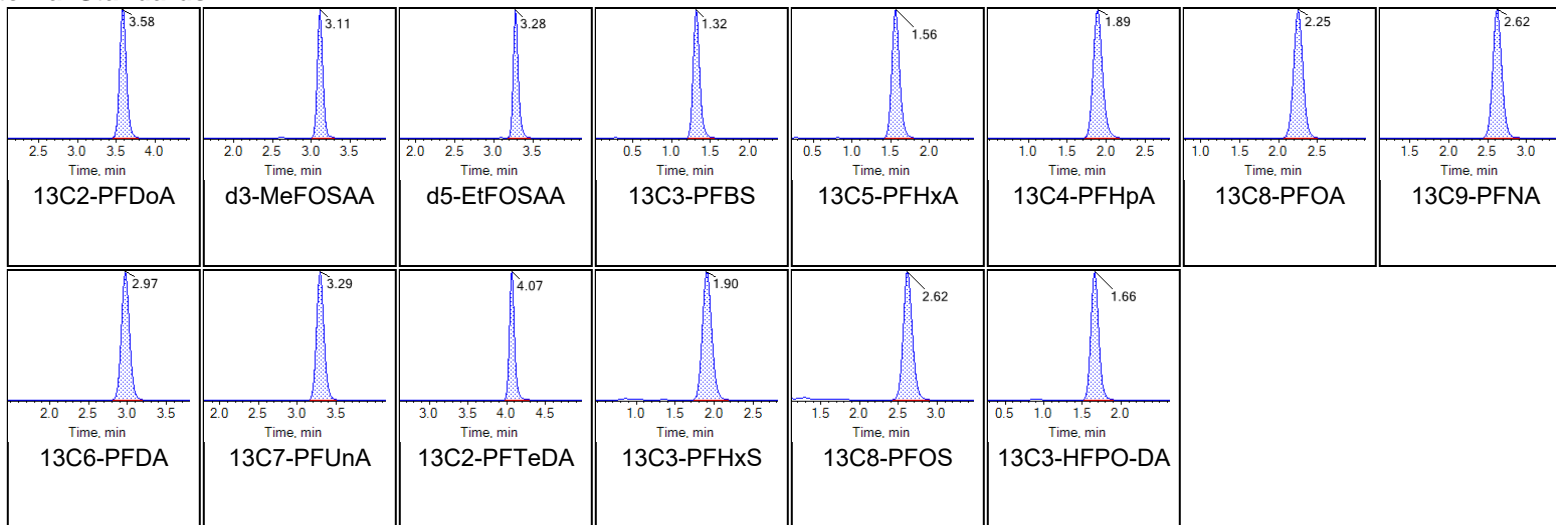


Chromatogram Report

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Internal Standards:





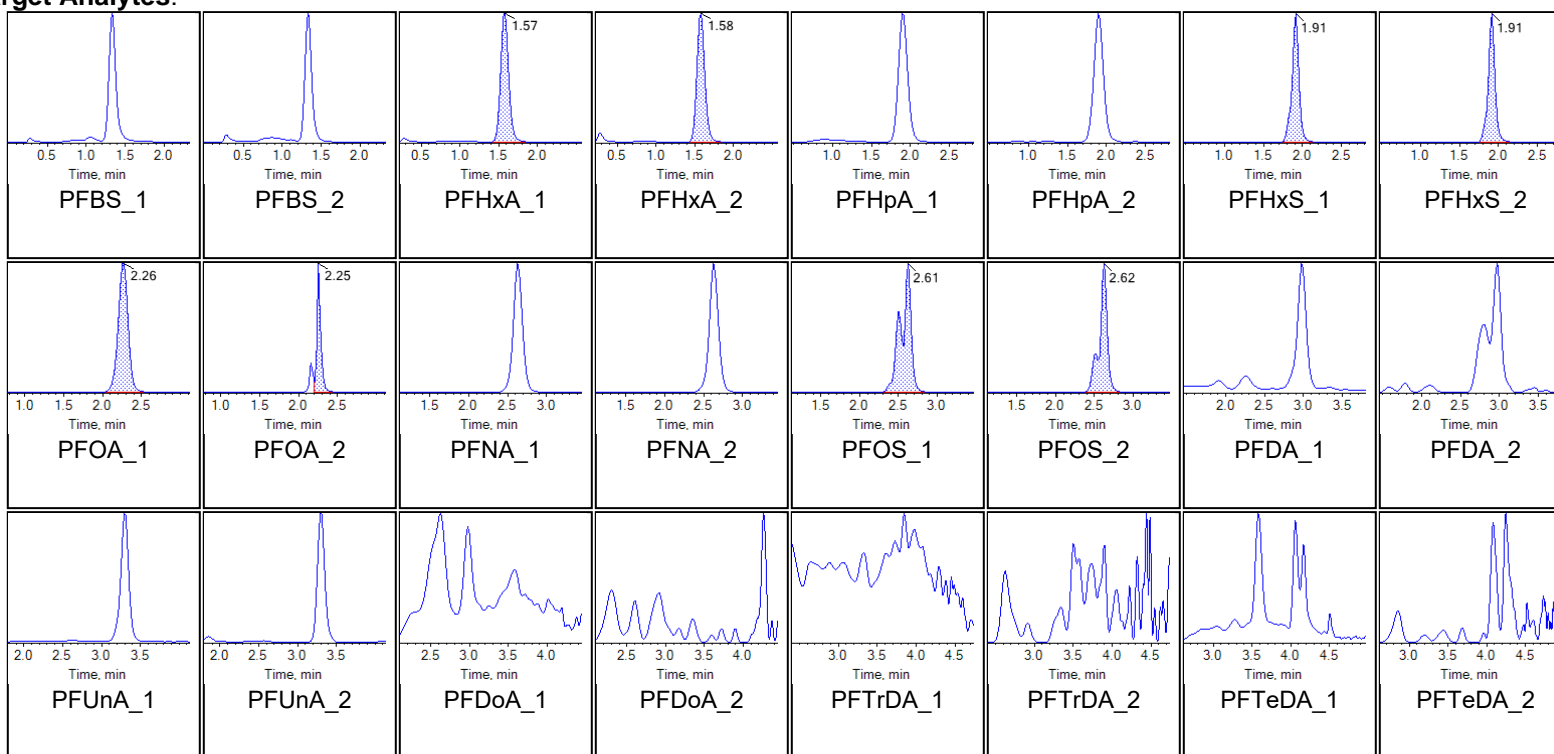
Chromatogram Report

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Sample Name	G1773-FS1-D(5)	Injection Vial	6
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
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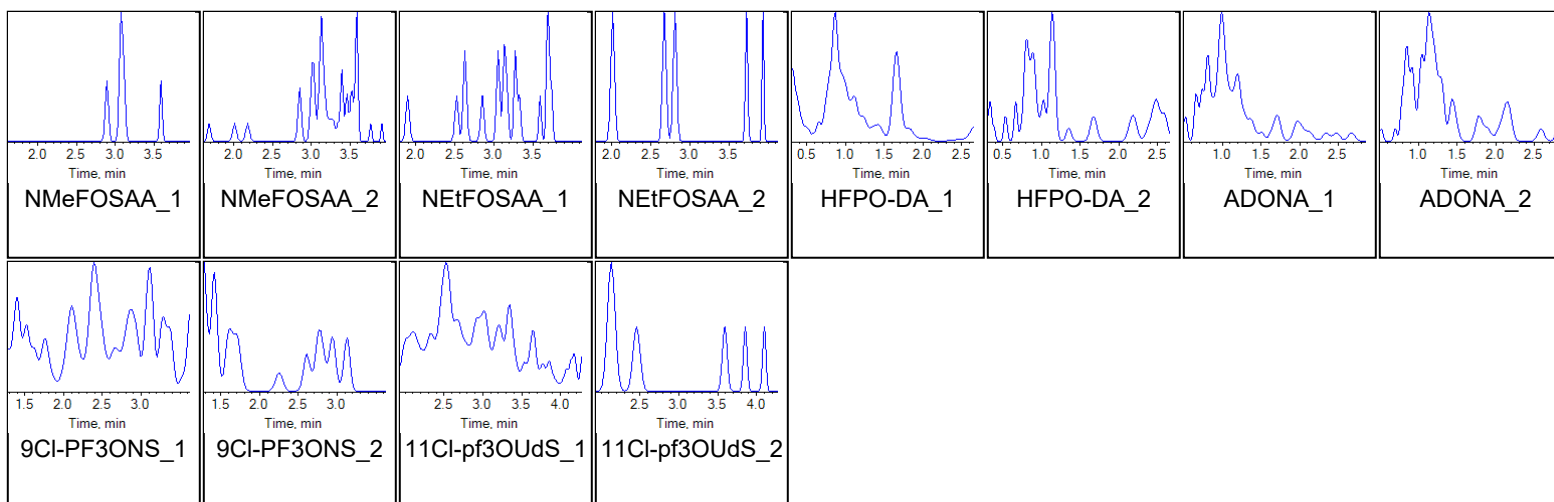
Chromatograms

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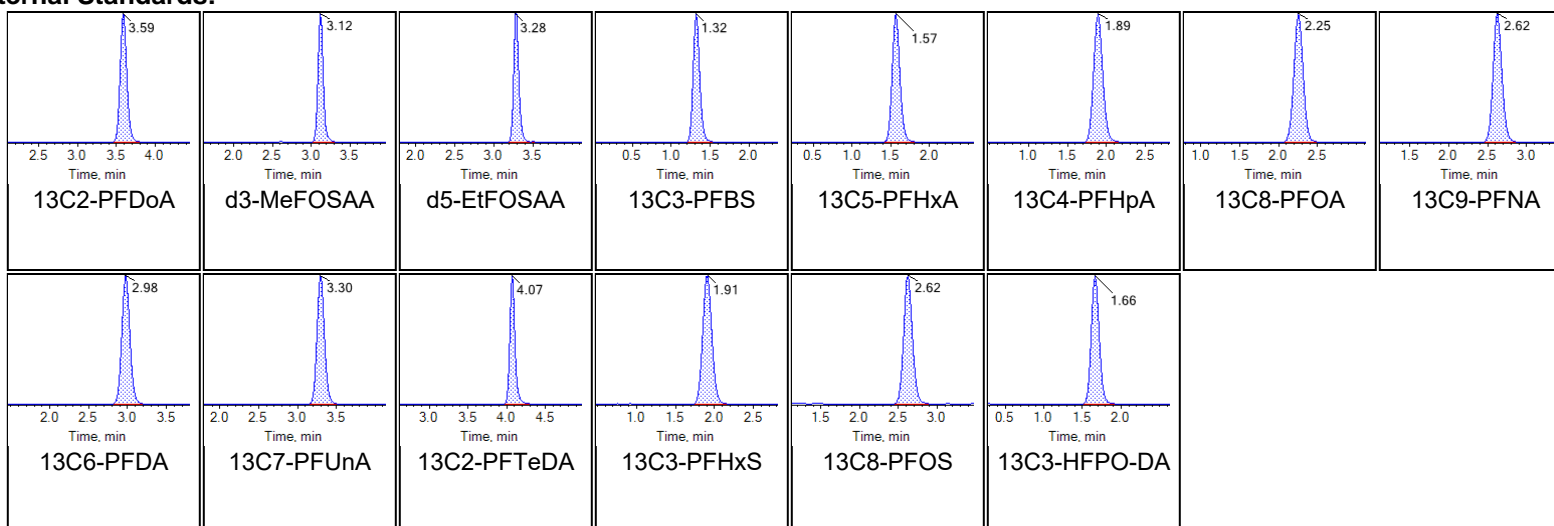




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Internal Standards:





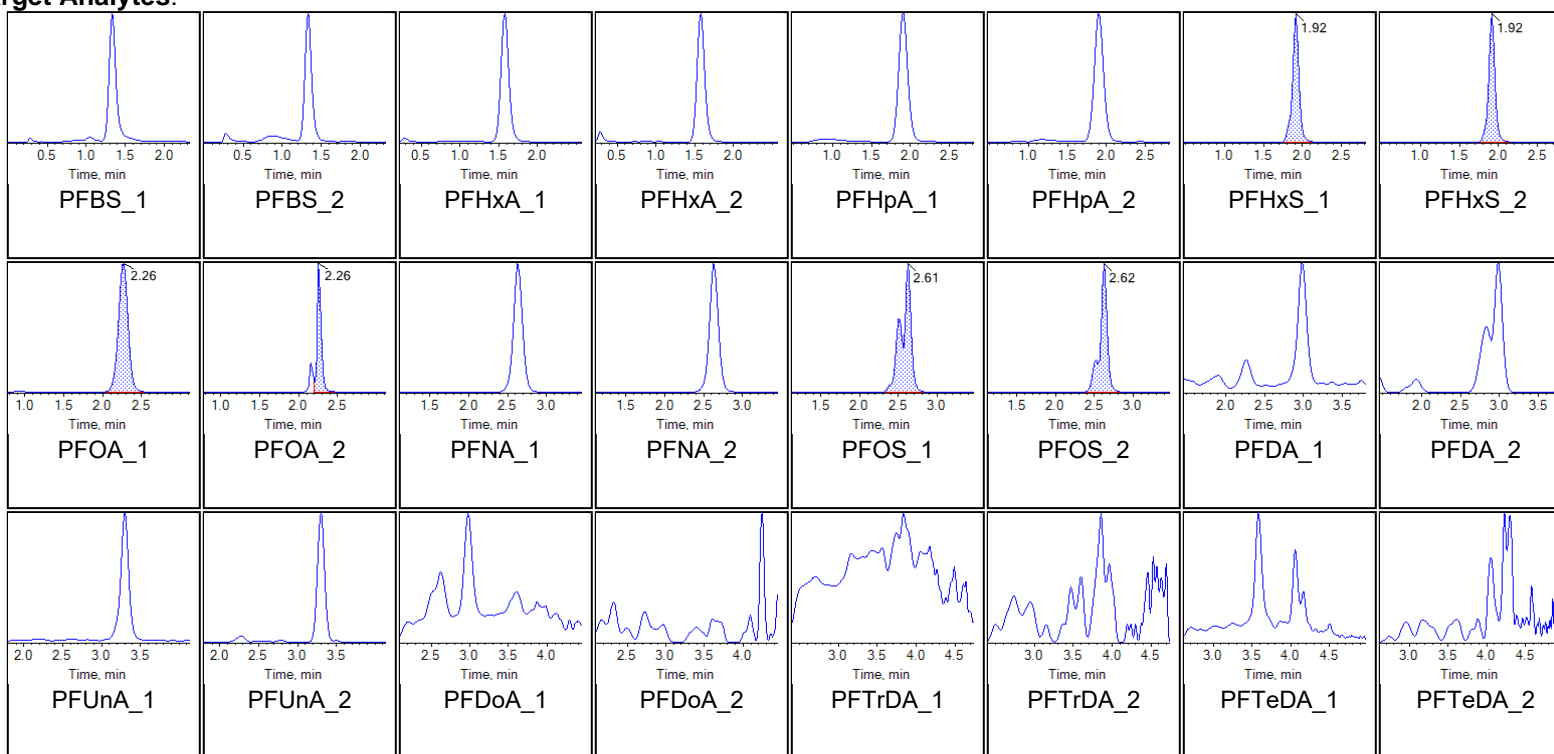
Chromatogram Report

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Sample Name	G1773-FS1-D(7)	Injection Vial	7
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:13:52 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481

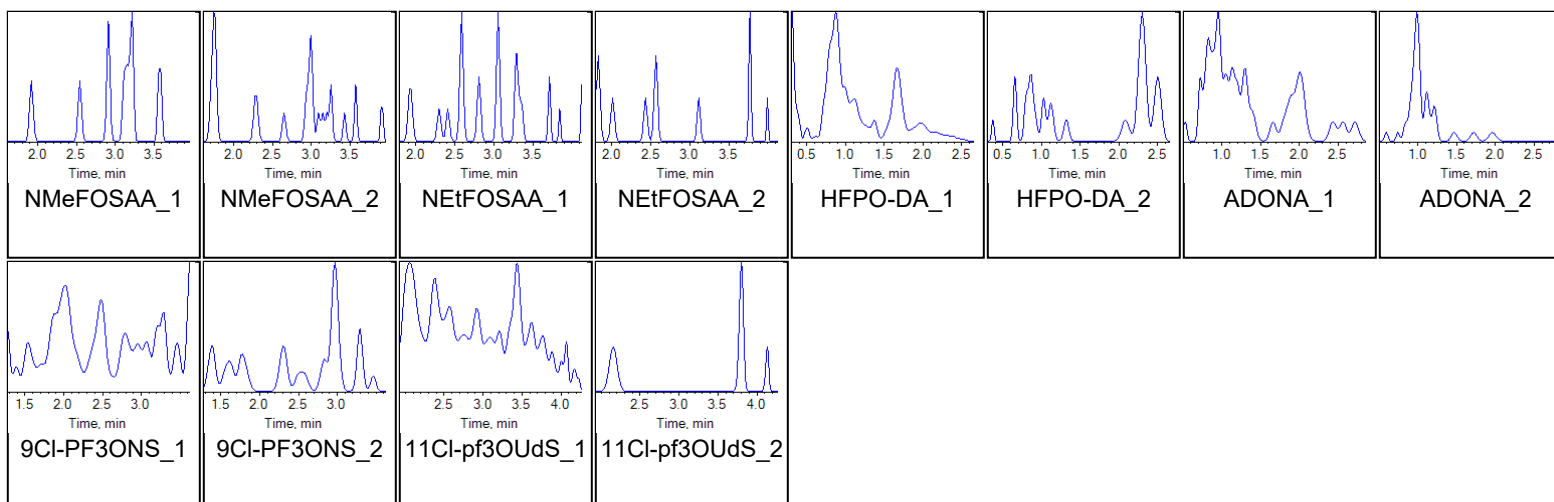
Chromatograms

Target Analytes:

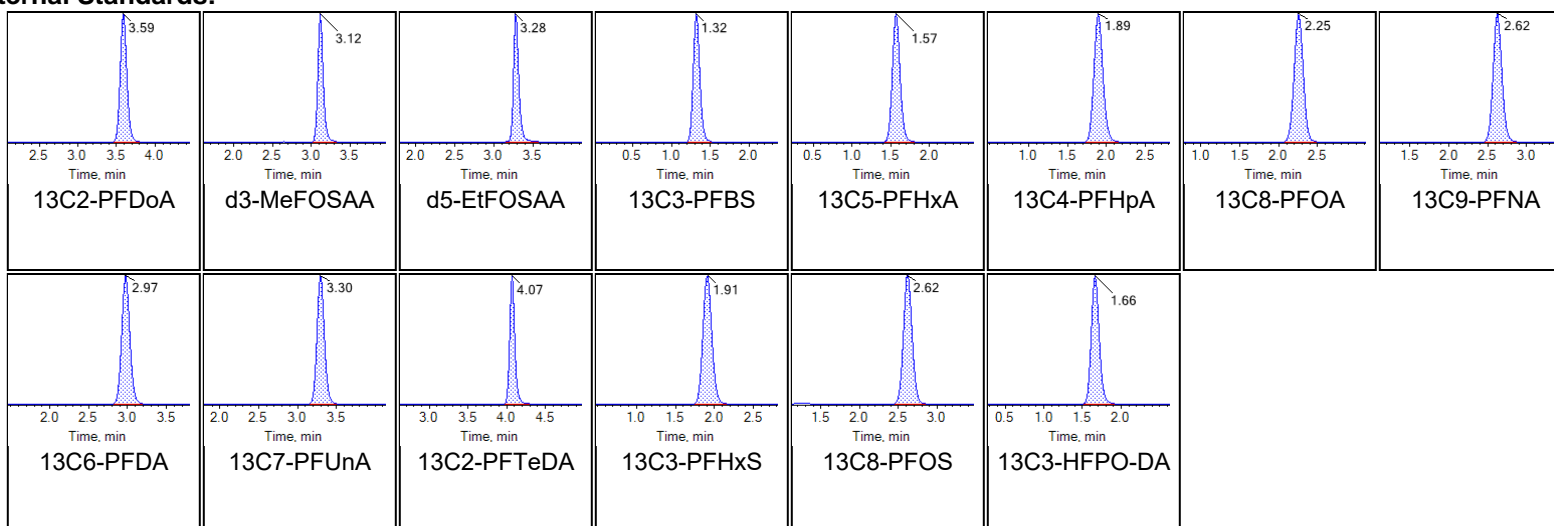




Chromatogram Report

Created with Analyst Reporter
Printed: 17/11/2020 2:13:50 PM

Internal Standards:





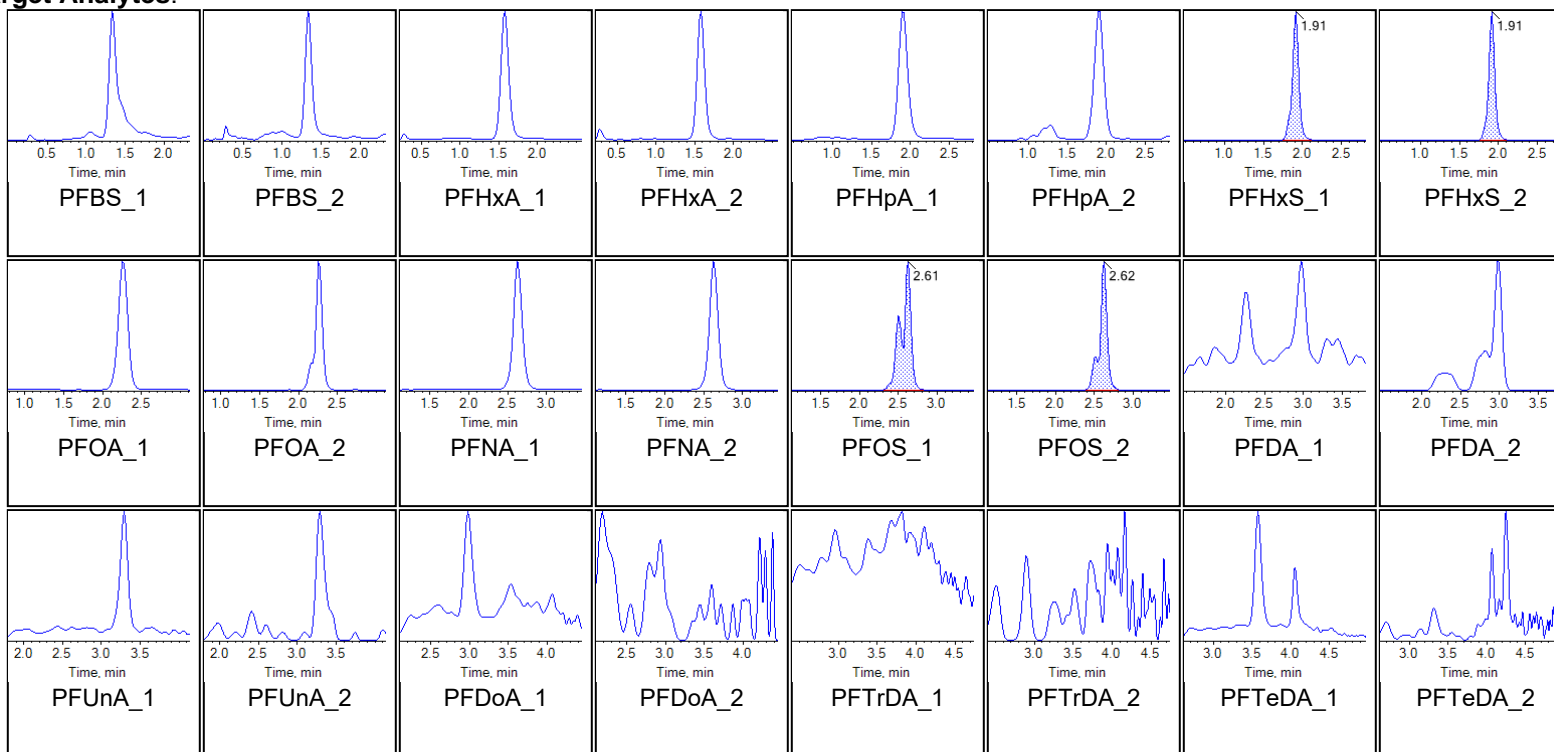
Chromatogram Report

Created with Analyst Reporter
Printed: 17/11/2020 2:13:50 PM

Sample Name	G1773-FS1-D(9)	Injection Vial	8
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:24:21 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481

Chromatograms

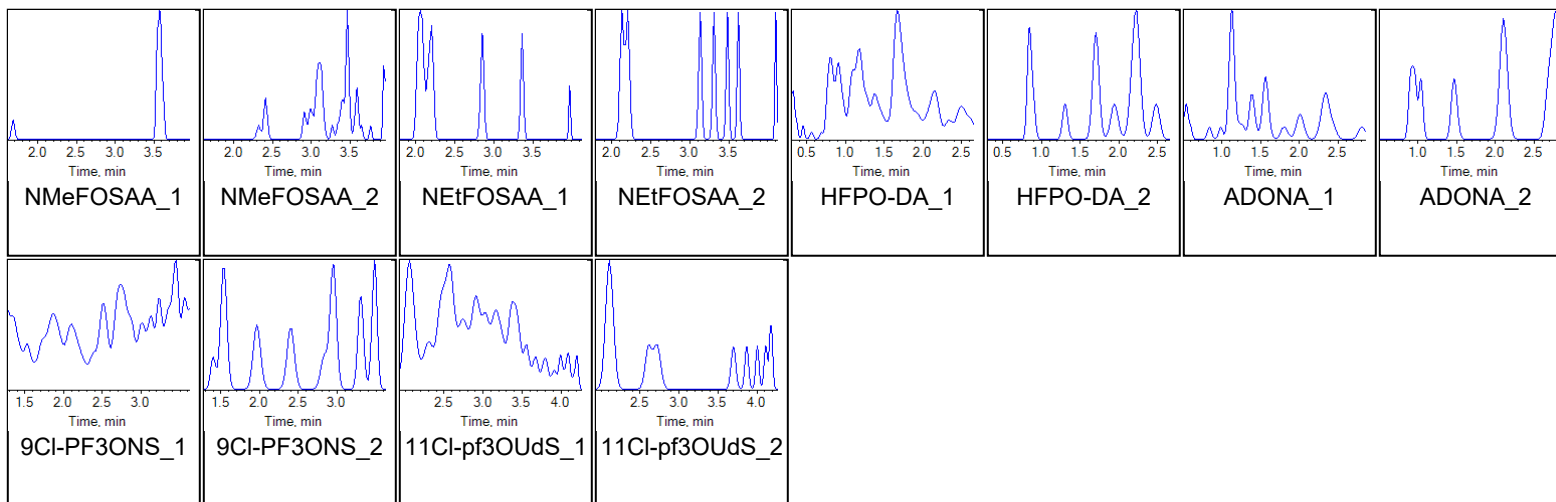
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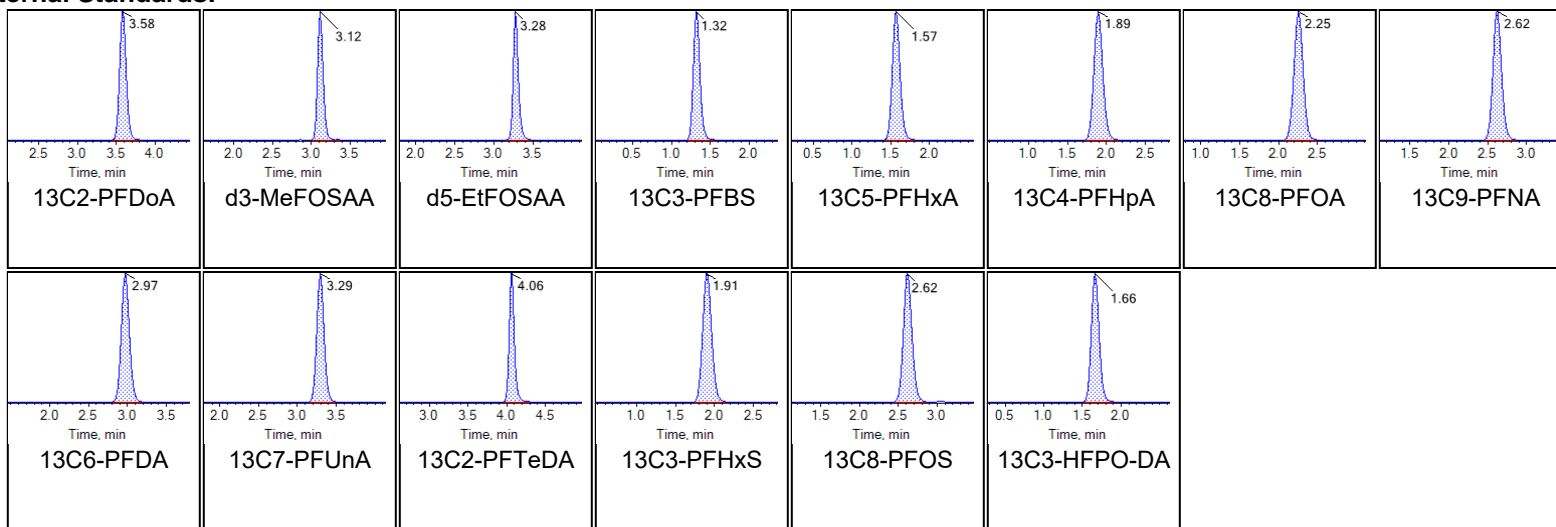


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Internal Standards:





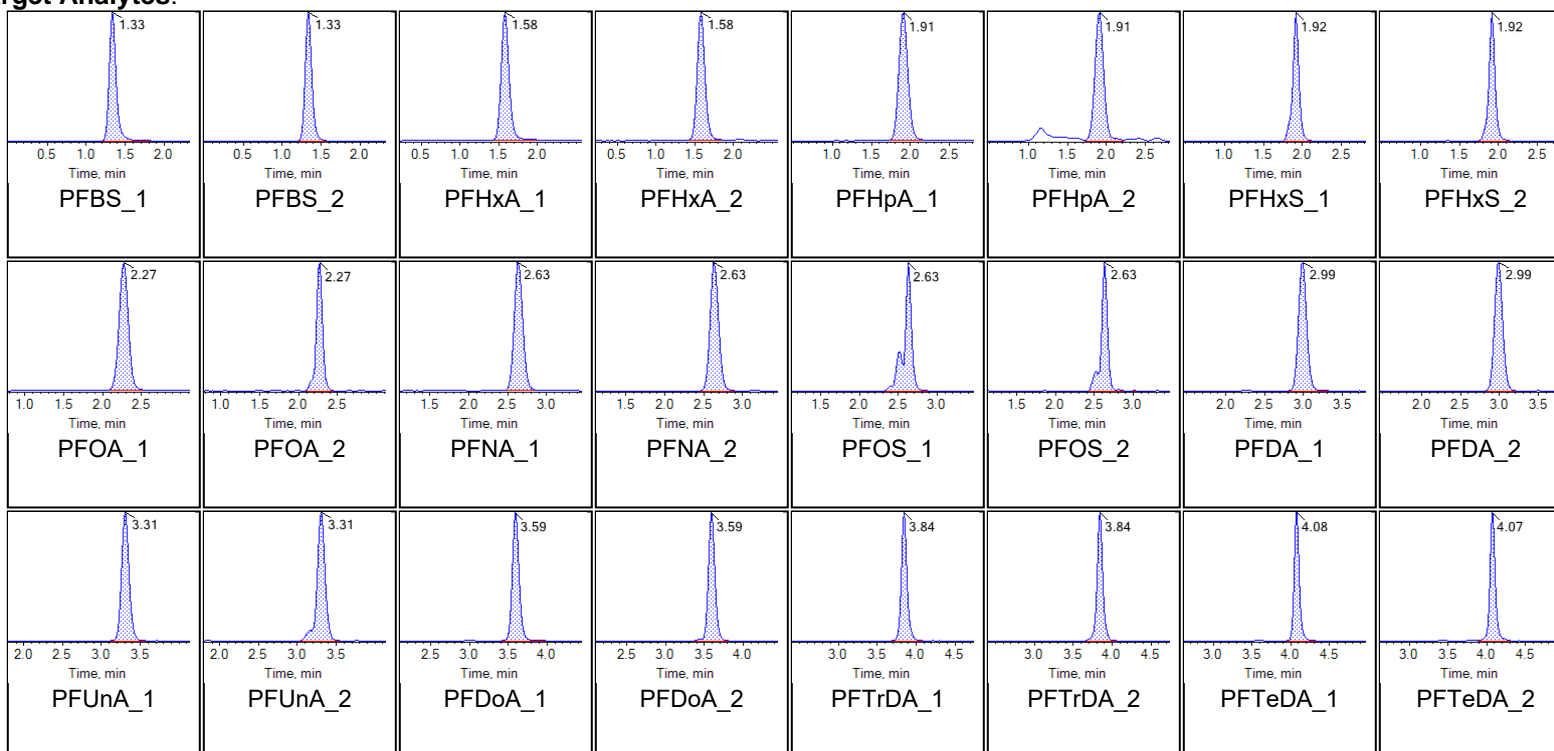
Chromatogram Report

Created with Analyst Reporter
Printed: 17/11/2020 2:13:50 PM

Sample Name	LE54 CCV	Injection Vial	9
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:34:49 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481

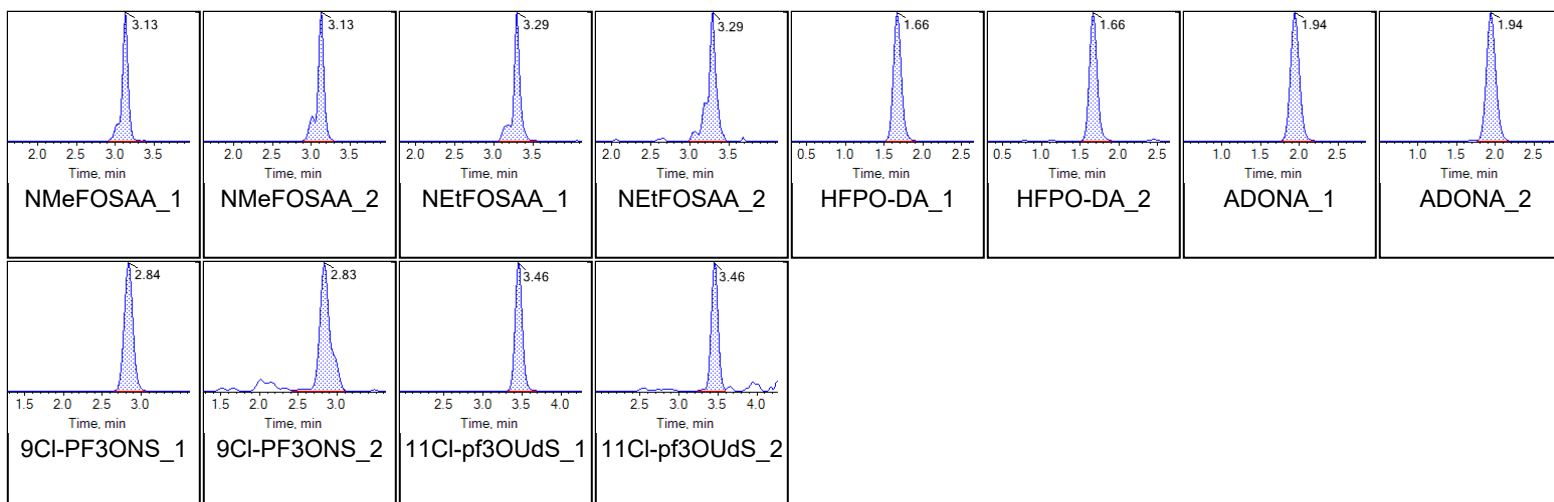
Chromatograms

Target Analytes:

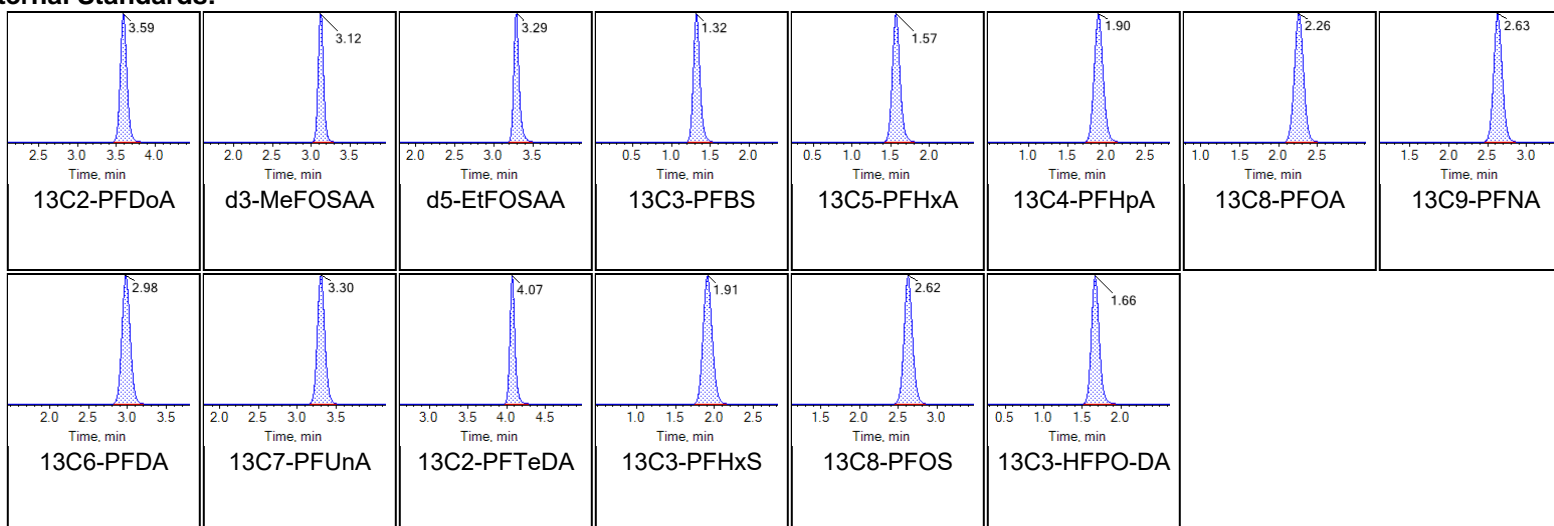




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Internal Standards:





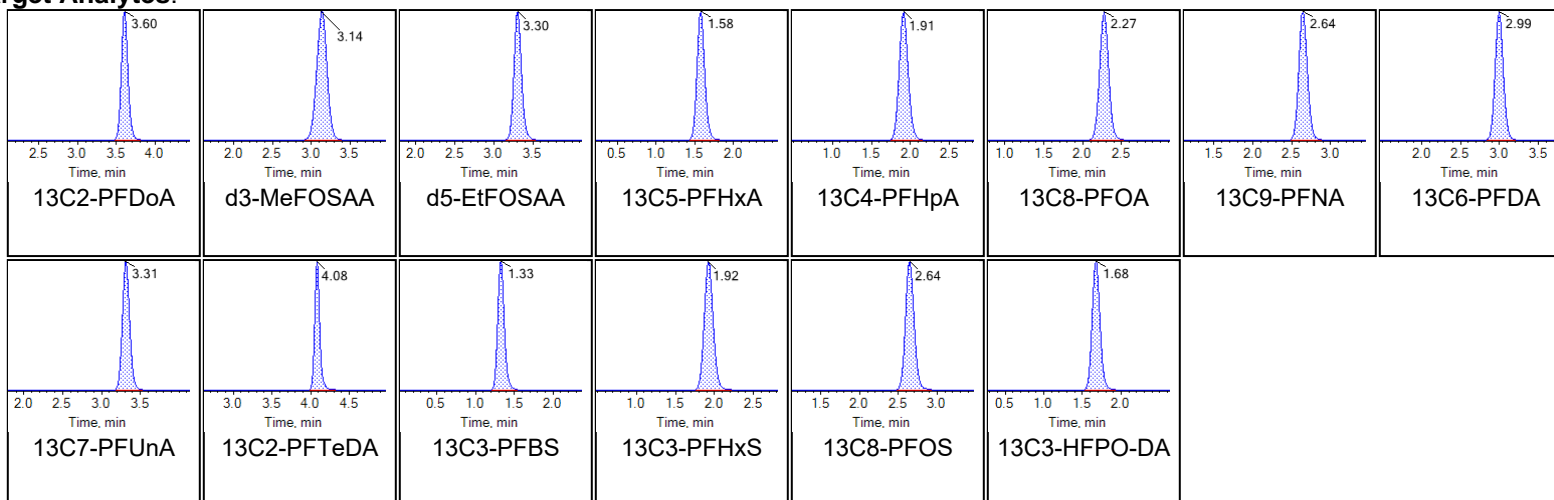
Chromatogram Report

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Printed: 17/11/2020 2:08:12 PM

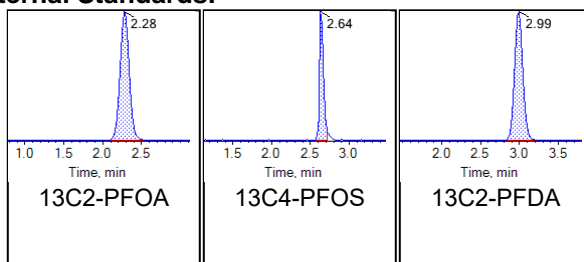
Sample Name	LE52	Injection Vial	2
Sample ID	L1	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:07:30 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS

Chromatograms

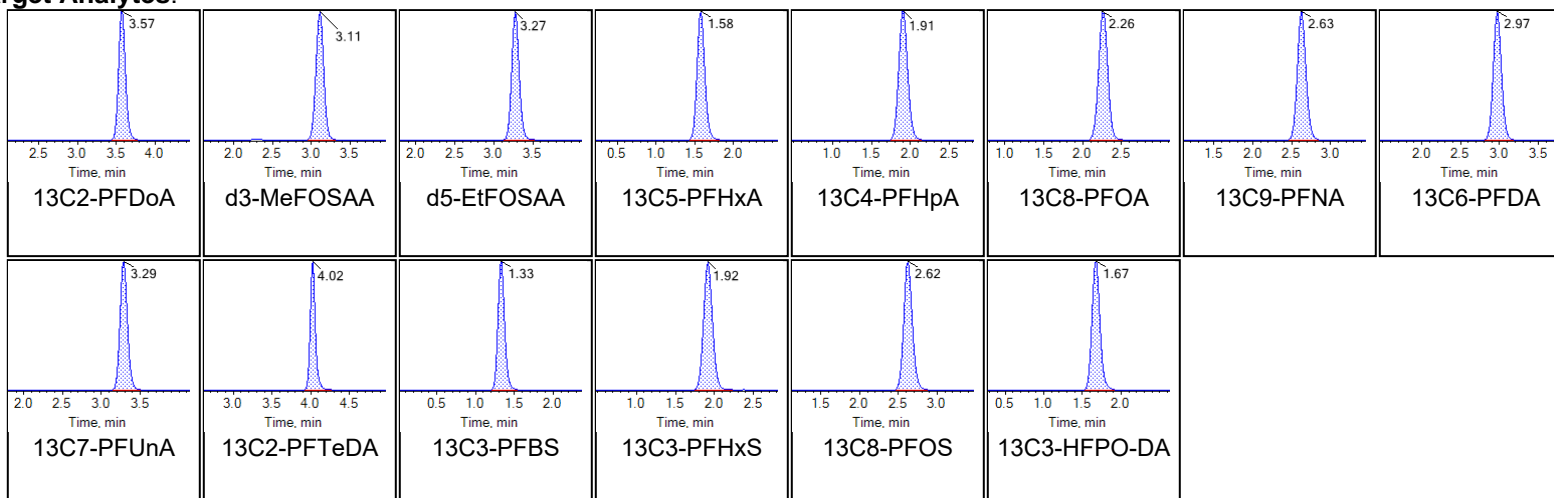
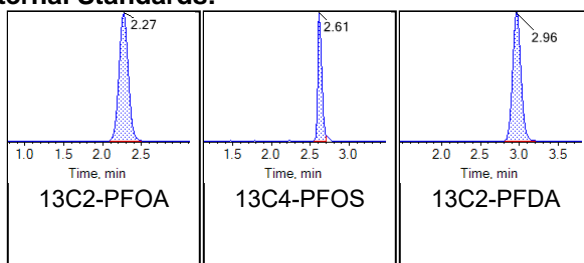
Target Analytes:



Internal Standards:



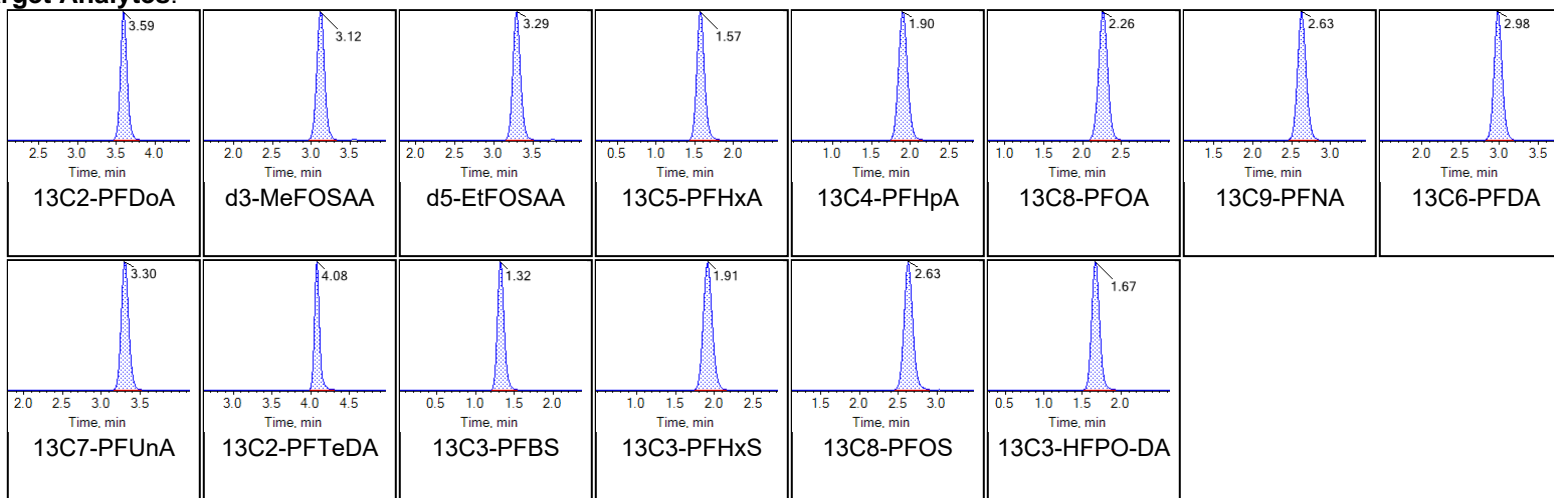
Sample Name	LE53	Injection Vial	3
Sample ID	L2	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:17:56 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS

Chromatograms**Target Analytes:****Internal Standards:**

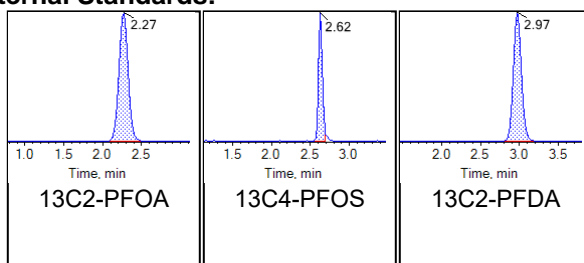
Sample Name	LE54	Injection Vial	4
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:28:24 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS

Chromatograms

Target Analytes:



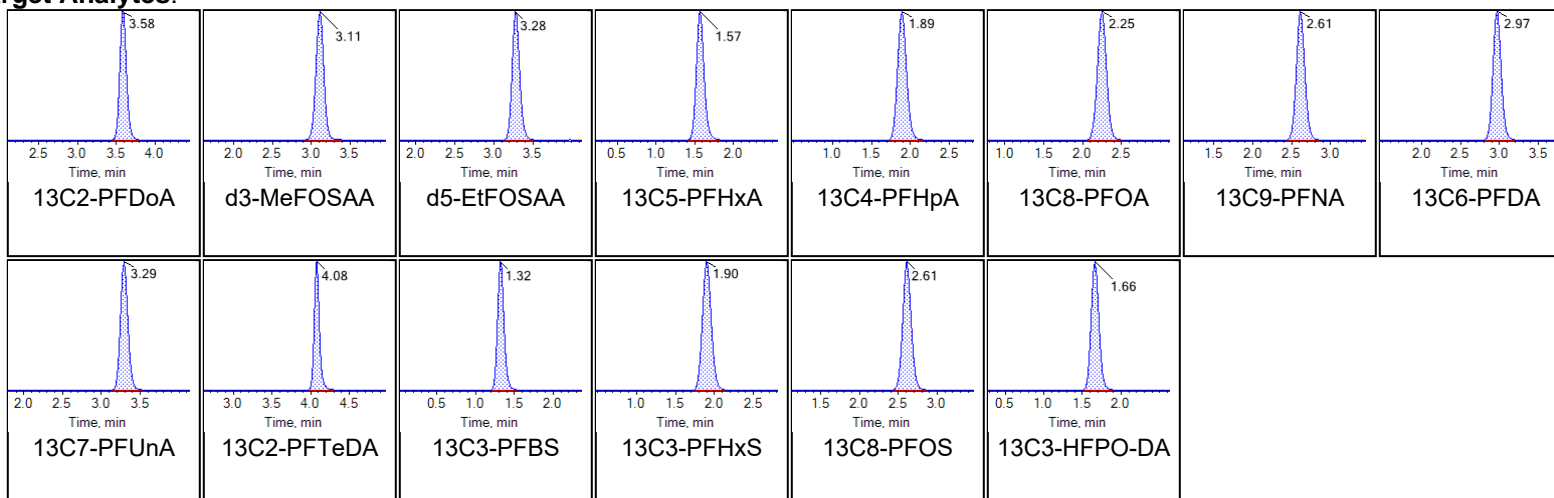
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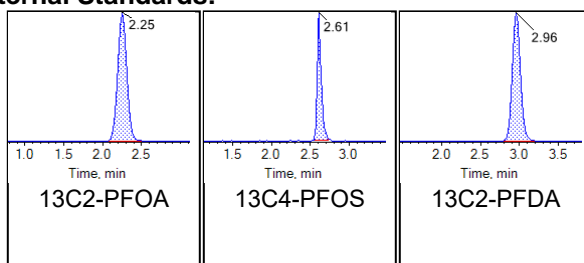
Sample Name	LE55	Injection Vial	5
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:38:51 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS

Chromatograms

Target Analytes:



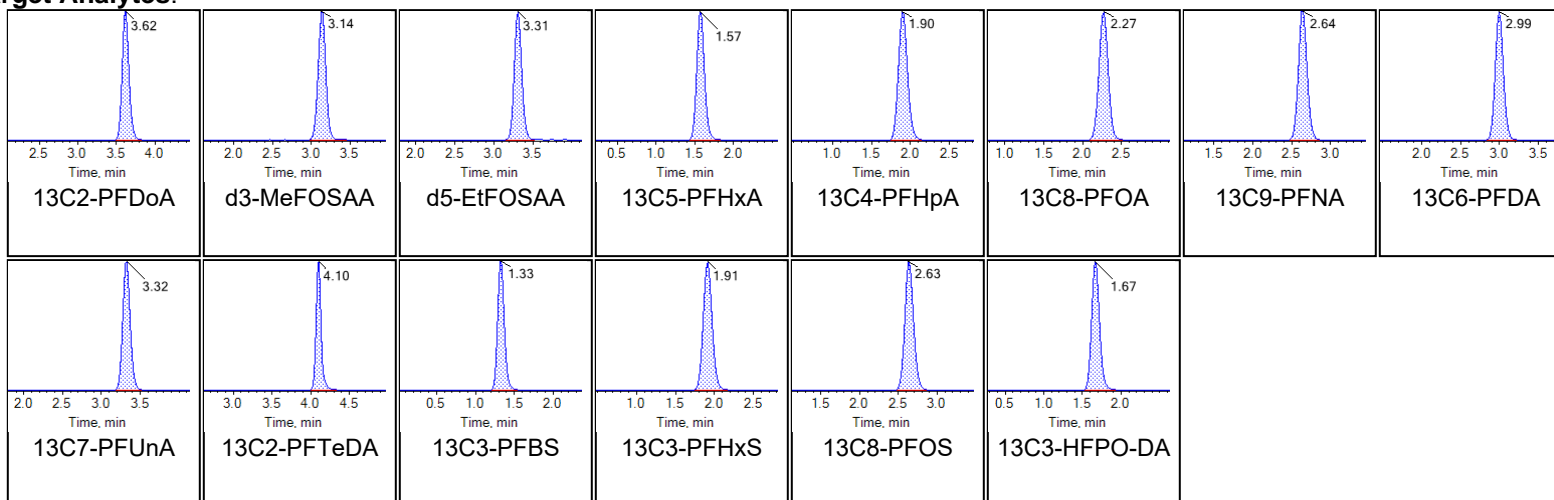
Internal Standards:



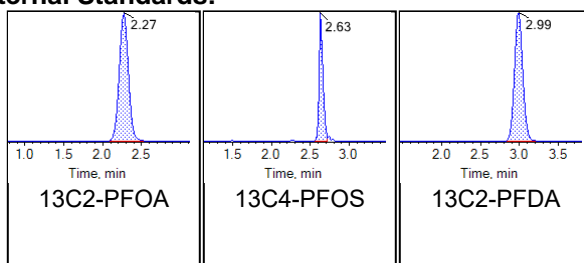
Sample Name	LE56	Injection Vial	6
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:49:18 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS

Chromatograms

Target Analytes:



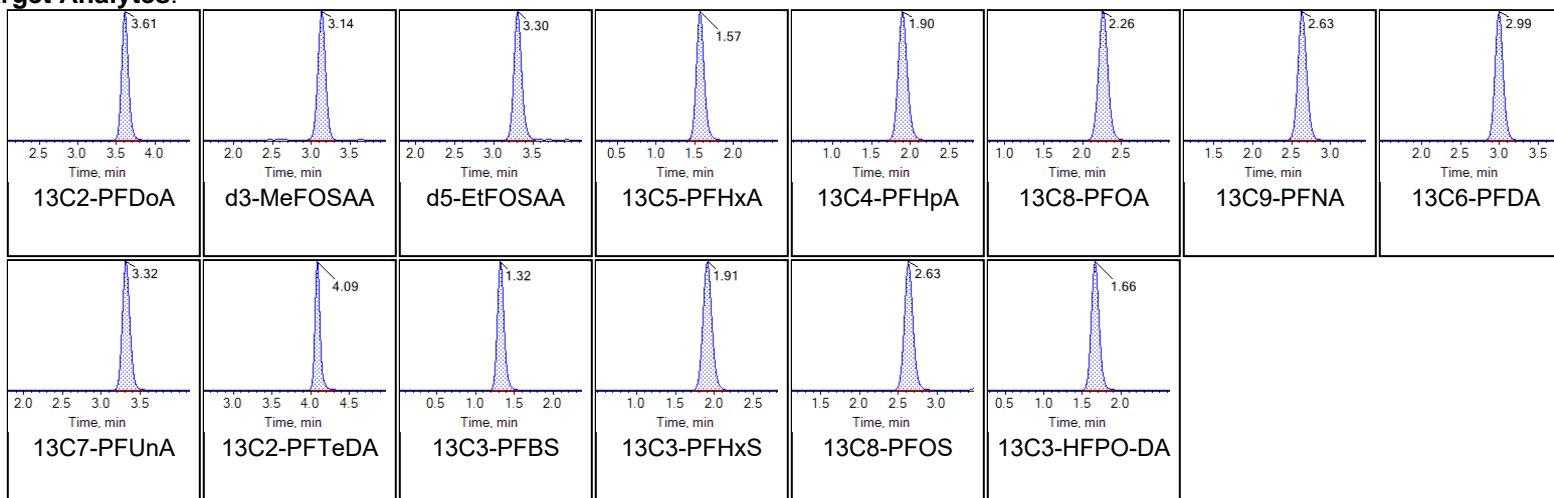
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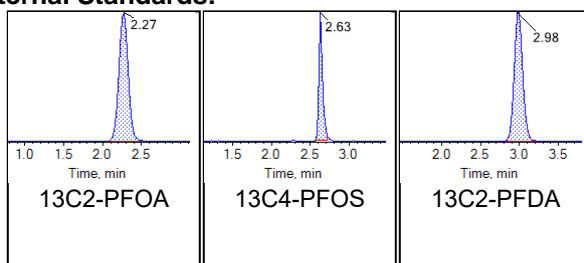
Sample Name	LE57	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 8:59:46 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS

Chromatograms

Target Analytes:



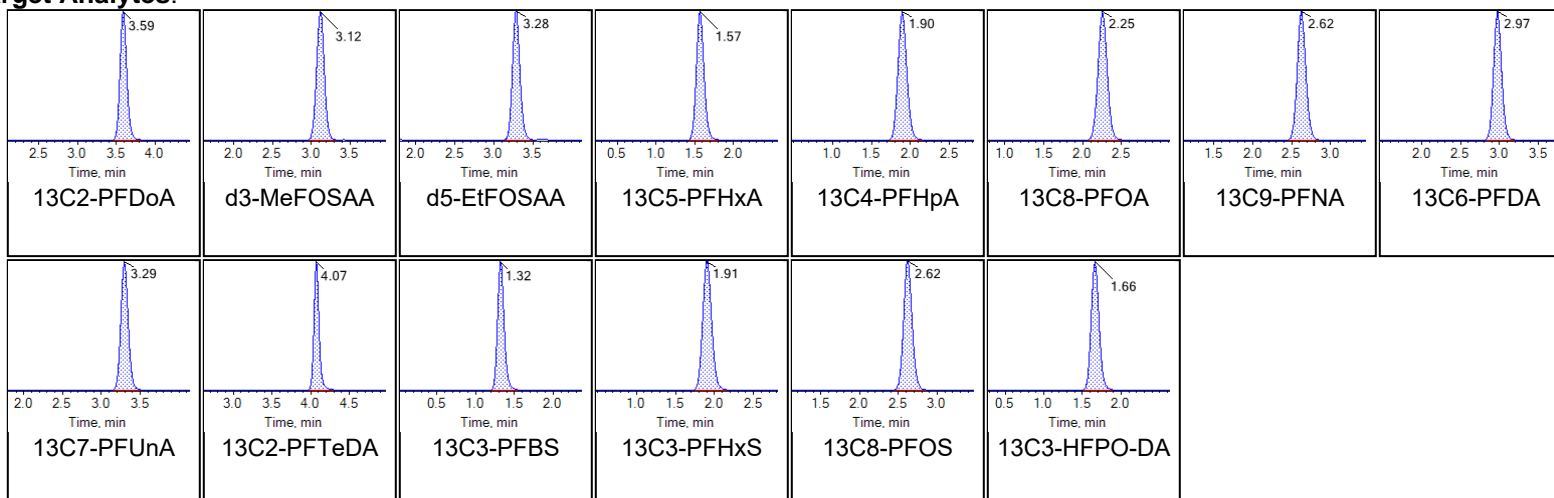
Internal Standards:



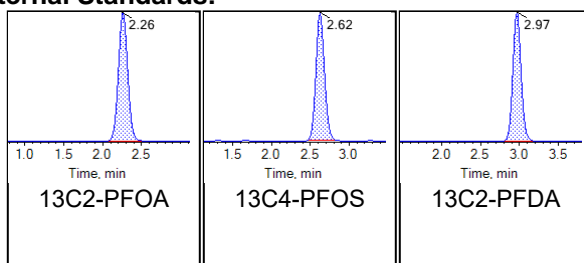
Sample Name	LE58 IB	Injection Vial	8
Sample ID	Instrument Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 9:10:14 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS

Chromatograms

Target Analytes:



Internal Standards:





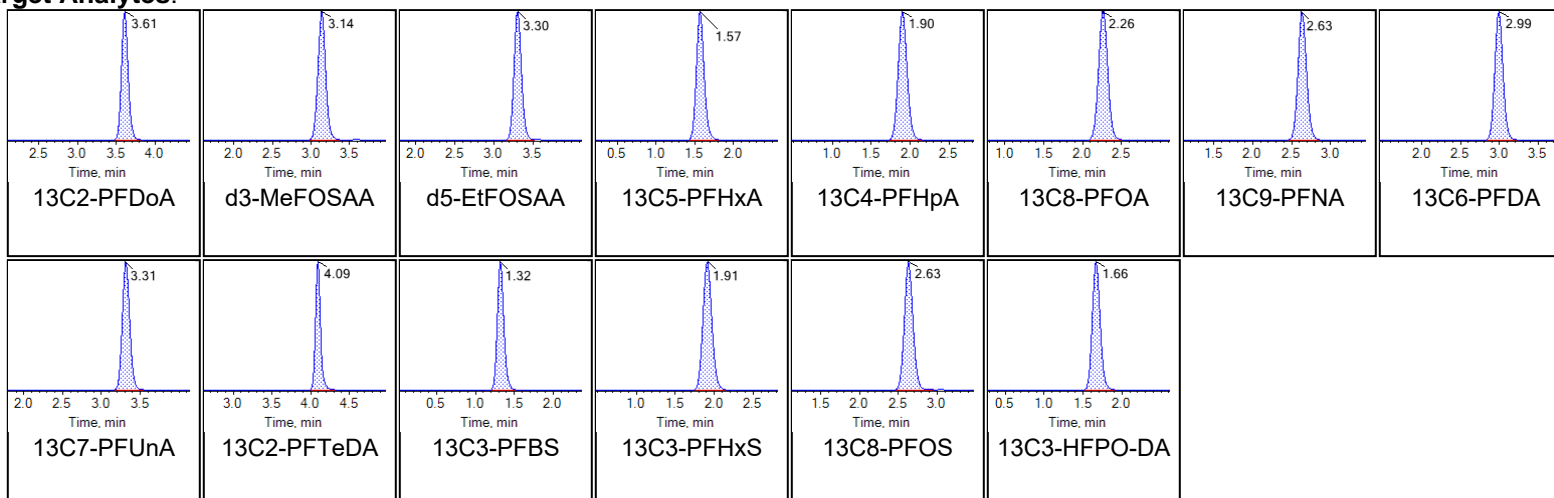
Chromatogram Report

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Printed: 17/11/2020 2:08:12 PM

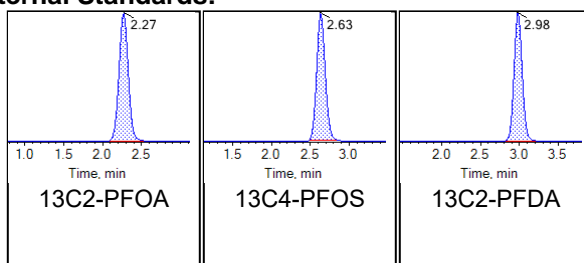
Sample Name	LE59 ICC	Injection Vial	9
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/16/2020 9:20:41 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS

Chromatograms

Target Analytes:



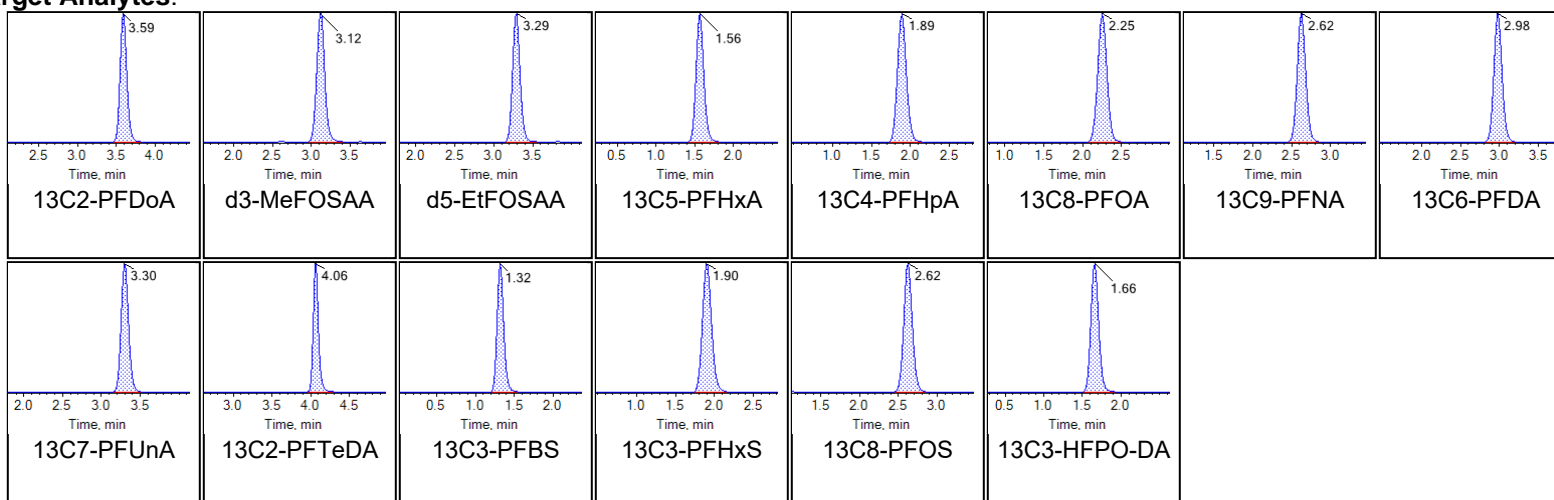
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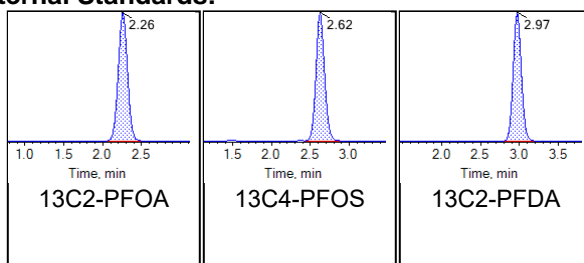
Sample Name	LE55 CCV	Injection Vial	32
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:00:30 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS

Chromatograms

Target Analytes:



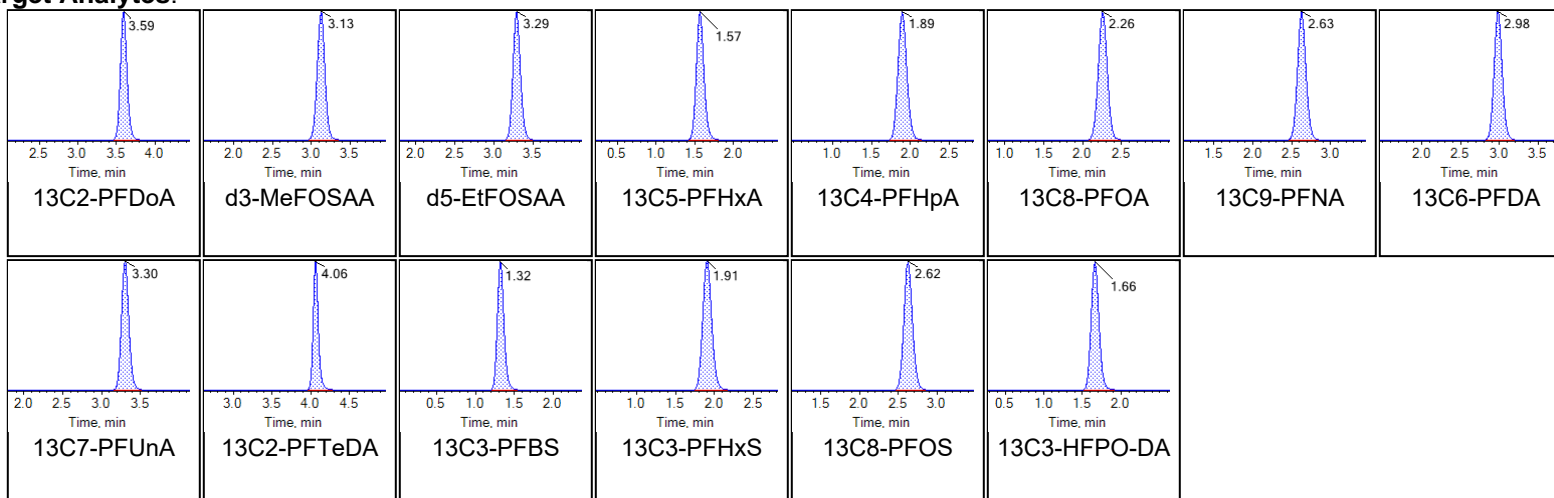
Internal Standards:



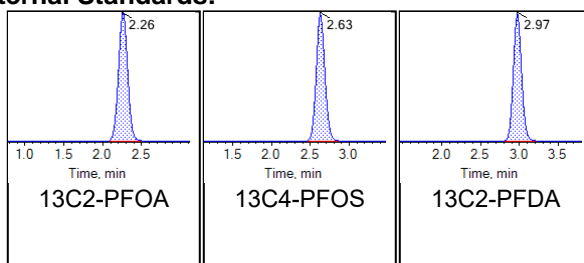
Sample Name	DB386PB-FS(0)	Injection Vial	2
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:21:28 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS

Chromatograms

Target Analytes:



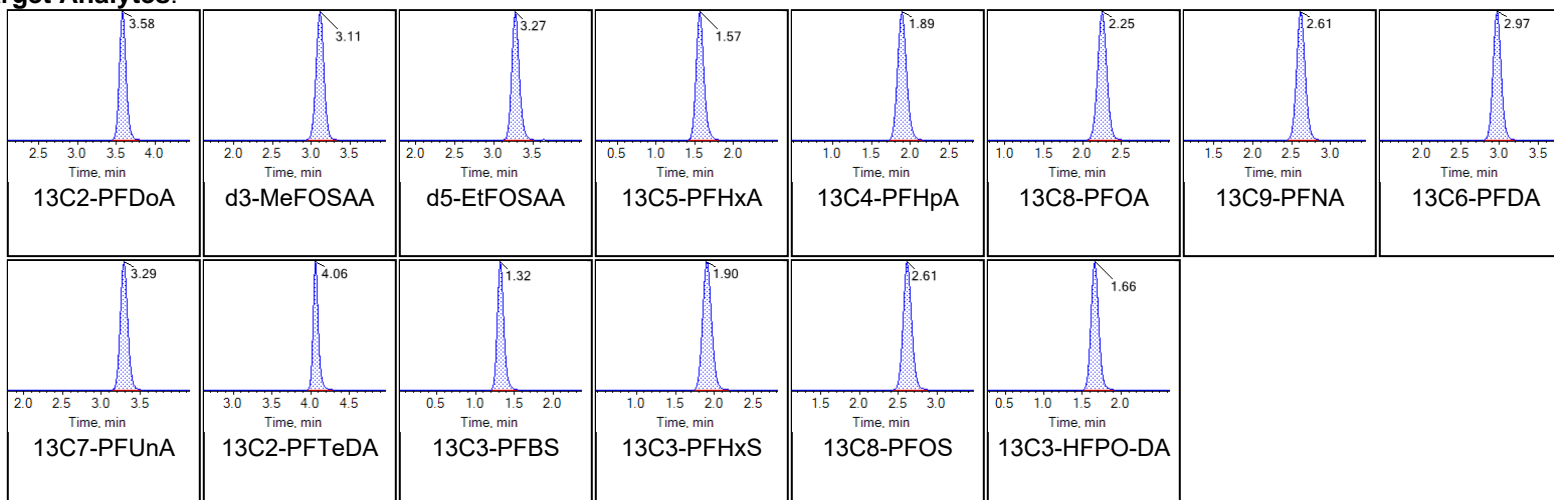
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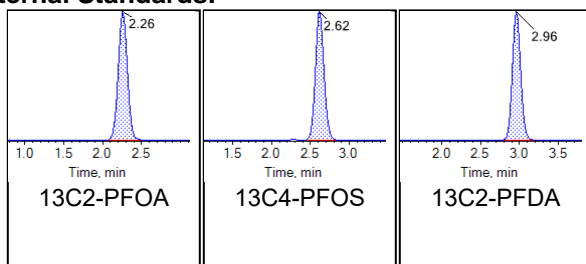
Sample Name	DB387LCS-FS(0)	Injection Vial	3
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:31:57 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS

Chromatograms

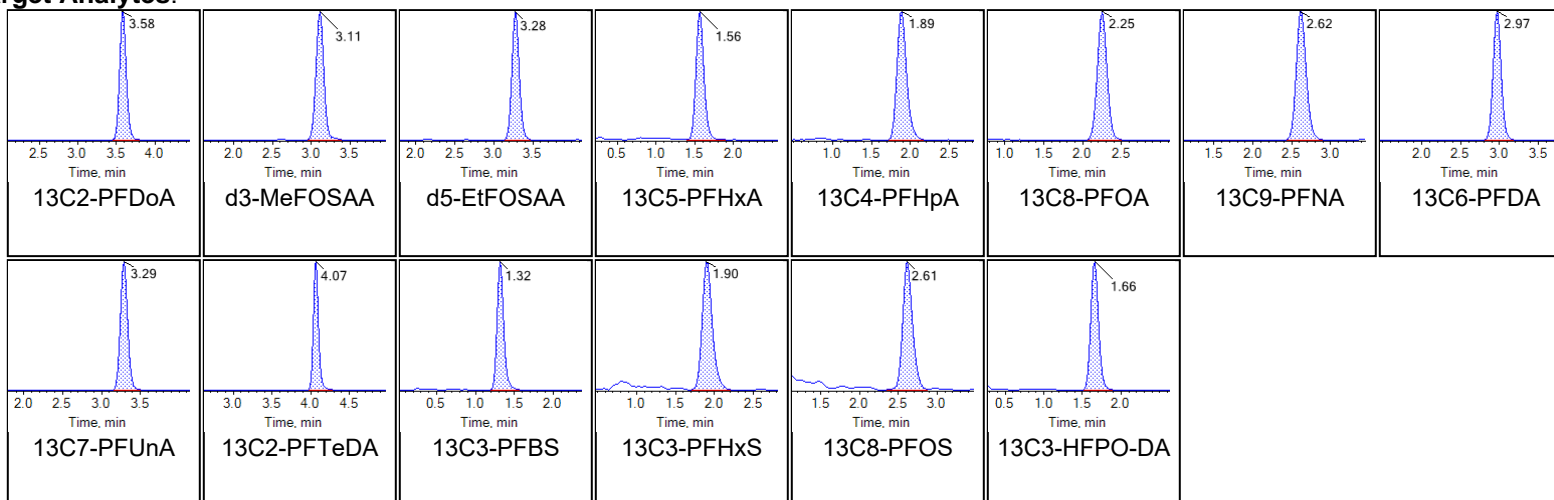
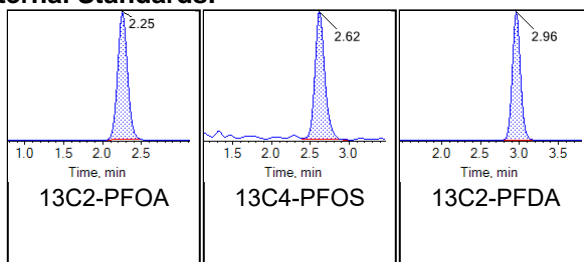
Target Analytes:



Internal Standards:



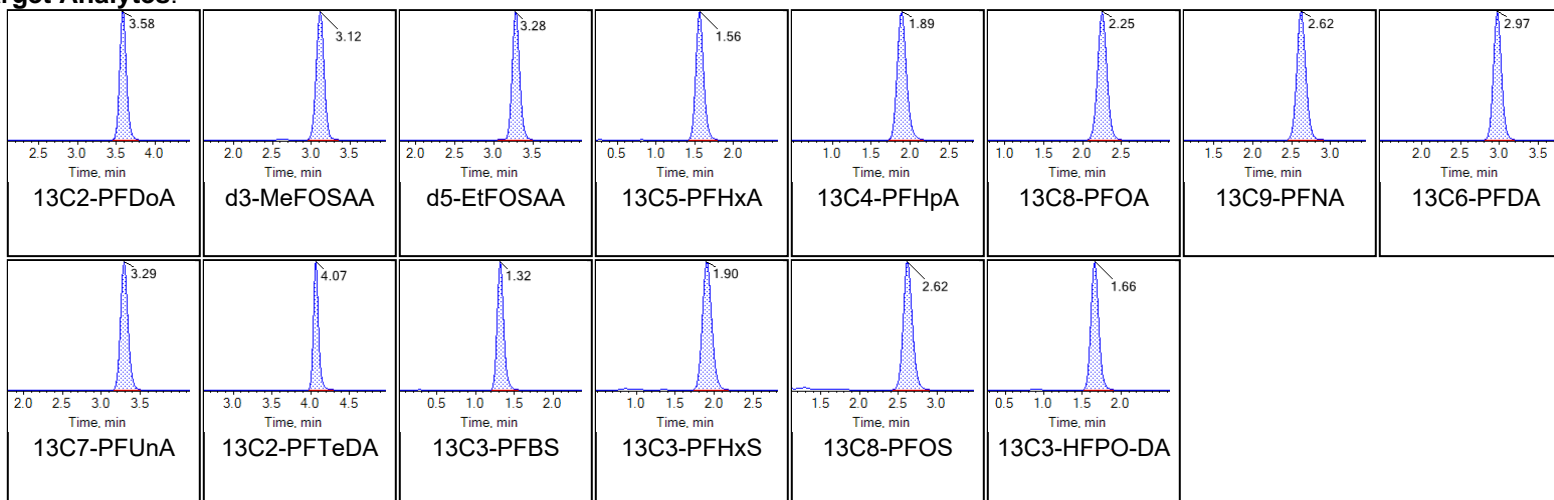
Sample Name	G1773-FS1(0)	Injection Vial	4
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:42:26 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS

Chromatograms**Target Analytes:****Internal Standards:**

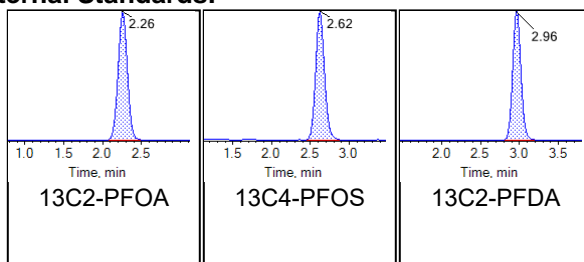
Sample Name	G1773-FS1-D(3)	Injection Vial	5
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 11:52:54 AM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS

Chromatograms

Target Analytes:



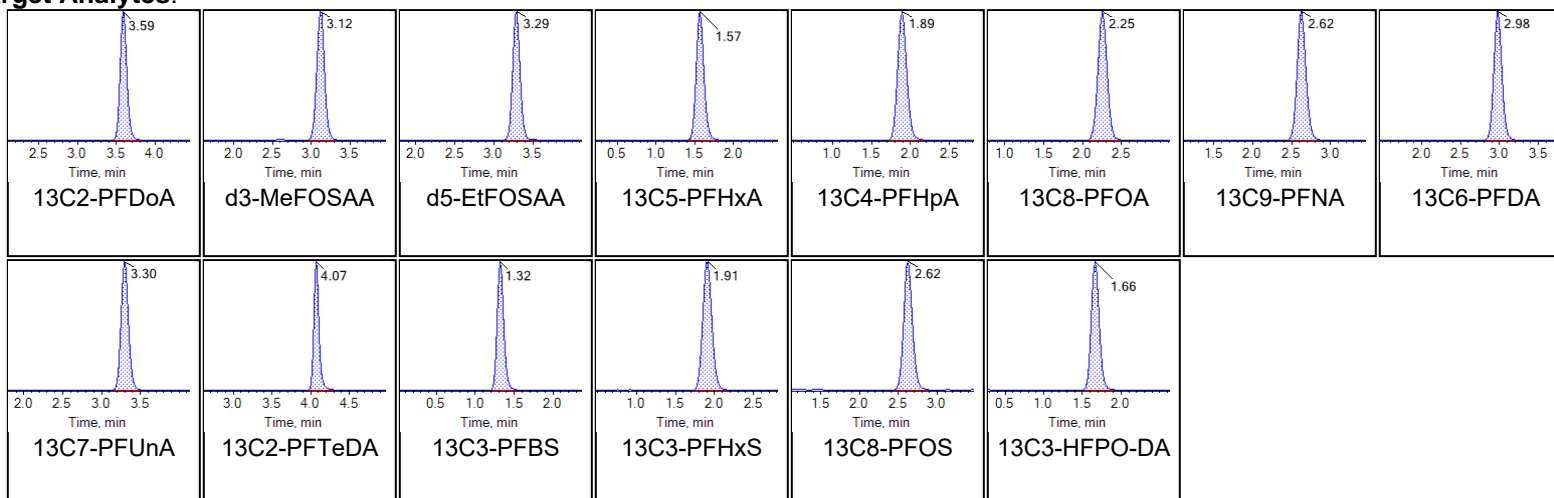
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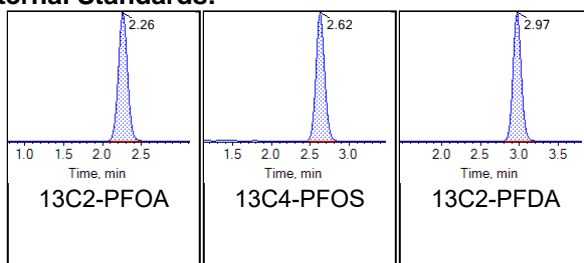
Sample Name	G1773-FS1-D(5)	Injection Vial	6
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:03:23 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS

Chromatograms

Target Analytes:



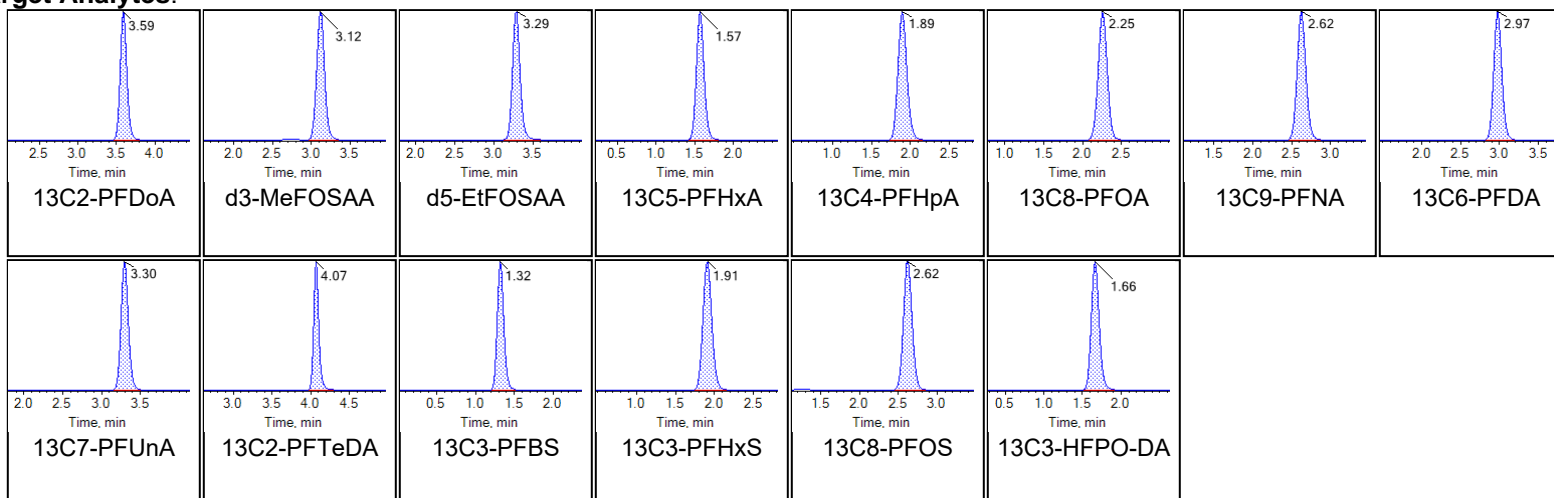
Internal Standards:



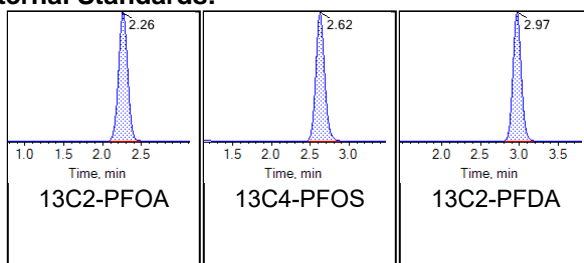
Sample Name	G1773-FS1-D(7)	Injection Vial	7
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:13:52 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS

Chromatograms

Target Analytes:



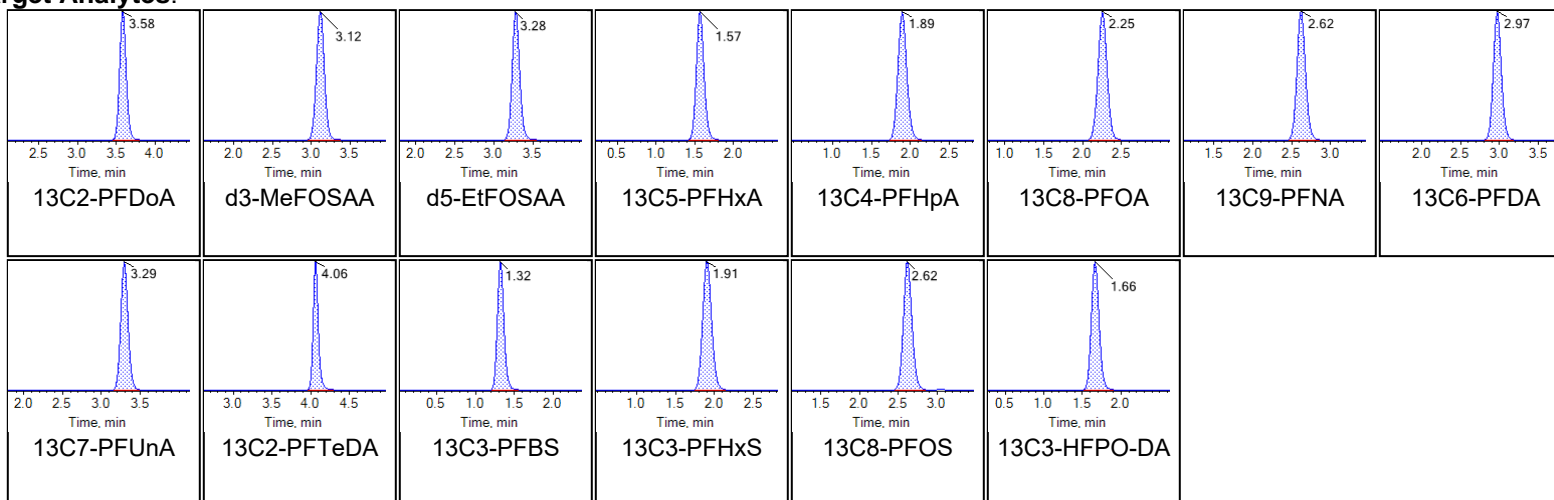
Internal Standards:



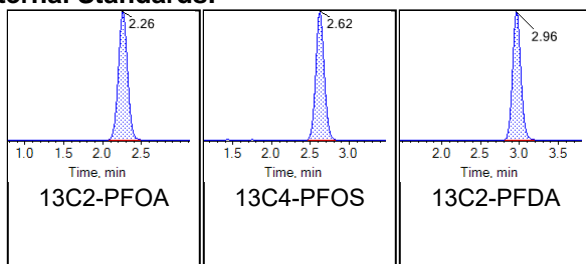
Sample Name	G1773-FS1-D(9)	Injection Vial	8
Sample ID	CBD-AOA-MW18-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:24:21 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481_SIS

Chromatograms

Target Analytes:



Internal Standards:





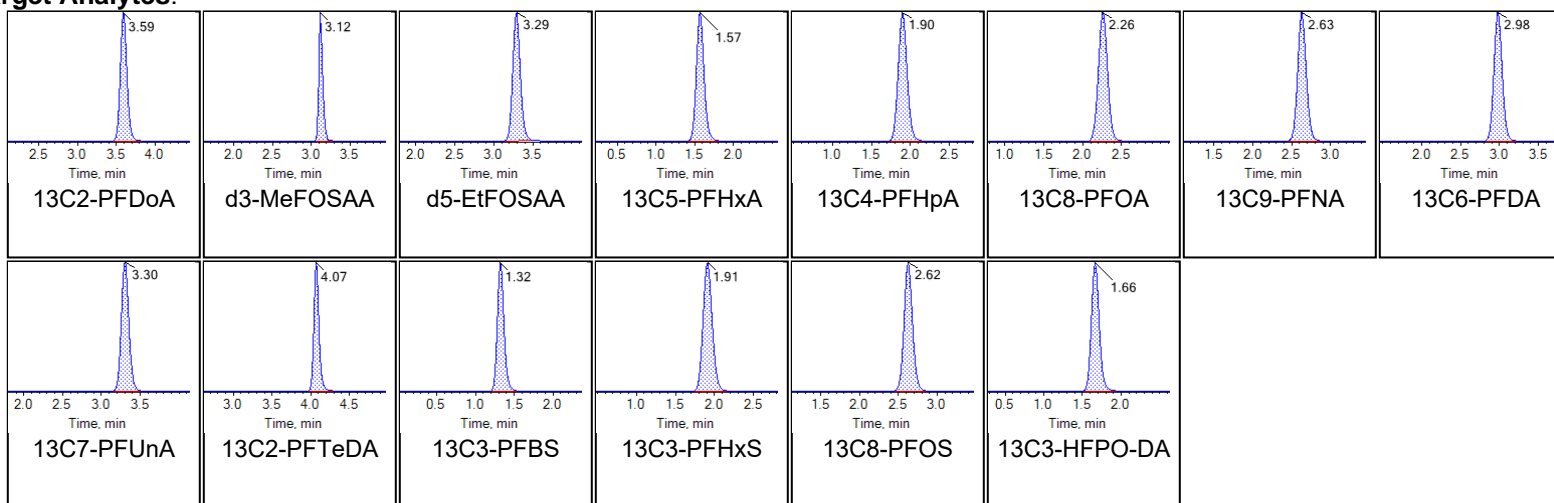
Chromatogram Report

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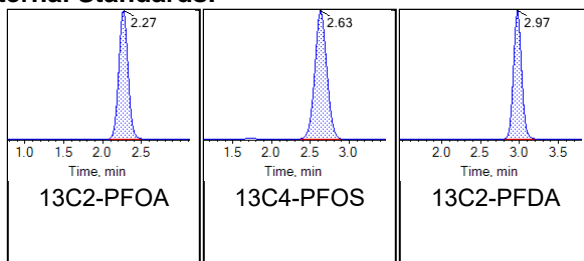
Sample Name	LE54 CCV	Injection Vial	9
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	Triple Quad 6500+ Low Mass
Acquisition Date	11/17/2020 12:34:49 PM	Data File	AE_11162020_5-369.wiff
Acquisition Method	5-369.dam	Result Table	20-1481 SIS

Chromatograms

Target Analytes:



Internal Standards:



Leachate_Date	Leachate_Time	Extraction_Date	Extraction_Time	Analysis_Date	Analysis_Time	Lab_Sample_ID	Dilution	Run_Number	PERCENT_MOISTURE	PERCENT_LIPID	Chem_Name	Analyte_ID	Analyte_Value	Original_Analyte_Value	Result_Units	Lab_Qualifier	Validator_Qualifier	Final_Flag
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			Perfluorohexanoic Acid (PFHxA)	307-244	1.44	1.44	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			Perfluoroheptanoic acid (PFHpA)	375-85-9	0.96	0.96	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			Perfluorooctanoic acid (PFOA)	335-67-1	1.44	1.44	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			Perfluorononanoic acid (PFNA)	375-95-1	0.96	0.96	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			Perfluorodecanoic Acid (PFDA)	335-76-2	0.48	0.48	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			Perfluoroundecanoic Acid (PFUnA)	2058-94-8	0.48	0.48	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			Perfluorododecanoic Acid (PFDoA)	307-55-1	0.48	0.48	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			Perfluorotridecanoic Acid (PFTeDA)	72629-94-8	0.48	0.48	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			Perfluorotetradecanoic Acid (PFTeDA)	376-06-7	1.92	1.92	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	2355-31-9	0.96	0.96	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	2991-50-6	0.96	0.96	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.48	0.48	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			Perfluorohexanesulfonic acid (PFHxS)	355-46-4	0.38	0.38	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1	0.96	0.96	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			Perfluoro-2-methyl-3-oxahexanoic acid (HFPO-DA)	13252-13-6	0.48	0.48	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			4,8-dioxo-3H-perfluorononanoic acid (ADONA)	919005-14-4	0.96	0.96	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			11-chloroicosafuoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	763051-92-9	0.96	0.96	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	0.48	0.48	NG L	U	U	U
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			13C5-PFHxA	BDO-2217	77	77	PCT REC			
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			13C4-PFHpA	BDO-2218	79	79	PCT REC			
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			13C8-PFOA	BDO-2219	88	88	PCT REC			
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			13C9-PFNA	BDO-2221	82	82	PCT REC			
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			13C6-PFDA	BDO-2222	83	83	PCT REC			
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			13C7-PFUaA	BDO-2223	86	86	PCT REC			
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			13C2-PFDoA	BDO-2112	91	91	PCT_REC			
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			13C2-PFTeDA	BDO-2224	85	85	PCT REC			
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			d3-MeFOSAA	BDO-1838	85	85	PCT REC			
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			d5-EtFOSAA	BDO-1839	95	95	PCT REC			
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			13C3-PFBS	BDO-2226	79	79	PCT REC			
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			13C3-PFHxS	BDO-2227	90	90	PCT REC			
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			13C8-PFOS	BDO-2228	83	83	PCT_REC			
		20201116	11:45:00	20201117	11:21:28	DB386PB-FS	1	1			13C3-HFPO-DA	BDO-2276	68	68	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			Perfluorohexanoic Acid (PFHxA)	307-244	91	91	PCT REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			Perfluoroheptanoic acid (PFHpA)	375-85-9	88	88	PCT REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			Perfluorooctanoic acid (PFOA)	335-67-1	87	87	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			Perfluorononanoic acid (PFNA)	375-95-1	87	87	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			Perfluorodecanoic Acid (PFDA)	335-76-2	91	91	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			Perfluoroundecanoic Acid (PFUnA)	2058-94-8	86	86	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			Perfluorododecanoic Acid (PFDoA)	307-55-1	90	90	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			Perfluorotridecanoic Acid (PFTeDA)	72629-94-8	103	103	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			Perfluorotetradecanoic Acid (PFTeDA)	376-06-7	95	95	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	2355-31-9	90	90	PCT REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	2991-50-6	80	80	PCT REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5	98	98	PCT REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			Perfluorohexanesulfonic acid (PFHxS)	355-46-4	96	96	PCT REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1	81	81	PCT REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			Perfluoro-2-methyl-3-oxahexanoic acid (HFPO-DA)	13252-13-6	92	92	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			4,8-dioxo-3H-perfluorononanoic acid (ADONA)	919005-14-4	83	83	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			11-chloroicosafuoro-3-oxaundecane-1-sulfonic acid (11CI-PF3OUdS)	763051-92-9	75	75	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	71	71	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			13C5-PFHxA	BDO-2217	71	71	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			13C4-PFHpA	BDO-2218	78	78	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			13C8-PFOA	BDO-2219	81	81	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			13C9-PFNA	BDO-2221	73	73	PCT REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			13C6-PFDA	BDO-2222	95	95	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			13C7-PFUaA	BDO-2223	96	96	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			13C2-PFDoA	BDO-2112	97	97	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			13C2-PFTeDA	BDO-2224	88	88	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			d3-MeFOSAA	BDO-1838	79	79	PCT REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			d5-EtFOSAA	BDO-1839	88	88	PCT REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			13C3-PFBS	BDO-2226	92	92	PCT REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			13C3-PFHxS	BDO-2227	84	84	PCT_REC			
		20201116	11:45:00	20201117	11:31:57	DB387LCS-FS	1	1			13C8-PFOS	BDO-2228	91	91	PCT_REC			
		20201116	11:45:00	20201117	12:09:23	DB387LCS-FS	1	6			13C3-HFPO-DA	BDO-2276	76	76	PCT_REC			
		20201116	11:45:00	20201117	12:09:23	G1773-FS1	12.5	6			Perfluorohexanoic Acid (PFHxA)	307-244	717	717	NG L	TD	Exclude	Exclude
		20201116	11:45:00	20201117	12:09:23	G1773-FS1	5	4			Perfluoroheptanoic acid (PFHpA)	375-85-9	435	435	NG L	TD	Exclude	Exclude
		20201116	11:45:00	20201117	12:13:52	G1773-FS1	31.25	7			Perfluorooctanoic acid (PFOA)	335-67-1	1130	1130	NG L	TD	Exclude	Exclude
		20201116	11:45:00	20201117	12:13:52	G1773-FS1	5	4			Perfluorononanoic acid (PFNA)	375-95-1	622	622	NG L	TD	Exclude	Exclude
		20201116	11:45:00	20201117	12:13:52	G1773-FS1	1	2			Perfluorodecanoic Acid (PFDA)	335-76-2	8.34	8.34	NG L	T	Exclude	Exclude
		20201116	11:45:00	20201117	12:13:52	G1773-FS1	1	2			Perfluoroundecanoic Acid (PFUnA)	2058-94-8	26.2	26.2	NG L	UT	Exclude	Exclude
		20201116	11:45:00	20201117	12:13:52	G1773-FS1	1	2			Perfluorododecanoic Acid (PFDoA)	307-55-1	0.52	0.52	NG L	UT	Exclude	Exclude
		20201116	11:45:00	20201117	12:13:52	G1773-FS1	1	2			Perfluorotridecanoic Acid (PFTeDA)	72629-94-8	0.52	0.52	NG L	UT	Exclude	Exclude
		20201116	11:45:00	20201117	12:13:52	G1773-FS1	1	2			Perfluorotetradecanoic Acid (PFTeDA)	376-06-7	2.08	2.08	NG L	UT	Exclude	Exclude
		20201116	11:45:00	20201117	12:13:52	G1773-FS1	1	2			N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	2355-31-9	0.36	0.36	NG L	JT	Exclude	Exclude
		20201116	11:45:00	20201117	12:13:52	G1773-FS1	1	2			N-Ethyl Perfluoroo							

**DATA VALIDATION SUMMARY REPORT
NAVAL RESEARCH LABORATORY, MARYLAND**

Client: CH2M HILL, Inc., Herndon, Virginia
SDG: 20-1481
Laboratory: Battelle Norwell Operations, Norwell, Massachusetts
Site: Naval Research Laboratory (NRL), Chesapeake Beach, Maryland
Date: January 11, 2021

PFAS			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	CBD-AOA-MW18-1020	G1773-FS1	Water

A Stage 2B/4 data validation was performed on the analytical data for one water sample collected on October 19, 2020 by CH2M HILL at the Naval Research Laboratory Site 10 Fire Testing Area in Maryland. The samples were analyzed under the Analysis of Poly and Perfluoroalkyl Substances in Environmental Samples by Liquid Chromatography and Tandem Mass Spectrometry (LC-MS/MS).

Specific method references are as follows:

Analysis
PFAS

Method References
Battelle SOP 5-369-08

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods, the Final Sampling and Analysis Plan Site 10 Fire Testing Area Site Inspection, Naval Research Laboratory, August 2020, and the DoD Final General Data Validation Guidelines, November 2019, including the following Module:

- The Department of Defense (DoD) Data Validation Guidelines Module 3, Data Validation Procedure for Per- and Polyfluoroalkyl Substances Analysis by Quality Systems Manual for Environmental Laboratories (QSM) Table B-15, May 2020;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

Organics

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries

- Laboratory Fortified Blank (LFB)
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Stage 2B/4) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

Data Usability Assessment

There were no rejections of data.

The data are acceptable for the intended purposes as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedances of QC criteria.

Per- and Polyfluoroalkyl Substances (PFAS)

Data Completeness, Case Narrative & Custody Documentation

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

Holding Times

- The sample was extracted outside the 14-day holding time at 28 days. The sample was qualified as estimated (J/UJ).

LC/MS Tuning

- All criteria were met.

Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

Continuing Calibration

- All percent recovery (%R) criteria were met.

Method Blank

- The method blanks were free of contamination.

Field QC Blank

- Field QC results are summarized below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
CBD-AOA-EB01-101920-GW	PFOS	0.449	None	Sample >10X
CBD-AOA-FB05-102020	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate percent recoveries (%R).

Laboratory Fortified Blank (LFB)

- The LFB samples exhibited acceptable percent recoveries (%R).

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- MS/MSD samples were not analyzed.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Target Compound Identification

- All mass spectra and quantitation criteria were met.

Compound Quantitation

- The sample was re-extracted outside of holding times from SDG 20-1321 to verify surrogate recovery deficiencies. Use the original analysis results in SDG 20-1321 for reporting purposes.

Field Duplicate Sample Precision

- Field duplicate samples were not collected.

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver
Nancy Weaver
Senior Chemist

Dated: 2/12/21

Qualifier	Definition
U	The analyte was not detected and was reported as less than the LOD or as defined by the customer. The LOD has been adjusted for any dilution or concentration of the sample.
J	The reported result was an estimated value with an unknown bias.
J+	The result was an estimated quantity, but the result may be biased high.
J-	The result was an estimated quantity, but the result may be biased low.
N	The analysis indicates the presence of an analyte for which there was presumptive evidence to make a "tentative identification."
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value was the estimated concentration in the sample.
UJ	The analyte was not detected and was reported as less than the LOD or as defined by the customer. However, the associated numerical value is approximate.
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.



Project Client: CH2M
 Project Name: CTO-4532: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10
 Project No.: 100142218

Client ID: CBD-AOA-MW18-1020

Battelle ID: G1773-FS1
 Sample Type: SA
 Collection Date: 10/19/2020
 Extraction Date: 11/16/2020
 Analytical Instrument: Sciex 6500+ (AE) LC/MS/MS
 % Moisture: NA
 Matrix: GW
 Sample Size: 0.240
 Size Unit-Basis: L

Use original results in 20-1321

Analyte	CAS No.	Result (ng/L)	DF	Extract ID	DF	Analysis Date	DL	LOD	LOQ
PFHxA	307-24-4	717 TD	J	G1773-FS1-D(5)	12.500	11/17/2020	6.86	19.5	65.1
PFHpA	375-85-9	435 TD	J	G1773-FS1-D(3)	5.000	11/17/2020	1.37	5.21	26.0
PFOA	335-67-1	1130 TD	J	G1773-FS1-D(7)	31.250	11/17/2020	16.6	48.8	163
PFNA	375-95-1	622 TD	J	G1773-FS1-D(3)	5.000	11/17/2020	1.61	5.21	26.0
PFDA	335-76-2	8.34 T	J	G1773-FS1(0)	1.000	11/17/2020	0.148	0.521	5.21
PFUnA	2058-94-8	26.2 T	J	G1773-FS1(0)	1.000	11/17/2020	0.228	0.521	5.21
PFOa	307-55-1	0.521 UT	UJ	G1773-FS1(0)	1.000	11/17/2020	0.200	0.521	5.21
PFTrDA	72629-94-8	0.521 UT	J	G1773-FS1(0)	1.000	11/17/2020	0.160	0.521	5.21
PFTeDA	376-06-7	2.08 UT	J	G1773-FS1(0)	1.000	11/17/2020	0.764	2.08	5.21
NMeFOSAA	2355-31-9	0.369 JT	J	G1773-FS1(0)	1.000	11/17/2020	0.365	1.04	5.21
NEtFOSAA	2991-50-6	1.04 UT	UJ	G1773-FS1(0)	1.000	11/17/2020	0.521	1.04	5.21
PFBS	375-73-5	65.7 T	J	G1773-FS1(0)	1.000	11/17/2020	0.150	0.521	5.21
PFHxS	355-46-4	2600 TD	J	G1773-FS1-D(9)	156.250	11/17/2020	18.2	65.1	814
PFOS	1763-23-1	4250 TD	J	G1773-FS1-D(9)	156.250	11/17/2020	71.1	163	814
HFPO-DA	13252-13-6	0.521 UT	UJ	G1773-FS1(0)	1.000	11/17/2020	0.258	0.521	5.21
Adona	919005-14-4	1.04 UT	J	G1773-FS1(0)	1.000	11/17/2020	0.276	1.04	5.21
9CI-PF3ONS	756426-58-1	0.521 UT	J	G1773-FS1(0)	1.000	11/17/2020	0.279	0.521	5.21
11CI-PF3OUdS	763051-92-9	1.04 UT	J	G1773-FS1(0)	1.000	11/17/2020	0.241	1.04	5.21

HT

MW 11/11/21

LOCATION_NAME	SITE_NAME	INSTALLATION_ID	LOCATION_TYPE	LOCATION_TYPE_DESCRIPTION	SDG	COORD_X	COORD_Y	ANALYTICAL_METHOD_GRP_DESC	SAMPLE_NAME	SAMPLE_MATRIX	SAMPLE_MATRIX_DESC	COLLECT_DATE
CBD-AOA-MW18	SITE 00010	CHESAPEAKE_BEACH_NRL	WLM	Monitoring well	20-1481	1445727.86	362263.42	Perfluoroalkyl Compounds	CBD-AOA-MW18-1020	WG	Ground water	19-Oct-20