



**Groundwater Sample Results,
Level 4 Laboratory Report, Electronic Data
Deliverable, Data Validation Report, Sample Location
Report, SDG 20-1455**

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 20-1455

Package DP-20-1335

Submitted to:

CH2M

5701 Cleveland Street

Virginia Beach, VA 23462 USA

Submitted by:

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

BATTELLE

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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 20-1455
Package DP-20-1335**

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 Lauren
Griffith
Date: 2020.11.12 16:06:53
-05'00'

QC Chemist Approval:



Digitally signed by Carla Devine
Date: 2020.11.16 10:32:57 -05'00'

Project Manager Approval:



Digitally signed by Jonathan Thorn
Date: 2020.11.16 10:47:24 -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 20-1455


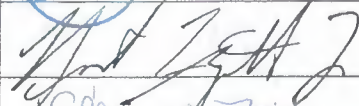






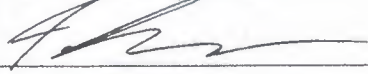





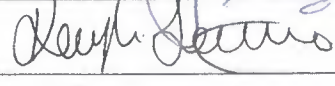
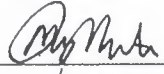
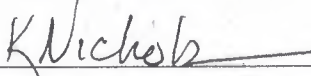

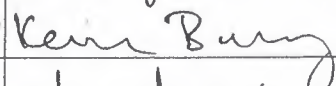
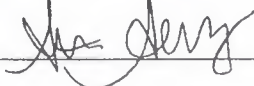
Package DP-20-1335

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.	22
3	<i>Miscellaneous Documentation</i> Case Narrative, Miscellaneous Documentation Form, Quality Control Summary, Example Calculations, Internal Standard Recovery Report, Retention Time Window Report.	36
4	<i>Sample Preparation Records</i> Sample Preparation Records, Dilution Worksheets, Standard Preparation Records, Certificates Of Analysis, GPC Check Report.	161
5	<i>Analytical Calibrations</i> Analytical Sequence, Analytical Method, Tune Report, Initial Calibration, Pesticide Degradation Report, RF Summary, Calibration Verifications, Independent Calibration Verification Check.	176
6	<i>Analytical Data</i> Raw Data Quantification Reports.	258
7	<i>Chromatograms</i> Sample And Standard Chromatograms.	275
8	<i>Unused Data</i>	N/A



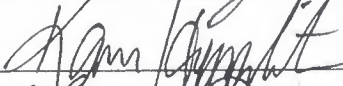

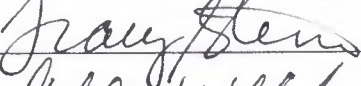
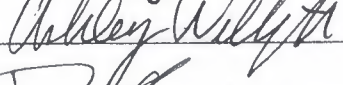
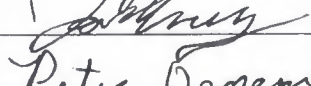
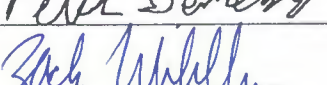
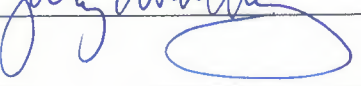
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Master Signature Page

Name (Printed)	Signature	Initials	Date
Jonathan Thom		JRT	1/9/2020
Robert Lizotte, Jr.		BL	1.9.2020
Elynn M. Fitch		EF	1/9/2020
Carla Devine		CRD	1/9/2020
Dennis Schumitz		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: 20-1455
Project/Site: NRL Chesapeake Bay Detachment (NRL-CBD) Site 10
CTO: 4532

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Receipt Date
DB332PB-FS	Procedural Blank	WATER	11/10/2020	11/10/2020
DB333LCS-FS	Laboratory Control Sample	WATER	11/10/2020	11/10/2020
G1707-FS1	CBD-AOA-MW15-1020	GW	10/16/2020	10/17/2020
G1708-FS1	CBD-AOA-MW16-1020	GW	10/16/2020	10/17/2020

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



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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.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Target is less than 5 times the Original	n	
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.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Target is less than 5 times the Original	n	
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).	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Target is less than 5 times the MDL	n	
Analytical Duplicate Precision	Organics results less than 30% Relative Percent Difference (RPD). Analyte concentration must be > 5x MDL.	N	Review with Project Manager; re-analyze or justify reporting results in the project records.
	Organics Results in the Original is less than 5 times the MDL	n	



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.

Sample Receipt Form

Approved: Authorized

Project Number: _____ Client: Jacobs
Received by: Schumitz, Matt Date/Time Received: Saturday, October 17, 2020 11:00 AM
No. of Shipping Containers: 1

SHIPMENT

Method of Delivery: Commercial Carrier Tracking Number: Fed Ex
COC 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 1464 1419	Custody Seals	Intact	Intact	Therm_1	1.1	3

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): 1.1 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: Yes No Unknown /Lot No.: Unknown

Storage Location: Custody: Refrigerator - R0119 (NA) BDO IDs Assigned: G1707 - G1709
Samples logged in by: Schumitz, Matt Date/Time: 10/17/2020 11:00 AM
Approved By: _____ Approved On: _____
Authorized By: _____ Authorized On: _____

Report Corrective Actions

Corrective Action No: 1 of 1

Authorized Approved:

COC Client: Jacobs

COC Project: Site 10 SI

COC Date: 10/19/2020 9:23:00 AM

	Description of Problem:	Explanation:
Client Id	Extra samples not listed on the C-O-C	Sample CBD-AOA-MW16-1020 lists 2 under number of containers but there were 6 in the cooler. The other 4 bottles were listed as MS and MSD's

Documentation of project manager notification

Sample Custodian: Schumitz, Matt Date: 10/19/2020 9:27:00 A

Laboratory Manager: Thorn, Jonathan Date: 11/10/2020 9:02:00 A

Project Manager: Thorn, Jonathan Date: 11/10/2020 9:02:00 A

Documentation of client notification (should be completed by project manager within 24 hrs):

On 19-Oct-20 I contacted Zamboni, Michael at CH2M

Results of communication with client (Describe any corrective action directed by the client):

See attached email

Date this form was received back to the custodian: _____

Reference Number: _____

From: [Zamboni, Michael/WDC](#)
To: [Thorn, Jonathan R](#); [Dronfield, Caitlin/WDC](#); [Schumitz, Denise M](#)
Cc: [Lampshire, Laura/WDC](#); [Schumitz, Matthew](#); [Zamboni, Michael/WDC](#)
Subject: RE: CTO-4532 sample receipt 10/19/2020
Date: Monday, October 19, 2020 4:04:13 PM

Message received from outside the Battelle network. Carefully examine it before you open any links or attachments.

Thanks, Jon. That MS/MSD was in the project instructions and it sounds like we collected it. I think we just forgot to mark the CoC, no problem.

Thanks,
Mike Z.

From: Thorn, Jonathan R <thorn@battelle.org>
Sent: Monday, October 19, 2020 1:06 PM
To: Zamboni, Michael/WDC <Michael.Zamboni@jacobs.com>; Dronfield, Caitlin/WDC <Caitlin.Dronfield@jacobs.com>; Schumitz, Denise M <SchumitzD@battelle.org>
Cc: Lampshire, Laura/WDC <Laura.Lampshire@jacobs.com>; Schumitz, Matthew <SCHUMITZM@battelle.org>
Subject: [EXTERNAL] CTO-4532 sample receipt 10/19/2020

Hi Mike,
The attached custody records are for the samples received Saturday, in good condition.

One minor corrective action, sample CBD-AOA-MW16-1020 is listed as having two containers, however, six were received, with four bottles marked as MS and MSDs. We are processing these as the MS/MSD, no need to respond unless you do not want these as the MS/MSD.

The table below includes SDG and delivery information.

SDG	Due Date
20-1310	11/16/2020 (28-day TAT)

Best Regards,
Jon

Jonathan Thorn

Laboratory Director
Analytical Chemistry Services
Office: 781.681.5565 | Mobile: 781.710.9664 | Fax: 614.458.6917
thorn@battelle.org

Battelle

141 Longwater Drive
Suite 202
Norwell, MA 02061
<http://www.battelle.org>



It can be done

ShpNo SHP-201019-01

Battelle Project No: 100142218

Sample Receipt Form Details

Approved: Authorized


Project Number: _____ Client: Jacobs

Received by: Schumitz, Matt Date/Time Received: Saturday, October 17, 2020 11:00 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:
G1707	CBD-AOA-MW15-1020	10/16/20 10:40	10/19/20 9:25	2	GW	1.1	NA	NA	NA	R0119 (NA)			
G1708	CBD-AOA-MW16-1020	10/16/20 12:05	10/19/20 9:25	6	GW	1.1	NA	NA	NA	R0119 (NA)			MS/MSD
G1709	CBD-FB04-101620	10/16/20 12:10	10/19/20 9:25	2	AQ	1.1	NA	NA	NA	R0119 (NA)			

Total Samples: 3

 It can be done		Chain-of-Custody									
Client Contact Information Mike Zamboni michael.zamboni@jacobs.com CH2M/Jacobs		Project Manager: Sampler Information (print name): <i>Cartlin Dronfield</i> Phone: <i>703 376 5397</i> Email: <i>cartlin.dronfield@jacobs.com</i> Turnaround Time (TAT) Requested: <i>com</i>			Sampling Site: <i>Site 10 (FTA)</i>		Site Information: <i>NRL CBD</i>				
Project Name: <i>Site 10 SI</i> Project No.:		Normal <input checked="" type="checkbox"/> Priority <input type="checkbox"/> RUSH <input type="checkbox"/> Time Zone: <i>ET</i>			Preservative:		COC #				
Sample Identification (M)		Sample Date	Sample Time	Sample Type	Matrix	Total # of Cont.	Analysis: <i>PEAS</i>		Page# <i>1 of 1</i>		
<i>CBD-AOA-WW15-1020</i>		<i>10/16/20</i>	<i>1040</i>	<i>Grab</i>	<i>GW</i>	<i>2</i>	<i>X</i>	<i>61707</i>			
<i>CBD-AOA-WW16-1020</i>		<i>↓</i>	<i>1205</i>	<i>↓</i>	<i>GW</i>	<i>2</i>	<i>X</i>	<i>61708</i>			
<i>CBD-FB04-101620</i>		<i>↓</i>	<i>1210</i>	<i>↓</i>	<i>AQ</i>	<i>2</i>	<i>X</i>	<i>61709</i>	<i>Field Blank - GW</i>		
Receipt Temperature: (°C)		Samples Intact: Yes - No			Samples on Ice: Yes - No			Receipt Comments:			
Relinquished by (Print/Sign) <i>Cartlin Dronfield</i>		Company: <i>CH2M Jacobs</i>		Date/Time: <i>10/16/20 1700</i>		Received by (Print/Sign) <i>[Signature]</i>		Company: <i>BNO</i>		Date/Time: <i>10-17-20 1100</i>	
Relinquished by (Print/Sign)		Company:		Date/Time:		Received by (Print/Sign)		Company:		Date/Time:	
Relinquished by (Print/Sign)		Company:		Date/Time:		Received by (Print/Sign)		Company:		Date/Time:	
Comments:											

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

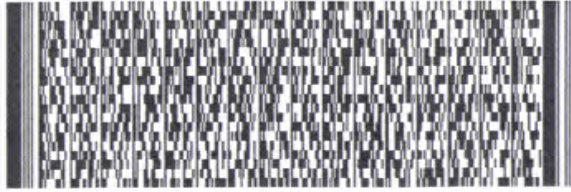
SHIP DATE: 16OCT20
ACTWGT: 50.00 LB
CAD: 103931050/NET4280
DIMS: 16x24x18 IN
BILL THIRD PARTY

TO **MATT SCHUMITZ**
BATTELLE
29 NICKERSON ST.

PLYMOUTH MA 02360

(781) 681-5565 REF. 706207/CH/FIFS
INV DEPT.
PO

56BLJ2/A27E1B766



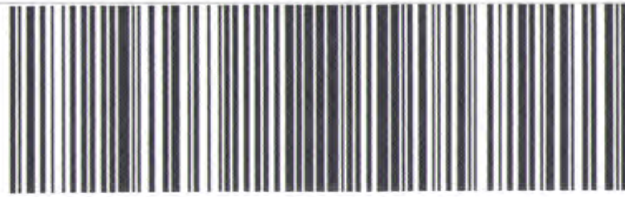
REL#
3785346

SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK#
0201 7718 1464 1419

X0 UWAA

02360
MA-US BOS



Therm!
1.10

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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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-MW15-1020

Battelle ID G1707-FS1
 Sample Type SA
 Collection Date 10/16/2020
 Extraction Date 11/10/2020
 Analytical Instrument Sciex 5500 (AC) LC/MS/MS
 % Moisture NA
 Matrix GW
 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	186 TD	G1707-FS1-D(5)	12.500	11/12/2020	6.33	18.0	60.1
PFHpA	375-85-9	110 TD	G1707-FS1-D(3)	5.000	11/12/2020	1.26	4.81	24.0
PFOA	335-67-1	508 TD	G1707-FS1-D(5)	12.500	11/12/2020	6.14	18.0	60.1
PFNA	375-95-1	50.3 T	G1707-FS1(0)	1.000	11/12/2020	0.297	0.962	4.81
PFDA	335-76-2	0.481 UT	G1707-FS1(0)	1.000	11/12/2020	0.137	0.481	4.81
PFUnA	2058-94-8	0.481 UT	G1707-FS1(0)	1.000	11/12/2020	0.211	0.481	4.81
PFDoA	307-55-1	0.481 UT	G1707-FS1(0)	1.000	11/12/2020	0.185	0.481	4.81
PFTTrDA	72629-94-8	0.481 UT	G1707-FS1(0)	1.000	11/12/2020	0.148	0.481	4.81
PFTeDA	376-06-7	1.92 UT	G1707-FS1(0)	1.000	11/12/2020	0.705	1.92	4.81
NMeFOSAA	2355-31-9	0.962 UT	G1707-FS1(0)	1.000	11/12/2020	0.337	0.962	4.81
NEtFOSAA	2991-50-6	0.962 UT	G1707-FS1(0)	1.000	11/12/2020	0.481	0.962	4.81
PFBS	375-73-5	33.4 T	G1707-FS1(0)	1.000	11/12/2020	0.138	0.481	4.81
PFHxS	355-46-4	1060 TD	G1707-FS1-D(5)	12.500	11/12/2020	1.35	4.81	60.1
PFOS	1763-23-1	41.1 T	G1707-FS1(0)	1.000	11/12/2020	0.420	0.962	4.81
HFPO-DA	13252-13-6	0.481 UT	G1707-FS1(0)	1.000	11/12/2020	0.238	0.481	4.81
Adona	919005-14-4	0.962 UT	G1707-FS1(0)	1.000	11/12/2020	0.255	0.962	4.81
9Cl-PF3ONS	756426-58-1	0.481 UT	G1707-FS1(0)	1.000	11/12/2020	0.258	0.481	4.81
11Cl-PF3OUdS	763051-92-9	0.962 UT	G1707-FS1(0)	1.000	11/12/2020	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 CBD-AOA-MW15-1020

Battelle ID G1707-FS1
Sample Type SA
Collection Date 10/16/2020
Extraction Date 11/10/2020
Analytical Instrument Sciex 5500 (AC) LC/MS/MS

Surrogate Recoveries (%)	Recovery	Extract ID	Analysis Date
13C5-PFHxA	97 D	G1707-FS1-D(5)	11/12/2020
13C4-PFHpA	88 D	G1707-FS1-D(5)	11/12/2020
13C8-PFOA	97 D	G1707-FS1-D(5)	11/12/2020
13C9-PFNA	93 D	G1707-FS1-D(5)	11/12/2020
13C6-PFDA	72	G1707-FS1(0)	11/12/2020
13C7-PFUnA	61	G1707-FS1(0)	11/12/2020
13C2-PFDoA	50	G1707-FS1(0)	11/12/2020
13C2-PFTeDA	34 N	G1707-FS1(0)	11/12/2020
d3-MeFOSAA	61	G1707-FS1(0)	11/12/2020
d5-EtFOSAA	63	G1707-FS1(0)	11/12/2020
13C3-PFBS	66	G1707-FS1(0)	11/12/2020
13C3-PFHxS	81 D	G1707-FS1-D(5)	11/12/2020
13C8-PFOS	68	G1707-FS1(0)	11/12/2020
13C3-HFPO-DA	91 D	G1707-FS1-D(5)	11/12/2020



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

Client ID CBD-AOA-MW16-1020

Battelle ID G1708-FS1
 Sample Type SA
 Collection Date 10/16/2020
 Extraction Date 11/10/2020
 Analytical Instrument Sciex 5500 (AC) LC/MS/MS
 % Moisture NA
 Matrix GW
 Sample Size 0.265
 Size Unit-Basis L

Analyte	CAS No.	Result (ng/L)	Extract ID	DF	Analysis Date	DL	LOD	LOQ
PFHxA	307-24-4	29.1 T	G1708-FS1(0)	1.000	11/12/2020	0.497	1.42	4.72
PFHpA	375-85-9	8.32 T	G1708-FS1(0)	1.000	11/12/2020	0.248	0.943	4.72
PFOA	335-67-1	19.5 T	G1708-FS1(0)	1.000	11/12/2020	0.482	1.42	4.72
PFNA	375-95-1	6.48 T	G1708-FS1(0)	1.000	11/12/2020	0.292	0.943	4.72
PFDA	335-76-2	0.472 UT	G1708-FS1(0)	1.000	11/12/2020	0.134	0.472	4.72
PFUnA	2058-94-8	0.472 UT	G1708-FS1(0)	1.000	11/12/2020	0.207	0.472	4.72
PFDoA	307-55-1	0.472 UT	G1708-FS1(0)	1.000	11/12/2020	0.181	0.472	4.72
PFTrDA	72629-94-8	0.472 UT	G1708-FS1(0)	1.000	11/12/2020	0.145	0.472	4.72
PFTeDA	376-06-7	1.89 UT	G1708-FS1(0)	1.000	11/12/2020	0.692	1.89	4.72
NMeFOSAA	2355-31-9	0.943 UT	G1708-FS1(0)	1.000	11/12/2020	0.330	0.943	4.72
NEtFOSAA	2991-50-6	0.943 UT	G1708-FS1(0)	1.000	11/12/2020	0.472	0.943	4.72
PFBS	375-73-5	9.72 T	G1708-FS1(0)	1.000	11/12/2020	0.136	0.472	4.72
PFHxS	355-46-4	103 T	G1708-FS1(0)	1.000	11/12/2020	0.106	0.377	4.72
PFOS	1763-23-1	84.1 T	G1708-FS1(0)	1.000	11/12/2020	0.412	0.943	4.72
HFPO-DA	13252-13-6	0.472 UT	G1708-FS1(0)	1.000	11/12/2020	0.234	0.472	4.72
Adona	919005-14-4	0.943 UT	G1708-FS1(0)	1.000	11/12/2020	0.250	0.943	4.72
9Cl-PF3ONS	756426-58-1	0.472 UT	G1708-FS1(0)	1.000	11/12/2020	0.253	0.472	4.72
11Cl-PF3OUdS	763051-92-9	0.943 UT	G1708-FS1(0)	1.000	11/12/2020	0.218	0.943	4.72



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

Client ID CBD-AOA-MW16-1020

Battelle ID G1708-FS1
 Sample Type SA
 Collection Date 10/16/2020
 Extraction Date 11/10/2020
 Analytical Instrument Sciex 5500 (AC) LC/MS/MS

Surrogate Recoveries (%)	Recovery	Extract ID	Analysis Date
13C5-PFHxA	72	G1708-FS1(0)	11/12/2020
13C4-PFHpA	80	G1708-FS1(0)	11/12/2020
13C8-PFOA	81	G1708-FS1(0)	11/12/2020
13C9-PFNA	87	G1708-FS1(0)	11/12/2020
13C6-PFDA	89	G1708-FS1(0)	11/12/2020
13C7-PFUnA	90	G1708-FS1(0)	11/12/2020
13C2-PFDoA	86	G1708-FS1(0)	11/12/2020
13C2-PFTeDA	78	G1708-FS1(0)	11/12/2020
d3-MeFOSAA	97	G1708-FS1(0)	11/12/2020
d5-EtFOSAA	98	G1708-FS1(0)	11/12/2020
13C3-PFBS	83	G1708-FS1(0)	11/12/2020
13C3-PFHxS	81	G1708-FS1(0)	11/12/2020
13C8-PFOS	92	G1708-FS1(0)	11/12/2020
13C3-HFPO-DA	69	G1708-FS1(0)	11/12/2020



It can be done

Project Client: CH2M

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

Project No.: 100142218

Client ID LD80 IB

Battelle ID LD80 IB_11/11/2020

Sample Type IB

Collection Date NA

Extraction Date NA

Analysis Date 11/11/2020

Analytical Instrument Sciex 5500 (AC) 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: Griffith, Lauren

Printed: 11/16/2020

Isotope Dilution

L20-1455_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	LD80 IB
Battelle ID	LD80 IB_11/11/2020
Sample Type	IB
Collection Date	NA
Extraction Date	NA
Analysis Date	11/11/2020
Analytical Instrument	Sciex 5500 (AC) LC/MS/MS
% Moisture	NA
Matrix	Water
Sample Size	0.250
Size Unit-Basis	L

Surrogate Recoveries (%)

13C5-PFHxA	101
13C4-PFHpA	100
13C8-PFOA	104
13C9-PFNA	107
13C6-PFDA	100
13C7-PFUnA	107
13C2-PFDoA	97
13C2-PFTeDA	101
d3-MeFOSAA	102
d5-EtFOSAA	116
13C3-PFBS	104
13C3-PFHxS	102
13C8-PFOS	108
13C3-HFPO-DA	101



It can be done

Project Client: CH2M

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

Project No.: 100142218

Client ID LD80 IB

Battelle ID LD80 IB_11/12/2020

Sample Type IB

Collection Date NA

Extraction Date NA

Analysis Date 11/12/2020

Analytical Instrument Sciex 5500 (AC) 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: Griffith, Lauren

Printed: 11/16/2020

Isotope Dilution

L20-1455_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	LD80 IB
Battelle ID	LD80 IB_11/12/2020
Sample Type	IB
Collection Date	NA
Extraction Date	NA
Analysis Date	11/12/2020
Analytical Instrument	Sciex 5500 (AC) LC/MS/MS
% Moisture	NA
Matrix	Water
Sample Size	0.250
Size Unit-Basis	L

Surrogate Recoveries (%)

13C5-PFHxA	103
13C4-PFHpA	108
13C8-PFOA	107
13C9-PFNA	97
13C6-PFDA	95
13C7-PFUnA	102
13C2-PFDoA	94
13C2-PFTeDA	91
d3-MeFOSAA	89
d5-EtFOSAA	86
13C3-PFBS	93
13C3-PFHxS	92
13C8-PFOS	92
13C3-HFPO-DA	101



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

Client ID Procedural Blank

Battelle ID DB332PB-FS
 Sample Type PB
 Collection Date 11/10/2020
 Extraction Date 11/10/2020
 Analytical Instrument Sciex 5500 (AC) LC/MS/MS
 % Moisture NA
 Matrix WATER
 Sample Size 0.250
 Size Unit-Basis L

Analyte	CAS No.	Result (ng/L)	Extract ID	DF	Analysis Date	DL	LOD	LOQ
PFHxA	307-24-4	1.50 U	DB332PB-FS(0)	1.000	11/12/2020	0.527	1.50	5.00
PFHpA	375-85-9	1.00 U	DB332PB-FS(0)	1.000	11/12/2020	0.263	1.00	5.00
PFOA	335-67-1	1.50 U	DB332PB-FS(0)	1.000	11/12/2020	0.511	1.50	5.00
PFNA	375-95-1	1.00 U	DB332PB-FS(0)	1.000	11/12/2020	0.309	1.00	5.00
PFDA	335-76-2	0.500 U	DB332PB-FS(0)	1.000	11/12/2020	0.142	0.500	5.00
PFUnA	2058-94-8	0.500 U	DB332PB-FS(0)	1.000	11/12/2020	0.219	0.500	5.00
PFDoA	307-55-1	0.500 U	DB332PB-FS(0)	1.000	11/12/2020	0.192	0.500	5.00
PFTTrDA	72629-94-8	0.500 U	DB332PB-FS(0)	1.000	11/12/2020	0.154	0.500	5.00
PFTeDA	376-06-7	2.00 U	DB332PB-FS(0)	1.000	11/12/2020	0.733	2.00	5.00
NMeFOSAA	2355-31-9	1.00 U	DB332PB-FS(0)	1.000	11/12/2020	0.350	1.00	5.00
NEtFOSAA	2991-50-6	1.00 U	DB332PB-FS(0)	1.000	11/12/2020	0.500	1.00	5.00
PFBS	375-73-5	0.500 U	DB332PB-FS(0)	1.000	11/12/2020	0.144	0.500	5.00
PFHxS	355-46-4	0.400 U	DB332PB-FS(0)	1.000	11/12/2020	0.112	0.400	5.00
PFOS	1763-23-1	1.00 U	DB332PB-FS(0)	1.000	11/12/2020	0.437	1.00	5.00
HFPO-DA	13252-13-6	0.500 U	DB332PB-FS(0)	1.000	11/12/2020	0.248	0.500	5.00
Adona	919005-14-4	1.00 U	DB332PB-FS(0)	1.000	11/12/2020	0.265	1.00	5.00
9Cl-PF3ONS	756426-58-1	0.500 U	DB332PB-FS(0)	1.000	11/12/2020	0.268	0.500	5.00
11Cl-PF3OUdS	763051-92-9	1.00 U	DB332PB-FS(0)	1.000	11/12/2020	0.231	1.00	5.00



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

Client ID Procedural Blank
 Battelle ID DB332PB-FS
 Sample Type PB
 Collection Date 11/10/2020
 Extraction Date 11/10/2020
 Analytical Instrument Sciex 5500 (AC) LC/MS/MS

Surrogate Recoveries (%)	Recovery	Extract ID	Analysis Date
13C5-PFHxA	93	DB332PB-FS(0)	11/12/2020
13C4-PFHpA	96	DB332PB-FS(0)	11/12/2020
13C8-PFOA	100	DB332PB-FS(0)	11/12/2020
13C9-PFNA	97	DB332PB-FS(0)	11/12/2020
13C6-PFDA	82	DB332PB-FS(0)	11/12/2020
13C7-PFUnA	87	DB332PB-FS(0)	11/12/2020
13C2-PFDoA	74	DB332PB-FS(0)	11/12/2020
13C2-PFTeDA	77	DB332PB-FS(0)	11/12/2020
d3-MeFOSAA	120	DB332PB-FS(0)	11/12/2020
d5-EtFOSAA	130	DB332PB-FS(0)	11/12/2020
13C3-PFBS	93	DB332PB-FS(0)	11/12/2020
13C3-PFHxS	90	DB332PB-FS(0)	11/12/2020
13C8-PFOS	88	DB332PB-FS(0)	11/12/2020
13C3-HFPO-DA	83	DB332PB-FS(0)	11/12/2020



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 DB333LCS-FS
 Sample Type LCS
 Collection Date 11/10/2020
 Extraction Date 11/10/2020
 Analytical Instrument Sciex 5500 (AC) LC/MS/MS
 % Moisture NA
 Matrix WATER
 Sample Size 0.250
 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	41.6	DB333LCS-FS(0)	1.000	11/12/2020	40.4	103		72	129
PFHpA	375-85-9	39.0	DB333LCS-FS(0)	1.000	11/12/2020	40.0	98		72	130
PFOA	335-67-1	43.1	DB333LCS-FS(0)	1.000	11/12/2020	40.0	108		71	133
PFNA	375-95-1	41.1	DB333LCS-FS(0)	1.000	11/12/2020	40.0	103		69	130
PFDA	335-76-2	41.3	DB333LCS-FS(0)	1.000	11/12/2020	40.0	103		71	129
PFUnA	2058-94-8	36.2	DB333LCS-FS(0)	1.000	11/12/2020	40.0	91		69	133
PFDoA	307-55-1	39.5	DB333LCS-FS(0)	1.000	11/12/2020	40.0	99		72	134
PFTTrDA	72629-94-8	42.5	DB333LCS-FS(0)	1.000	11/12/2020	40.0	106		65	144
PFTeDA	376-06-7	43.1	DB333LCS-FS(0)	1.000	11/12/2020	40.0	108		71	132
NMeFOSAA	2355-31-9	39.1	DB333LCS-FS(0)	1.000	11/12/2020	40.0	98		65	136
NEtFOSAA	2991-50-6	38.9	DB333LCS-FS(0)	1.000	11/12/2020	40.0	97		61	135
PFBS	375-73-5	41.7	DB333LCS-FS(0)	1.000	11/12/2020	40.0	104		72	130
PFHxS	355-46-4	46.3	DB333LCS-FS(0)	1.000	11/12/2020	40.4	115		68	131
PFOS	1763-23-1	40.3	DB333LCS-FS(0)	1.000	11/12/2020	40.4	100		65	140
HFPO-DA	13252-13-6	39.1	DB333LCS-FS(0)	1.000	11/12/2020	40.0	98		74	148
Adona	919005-14-4	42.0	DB333LCS-FS(0)	1.000	11/12/2020	40.0	105		61	143
9CI-PF3ONS	756426-58-1	43.2	DB333LCS-FS(0)	1.000	11/12/2020	40.0	108		52	158
11CI-PF3OUdS	763051-92-9	40.7	DB333LCS-FS(0)	1.000	11/12/2020	40.0	102		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	DB333LCS-FS
Sample Type	LCS
Collection Date	11/10/2020
Extraction Date	11/10/2020
Analytical Instrument	Sciex 5500 (AC) LC/MS/MS

<i>Surrogate Recoveries (%)</i>	Recovery	Extract ID	Analysis Date
13C5-PFHxA	91	DB333LCS-FS(0)	11/12/2020
13C4-PFHpA	91	DB333LCS-FS(0)	11/12/2020
13C8-PFOA	92	DB333LCS-FS(0)	11/12/2020
13C9-PFNA	93	DB333LCS-FS(0)	11/12/2020
13C6-PFDA	92	DB333LCS-FS(0)	11/12/2020
13C7-PFUnA	96	DB333LCS-FS(0)	11/12/2020
13C2-PFDoA	90	DB333LCS-FS(0)	11/12/2020
13C2-PFTeDA	88	DB333LCS-FS(0)	11/12/2020
d3-MeFOSAA	98	DB333LCS-FS(0)	11/12/2020
d5-EtFOSAA	95	DB333LCS-FS(0)	11/12/2020
13C3-PFBS	86	DB333LCS-FS(0)	11/12/2020
13C3-PFHxS	81	DB333LCS-FS(0)	11/12/2020
13C8-PFOS	86	DB333LCS-FS(0)	11/12/2020
13C3-HFPO-DA	92	DB333LCS-FS(0)	11/12/2020



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 20-1455

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-20-1335
Analytical SOP:	5-369
Method Reference:	PFAS to QSM 5.3 Table B-15

Sample Custody		
Collection Date	Receipt Date	Temp (°C)
10/16/2020	10/17/2020	1.1

Corrective Actions	One sample listed as having two samples, however, six were received. Verified with client that the sample was the background for the MS/MSD sample during login.
Sample Storage	The samples were stored refrigerated until extraction.
Related samples	Samples re-extracted from SDG 20-1310 to verify extracted internal standard recoveries.

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	<p>pH of all samples prior to SPE extraction was verified between 6 and 8.</p> <p>Samples DB332PB-FS (Procedural Blank), DB333LCS-FS (Laboratory Control Sample), G1707-FS1 (CBD-AOA-MW15-1020), and G1708-FS1 (CBD-AOA-MW16-1020) 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.</p>
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.

QA/QC Summary
Batch 20-1455

Analysis Comments	<p>Samples analyzed on Sciex 5500 (AC) LC-MS/MS.</p> <p>MeFOSAA, EtFOSAA, PFHxS, and PFOS in the LCS, and field samples when detected, were found and reported as a combination of the linear and branched isomers.</p> <p>Adona, 9CI-PF3ONS and 11CI-PF3OUdS are quantified using 13C8-PFOA.</p> <p>Due to the potential contribution of high concentration of native compounds to labelled analogs, in cases where the native PFOA and PFOS are reported from a dilution, the extracted internal standards reported from 13C2-PFOA and 13C4-PFOS are reported from the same dilution level. In all other cases, the extracted internal standard is reported from the same dilution level as the native compound.</p> <p>Re-extraction to verify QC exceedances from the initial extraction occurred outside of the 14-day collection to extraction holding time window. This is allowable under QSM 5.3 for corrective actions associated with QC exceedances. All sample results are "T" qualified.</p>
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Holding Times	Extraction Date(s)	Analysis Date(s)
	11/10/2020	11/11 – 12/2020

Procedural Blank (PB)	A PB was prepared with this analytical batch to ensure the sample extraction and analysis methods are free of contamination.
$\leq \frac{1}{2}$ 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)	A 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	Project specific MS/MSD not included in this data set.
	No comments.

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	One (1) exceedance noted.
	One sample had suppressed or enhanced recoveries for select extracted internal standards. The table below indicates if the extracted internal standard was within +/- 50% of the area of the L5 calibration point ("P") or if the area

QA/QC Summary
Batch 20-1455

	<p>showed suppression (“↓”) or enhancement (“↑”) for these extracted internal standards.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="width: 100px;"></td> <td style="width: 50px; text-align: center;">13C2-PFTeDA</td> </tr> <tr> <td>G1707-FS1 (CBD-AOA-MW15-1020)</td> <td style="text-align: center;">↓</td> </tr> </table> <p>The remaining extracted internal standards in each impacted sample, fortified from the same solution, pass all criteria, suggesting that the suppression is matrix related to these analytes only.</p>		13C2-PFTeDA	G1707-FS1 (CBD-AOA-MW15-1020)	↓
	13C2-PFTeDA				
G1707-FS1 (CBD-AOA-MW15-1020)	↓				
Internal Standard Analytes	Labelled analog compounds were added prior to analysis.				
+/- 50% of the area of the L5 calibration point.	No exceedances noted. No comments.				
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.				
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. The following secondary transitions are outside of criteria: <ul style="list-style-type: none"> · ADONA in LD76 CCV (11/12/2020 09:32:55) The secondary transition is monitored solely for peak identification, not quantification. There is no impact on the reported data.				
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: 20-1455
 Data Set: DP-20-1335
 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)	1	Exceedance is confirmed by the original extraction in SDG-20-1310. LMG 11/12/2020
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-20-1335
Project Number:	100142218	Prep Batch Number:	20-1455
Entered By:	Lauren Griffith	Entered On:	11/12/2020
Test Code (Matrix Type):	Master_369B(L)		

Samples that were manually integrated are noted on the quant reports with the comment (TRUE).
LMG 11/12/2020

ADONA, 9CI-PF3ONS and 11CI-PF3OUdS are being quantified off 13C8-PFOA instead of 13C3-HFPO-DA.
LMG 11/12/2020

The following secondary transitions are outside of criteria:
ADONA in LD76 CCV (11/12/2020 9:32:55)
The secondary transition is monitored solely for peak identification, not quantification. There is no impact on the reported data.
LMG 11/12/2020

Due to the potential contribution of high concentration of native compounds to labelled analogs, in cases where the native PFOA and PFOS are reported from a dilution, the extracted internal standards reported from 13C2-PFOA and 13C4-PFOS are reported from the same dilution level. In all other cases, the extracted internal standard is reported from the same dilution level as the native compound.
LMG 11/12/2020

Task Leader Approval:

Supervisor Approval:

PM Approval:

Digitally signed by Jonathan Thorn
Date: 2020.11.13 09:07:41 -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: G1707-FS1-D(5)
 Client Sample ID: CBD-AOA-MW15-1020
 Sample Size: 0.26
 Units: L
 Dilution Factor: 12.500
 PIV (L): 0.001
 Target Analyte: PFHxS
 MRM Transition: 399.0 / 80.0
 Data file: AC_11112020_5-369.wiff
 Result table: 20-1455
 Area: 10,716,022.72
 IS Name: 13C3-PFHxS
 IS Area: 141,880.37
 IS Amount (ng/L): 1182.5
 y-intercept: -0.02275
 slope: 4.03471

$$\text{Concentration} = \frac{[(10716022.72/141880.37) - -0.02275]}{4.03471} * 1182.5 * 0.001 * 12.5 / 0.26$$

$$\text{ng/L} = 1060$$

*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: 20-1455

Data Set: DP-20-1335

		DB332PB-FS (Procedural Blank)	DB333LCS-FS (Laboratory Control Sample)	G1707-FS1 (CBD-AOA-MW15-1020)	G1708-FS1 (CBD-AOA-MW16-1020)
PFHxA	307-24-4	-	L	L	L
PFHpA	375-85-9	-	L	L	L
PFOA	335-67-1	-	L	L	L
PFNA	375-95-1	-	L	L	L
PFDA	335-76-2	-	L	-	-
PFUnA	2058-94-8	-	L	-	-
PFDoA	307-55-1	-	L	-	-
PFTTrDA	72629-94-8	-	L	-	-
PFTeDA	376-06-7	-	L	-	-
NMeFOSAA	2355-31-9	-	L/Br	-	-
NEtFOSAA	2991-50-6	-	L/Br	-	-
PFBS	375-73-5	-	L	L	L
PFHxS	355-46-4	-	L/Br	L/Br	L/Br
PFOS	1763-23-1	-	L/Br	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

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
LD78	L5	11/11/20 4:02	-		745,533.86		627,823.70		124,502.05
		Lower	-		372,766.93		313,911.85		62,251.03
		Upper	-		1,118,300.79		941,735.55		186,753.08

Sample Name	Sample ID	Analysis Date	13C3-PFBA	Qual	User	13C2-PFOA	Qual	User	13C2-PFDA	Qual	User	13C4-PFOS	Qual	User
LD74	L1	11/11/20 3:18	-			809,261.13			731,625.33			136,773.35		
LD75	L2	11/11/20 3:29	-			759,580.97			777,702.63			140,247.18		
LD76	L3	11/11/20 3:40	-			886,696.16			830,799.62			153,973.84		
LD77	L4	11/11/20 3:51	-			803,167.86			747,837.34			138,316.66		
LD78	L5	11/11/20 4:02	-			745,533.86			627,823.70			124,502.05		
LD79	L6	11/11/20 4:13	-			769,089.45			637,973.77			121,142.16		
LD80 IB	IB	11/11/20 4:24	-			710,395.09			683,695.51			120,745.84		
LD81 ICC	ICC	11/11/20 4:34	-			746,227.50			738,518.73			122,141.94		
LD76 CCV	CCV	11/12/20 9:32	-			730,944.99			713,086.92			116,807.33		
LD80 IB	IB	11/12/20 9:54	-			709,752.92			728,612.88			136,492.15		
LD78 CCV	CCV	11/12/20 13:22	-			708,793.19			618,169.52			125,599.96		
DB332PB-FS(0)	Procedural Blank	11/12/20 13:44	-			848,792.09			930,763.91			145,460.56		
DB333LCS-FS(0)	Laboratory Control Sample	11/12/20 13:54	-			713,044.12			655,272.26			124,889.69		
G1707-FS1(0)	CBD-AOA-MW15-1020	11/12/20 14:05	-			850,173.53			845,396.95			163,758.17		
G1707-FS1-D(3)	CBD-AOA-MW15-1020	11/12/20 14:16	-			823,795.73			867,175.81			140,163.08		
G1707-FS1-D(5)	CBD-AOA-MW15-1020	11/12/20 14:27	-			838,374.11			807,943.00			154,637.05		
G1708-FS1(0)	CBD-AOA-MW16-1020	11/12/20 14:38	-			874,062.83			792,587.30			145,198.07		
LD77 CCV	CCV	11/12/20 15:00	-			800,087.94			752,904.91			131,072.63		

Sample Name	LD78	Injection Vial	6
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:02:22 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Asymmetry Factor	Passing Range
PFBS_1	298.9 / 80.0	1.56	1.36	0.8 – 1.5
PFHxA_1	313.0 / 269.0	1.89	1.31	0.8 – 1.5

Sample Name	LD79	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:13:13 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
PFBS_1	298.9 / 80.0	1.56	59	>10
PFBS_2	298.9 / 99.0	1.56	57	>10
PFHxA_1	313.0 / 269.0	1.89	65	>10
PFHxA_2	313.0 / 119.0	1.89	55	>10
PFHpA_1	363.0 / 319.0	2.29	54	>10
PFHpA_2	363.0 / 169.0	2.29	40	>10
PFHxS_1	399.0 / 80.0	2.31	74	>10
PFHxS_2	399.0 / 99.0	2.31	65	>10
PFOA_1	413.0 / 369.0	2.68	60	>10
PFOA_2	413.0 / 169.0	2.68	38	>10
PFNA_1	463.0 / 419.0	3.05	56	>10
PFNA_2	463.0 / 219.0	3.05	53	>10
PFOS_1	499.0 / 80.0	3.05	66	>10
PFOS_2	499.0 / 99.0	3.05	48	>10
PFDA_1	513.0 / 469.0	3.39	53	>10
PFDA_2	513.0 / 219.0	3.39	44	>10
PFUnA_1	563.0 / 519.0	3.69	59	>10
PFUnA_2	563.0 / 269.0	3.69	43	>10
PFDoA_1	613.0 / 569.0	3.96	74	>10
PFDoA_2	613.0 / 319.0	3.96	50	>10
PFTTrDA_1	663.0 / 619.0	4.20	103	>10
PFTTrDA_2	663.0 / 169.0	4.20	62	>10
PFTeDA_1	713.0 / 669.0	4.41	122	>10
PFTeDA_2	713.0 / 169.0	4.40	76	>10
NMeFOSAA_1	570.0 / 419.0	3.54	83	>10
NMeFOSAA_2	570.0 / 512.0	3.54	83	>10
NEtFOSAA_1	584.0 / 419.0	3.69	87	>10
NEtFOSAA_2	584.0 / 483.0	3.69	68	>10
HFPO-DA_1	285.0 / 169.0	1.99	57	>10
HFPO-DA_2	285.0 / 118.8	1.99	41	>10
ADONA_1	377.0 / 251.0	2.32	58	>10
ADONA_2	377.0 / 85.0	2.31	51	>10
9Cl-PF3ONS_1	531.0 / 351.0	3.23	81	>10
9Cl-PF3ONS_2	531.0 / 83.0	3.23	49	>10
11Cl-pf3OUdS_1	631.0 / 451.0	3.82	75	>10
11Cl-pf3OUdS_2	631.0 / 83.0	3.82	41	>10

Sample Name	LD79	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:13:13 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Spectra Acquisition Rate	Passing Range
13C2-PFDoA	615.0 / 570.0	3.96	28	>10
d3-MeFOSAA	573.0 / 419.0	3.54	34	>10
d5-EtFOSAA	589.0 / 419.0	3.69	44	>10
13C5-PFHxA	318.0 / 273.0	1.88	51	>10
13C4-PFHpA	367.0 / 322.0	2.27	45	>10
13C8-PFOA	421.0 / 376.0	2.67	38	>10
13C9-PFNA	472.0 / 427.0	3.04	32	>10
13C6-PFDA	519.0 / 474.0	3.38	36	>10
13C7-PFUnA	570.0 / 525.0	3.68	46	>10
13C2-PFTeDA	715.0 / 670.0	4.40	42	>10
13C3-PFBS	302.0 / 99.0	1.55	40	>10
13C3-PFHxS	402.0 / 99.0	2.29	32	>10
13C8-PFOS	507.0 / 99.0	3.03	33	>10
13C3-HFPO-DA	287.0 / 169.0	1.99	39	>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



Zef Scientific Inc.

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

QTRAP 5500 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:** _____

**Zef Scientific Inc.**

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

PRE PM PPG PERFORMANCE EVALUATION:

- Consult Customer concerning the unit overall performance.
 Check Logbook for Services recently performed.
 Check Vacuum Pressure:

CAD Settings	Vacuum Reading (x 10 ⁻⁵ Torr)	Acceptance Criteria
<input type="checkbox"/> CAD 0		0.4 to 1.1 x10 ⁻⁵ Torr
<input type="checkbox"/> CAD Low		Read Only
<input type="checkbox"/> CAD Medium		Read Only
<input type="checkbox"/> CAD High		Read Only
<input type="checkbox"/> CAD 12		2.4 to 4.5 x10 ⁻⁵ Torr

- Check for Front end contamination symptoms. Run Q1 POS PPG using PPG 2e-7for 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-7for 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

Pre PM PPG Test: Perform each of the following tests. Optimize ion source position only. The specifications listed for these Pre PM tests are guidelines only, not required to be met.

- Perform Q1 POS using POS PPG 2e-7M. Scan Rate 10 Da/s. Record 10 mca.

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

- Perform Q3 POS using POS PPG 2e-7M. Scan Rate 10 Da/s. Record 10 mca.

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



Zef Scientific Inc.

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
Canada H9P 1J8

Phone: 1.866.854.7988

QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

Perform MSMS POS in Product Ion scan with 609.3 parent and record daughter 195.1 using Reserpine 0.167 pmol/ul at the scan rate of 10 Da/s for 10 MCA. Calculate transmission efficiency comparing Q1POS 609 intensity. Transmission Efficiency: : _____ (Read Only)

Mass	MSMS Intensity		MSMS Width Value	Width Specs
	Value	Spec		
Q1 609.3		Read Only		Read Only
MS/MS 195.1		Read Only		Read Only

Perform Q1 NEG using NEG PPG 3e-5M. Scan Rate 10 Da/s. Record 10 mca.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Spec		
Q1 933.636		Read Only		Read Only

Perform Q3 NEG using NEG PPG 3e-5M. Scan Rate 10 Da/s. Record 10 mca.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Spec		
Q3 933.636		Read Only		Read Only

Perform Product Ion scan using NEG PPG 3e-5M. Record 10mca.

Mass	Scan Rate	MCA	MSMS Intensity		MSMS Width Value	Width Specs
			Value	Spec		
MSMS 45	10	10		Read Only		Read Only

**Zef Scientific Inc.**

12707 High Bluff Dr.
Suite 200
San Diego, CA
USA 92130

1975 Hymus Blvd.
Suite 230
Dorval, QC
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Phone: 1.866.854.7988

QTRAP 5500

LC/MS/MS Detector System

Appendix ZEFPM003-2L

PREVENTIVE MAINTENANCE CHECKLIST:

- Check Cooling Fans for Turbo Pumps while MS is ON.
- Check QJet and QPS tuning voltage for reference.
- Record AC input Voltage while MS is OFF: _____ (200-240VAC).
If Out-of-Range, notify customer.
- Clean Interface
- Curtain Plate
 - Orifice Plate
 - QJet
 - Q0 Rods.
- Replace Roughing Pump Oil.
- Inspect Oil Exhaust Filter, if Applicable. N/A
- Clean and inspect built-in divert valve if used. N/A
- Check Multiplier Voltage, optimize if necessary.
- Replace four Air Filters at the bottom of the mass spectrometer.
- Pump down overnight if possible. N/A
- Perform Maintenance on Turbo V source.
- Replace Electrode, if necessary. N/A
- Check Turbo heaters resistances.
- Check if Temperature is reached at 500C with TIS Probe installed.
- Check if Temperature is reached at 500C with APCI Probe installed. N/A

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LC/MS/MS Detector System

Appendix ZEFPM003-2L

POST PM PPG PERFORMANCE TESTS:

- Set-up Sample for Infusion.
 Check spray and adjust sprayer's position of the TIS source.
 Check Vacuum Pressure:

CAD Settings	Vacuum Reading (x 10 ⁻⁵ Torr)	Acceptance Criteria
<input type="checkbox"/> CAD 0		0.4 to 1.1 x10 ⁻⁵ Torr
<input type="checkbox"/> CAD Low		Read Only
<input type="checkbox"/> CAD Medium		Read Only
<input type="checkbox"/> CAD High		Read Only
<input type="checkbox"/> CAD 12		2.4 to 4.5 x10 ⁻⁵ Torr

- Perform Q1 POS using POS PPG 2e-7M. Mass calibrate to less than 0.1 amu.

Mass	Q1 Intensity		Q1 Width Value	Width Specs
	Value	Spec		
Scan Rate 10 Da/s Record 10 mca				
Q1 175.133		≥1.2 ⁶		0.6 to 0.8
Q1 500.380		≥9.0 ⁶		0.6 to 0.8
Q1 906.673		≥1.4 ⁷		0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q1 906.673		≥6.8 ⁷		0.6 to 0.8

- Perform Q3 POS using POS PPG 2e-7M. Mass calibrate to less than 0.1 amu.

Mass	Q3 Intensity		Q3 Width Value	Width Specs
	Value	Spec		
Scan Rate 10 Da/s Record 10 mca				
Q3 175.133		≥1.2 ⁶		0.6 to 0.8
Q3 500.380		≥9.0 ⁶		0.6 to 0.8
Q3 906.673		≥1.4 ⁷		0.6 to 0.8
Scan Rate 1000 Da/s Record 50 mca				
Q3 906.673		≥6.8 ⁷		0.6 to 0.8

- Perform "Product of 609.3" POS and record product ion 195.1 using Reserpine 0.167pmol/uL. Record 10 mca. Calculate Transmission efficiency comparing Q1POS 609 intensity.

Transmission Efficiency: _____ (≥ 10.0%)

Mass	MSMS Intensity		Width Value	Width Specs
	Value	Spec		
Q1 609.3		N/A		Read Only
MS/MS 195.1		N/A		Read Only

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QTRAP 5500**LC/MS/MS Detector System**

Appendix ZEFPM003-2L

Perform Q1 NEG using NEG PPG 3e-5M. Mass calibrate to less than 0.1 amu.

Mass	Scan Rate	Mca	Q1 Intensity		Q1 Width Value	Width Specs
			Value	Spec		
Q1 933.636	10	10		$\geq 1.0^{e7}$		0.6 to 0.8
Q1 933.636	1000	50		$\geq 4.0^{e7}$		0.6 to 0.8

Perform Q3 NEG using NEG PPG 3e-5M. Mass calibrate to less than 0.1 amu.

Mass	Scan Rate	Mca	Q3 Intensity		Q3 Width Value	Width Specs
			Value	Spec		
Q3 933.636	10	10		$\geq 8.0^{e6}$		0.6 to 0.8
Q3 933.636	1000	50		$\geq 4.0^{e7}$		0.6 to 0.8

Perform Product Ion scan using NEG PPG 3e-5M.

Mass	Scan Rate	Mca	MSMS Intensity		MSMS Width Value	Width Specs
			Value	Spec		
MSMS 45	10	10		Read Only		Read Only

Perform ER POS 118.087 and 922.01 using ESI Tuning Mix 1:100 in ES Tuning Dilution Solvent. Apply suggested Scan Rate and Record number of MCA. Mass calibrate to less than 0.1 amu.

Mass	Fill Time (ms)	ER Intensity		ER Width Value	Width Specs
		Value	Spec		
ScanRate : 1000 Da/s ; 50 Mca					
ER 118.087	0.05		$\geq 7.2^{e6}$		<0.35
ER 922.010	0.05		$\geq 2.8^{e6}$		<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 118.087	0.05		$\geq 2.4^{e7}$		<0.65
ER 922.010	0.05		$\geq 6.8^{e7}$		<0.65

Perform ER NEG 431.982 and 601.978 using ESI Tuning Mix 1:100 in ES Tuning Dilution Solvent. Apply suggested Scan Rate and Record number of MCA. Mass calibrate to less than 0.1 amu.

Mass	Fill Time (ms)	ER Intensity		ER Width Value	Width Specs
		Value	Spec		
ScanRate : 1000 Da/s ; 50 Mca					
ER 431.982	0.05		$\geq 4.4^{e7}$		<0.35
ER 601.978	0.05		$\geq 5.6^{e7}$		<0.35
ScanRate : 10000 Da/s ; 50 Mca					
ER 431.982	0.05		$\geq 1.2^{e8}$		<0.65
ER 601.978	0.05		$\geq 1.6^{e8}$		<0.65

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QTRAP 5500**LC/MS/MS Detector System**

Appendix ZEFPM003-2L

- Perform EPI POS 397.2 using Reserpine 0.167pmol/uL. Record 20 mca.

Mass	Scan Rate (Da/s)	Q0 Trapping OFF		Q0 Trapping ON	
		Intensity	Spec	Intensity	Spec
EPI 397.2	10000		$\geq 2.0 \times 10^6$		$\geq 6.4 \times 10^6$

- Perform MS3 POS full scan Fragmentation ON & OFF using Reserpine 0.167pmol/uL. Record 20 mca.

Mass	Scan Rate (Da/s)	Fragamentation OFF		Fragmentation ON	
		Intensity	Spec	Intensity	Spec
MS3 397.2	1000		Contains only 397.2	N/A	N/A
<input type="checkbox"/> 236 OR <input type="checkbox"/> 365	1000		Fragment Intensity		$\geq 1.6 \times 10^6$

REVIEW:

- Attach all spectrums printouts to this procedure.
- If any parameter setting access modes were changed during the PM, ensure 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
- Update Service Work Order status
- Fill and replace PM Label.

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

06 OCT 2016: Appendix ZEFPM003-2L: Removed requirements to fit Manufacturer's testing criteria.

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
LE23	PFAS - DoD Second Source LCS/MS Solution	-	-	-	201006-07
LE23	PFAS - DoD Second Source LCS/MS Solution	LC24	-	-	200811-01
LE23	PFAS - DoD Second Source LCS/MS Solution	LC24	-	-	200811-02
LE23	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
LD74	PFAS - DoD Calibration L1	LB78	LB75	-	200721-21
LD74	PFAS - DoD Calibration L1	LB78	LB75	-	200721-22
LD74	PFAS - DoD Calibration L1	LB78	LB75	-	200721-23
LD74	PFAS - DoD Calibration L1	LB78	LB75	-	200721-24
LD74	PFAS - DoD Calibration L1	LC85	LC84	LC24	200811-01
LD74	PFAS - DoD Calibration L1	LC85	LC84	LC24	200811-02
LD74	PFAS - DoD Calibration L1	LC85	LC84	LC24	200811-03
LD74	PFAS - DoD Calibration L1	LC85	LC84	-	200914-01
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-01
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-02
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-03
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-04
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-05
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-06
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-07
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-08
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-09
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-10
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-11
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-12
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-13
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-14
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-15
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-16
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-17
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-18
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-19
LD74	PFAS - DoD Calibration L1	LD73	LB74	-	200721-20
LD75	PFAS - DoD Calibration L2	LB78	LB75	-	200721-21
LD75	PFAS - DoD Calibration L2	LB78	LB75	-	200721-22

Battelle Standard ID	Description	Intermediate Solutions			Battelle Reagent ID (purchased solutions)
LD75	PFAS - DoD Calibration L2	LB78	LB75	-	200721-23
LD75	PFAS - DoD Calibration L2	LB78	LB75	-	200721-24
LD75	PFAS - DoD Calibration L2	LC85	LC84	LC24	200811-01
LD75	PFAS - DoD Calibration L2	LC85	LC84	LC24	200811-02
LD75	PFAS - DoD Calibration L2	LC85	LC84	LC24	200811-03
LD75	PFAS - DoD Calibration L2	LC85	LC84	-	200914-01
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-01
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-02
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-03
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-04
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-05
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-06
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-07
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-08
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-09
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-10
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-11
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-12
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-13
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-14
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-15
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-16
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-17
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-18
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-19
LD75	PFAS - DoD Calibration L2	LD73	LB74	-	200721-20
LD76	PFAS - DoD Calibration L3	LB78	LB75	-	200721-21
LD76	PFAS - DoD Calibration L3	LB78	LB75	-	200721-22
LD76	PFAS - DoD Calibration L3	LB78	LB75	-	200721-23
LD76	PFAS - DoD Calibration L3	LB78	LB75	-	200721-24
LD76	PFAS - DoD Calibration L3	LC84	LC24	-	200811-01
LD76	PFAS - DoD Calibration L3	LC84	LC24	-	200811-02
LD76	PFAS - DoD Calibration L3	LC84	LC24	-	200811-03
LD76	PFAS - DoD Calibration L3	LC84	-	-	200914-01
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-01
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-02
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-03
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-04
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-05
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-06
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-07
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-08
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-09
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-10
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-11
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-12
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-13
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-14
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-15
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-16
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-17
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-18
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-19
LD76	PFAS - DoD Calibration L3	LD73	LB74	-	200721-20
LD77	PFAS - DoD Calibration L4	LB78	LB75	-	200721-21
LD77	PFAS - DoD Calibration L4	LB78	LB75	-	200721-22
LD77	PFAS - DoD Calibration L4	LB78	LB75	-	200721-23
LD77	PFAS - DoD Calibration L4	LB78	LB75	-	200721-24

Battelle Standard ID	Description	Intermediate Solutions			Battelle Reagent ID (purchased solutions)
LD77	PFAS - DoD Calibration L4	LC84	LC24	-	200811-01
LD77	PFAS - DoD Calibration L4	LC84	LC24	-	200811-02
LD77	PFAS - DoD Calibration L4	LC84	LC24	-	200811-03
LD77	PFAS - DoD Calibration L4	LC84	-	-	200914-01
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-01
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-02
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-03
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-04
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-05
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-06
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-07
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-08
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-09
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-10
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-11
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-12
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-13
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-14
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-15
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-16
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-17
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-18
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-19
LD77	PFAS - DoD Calibration L4	LD73	LB74	-	200721-20
LD78	PFAS - DoD Calibration L5	LB78	LB75	-	200721-21
LD78	PFAS - DoD Calibration L5	LB78	LB75	-	200721-22
LD78	PFAS - DoD Calibration L5	LB78	LB75	-	200721-23
LD78	PFAS - DoD Calibration L5	LB78	LB75	-	200721-24
LD78	PFAS - DoD Calibration L5	LC84	LC24	-	200811-01
LD78	PFAS - DoD Calibration L5	LC84	LC24	-	200811-02
LD78	PFAS - DoD Calibration L5	LC84	LC24	-	200811-03
LD78	PFAS - DoD Calibration L5	LC84	-	-	200914-01
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-01
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-02
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-03
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-04
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-05
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-06
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-07
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-08
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-09
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-10
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-11
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-12
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-13
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-14
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-15
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-16
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-17
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-18
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-19
LD78	PFAS - DoD Calibration L5	LD73	LB74	-	200721-20
LD79	PFAS - DoD Calibration L6	LB78	LB75	-	200721-21
LD79	PFAS - DoD Calibration L6	LB78	LB75	-	200721-22
LD79	PFAS - DoD Calibration L6	LB78	LB75	-	200721-23
LD79	PFAS - DoD Calibration L6	LB78	LB75	-	200721-24
LD79	PFAS - DoD Calibration L6	LC84	LC24	-	200811-01
LD79	PFAS - DoD Calibration L6	LC84	LC24	-	200811-02

Battelle Standard ID	Description	Intermediate Solutions			Battelle Reagent ID (purchased solutions)
LD79	PFAS - DoD Calibration L6	LC84	LC24	-	200811-03
LD79	PFAS - DoD Calibration L6	LC84	-	-	200914-01
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-01
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-02
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-03
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-04
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-05
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-06
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-07
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-08
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-09
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-10
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-11
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-12
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-13
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-14
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-15
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-16
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-17
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-18
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-19
LD79	PFAS - DoD Calibration L6	LD73	LB74	-	200721-20
LD81	PFAS - DoD ICC	LB78	LB75	-	200721-21
LD81	PFAS - DoD ICC	LB78	LB75	-	200721-22
LD81	PFAS - DoD ICC	LB78	LB75	-	200721-23
LD81	PFAS - DoD ICC	LB78	LB75	-	200721-24
LD81	PFAS - DoD ICC	LD43	LC24	-	200811-01
LD81	PFAS - DoD ICC	LD43	LC24	-	200811-02
LD81	PFAS - DoD ICC	LD43	LC24	-	200811-03
LD81	PFAS - DoD ICC	LD43	-	-	200909-01
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-01
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-02
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-03
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-04
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-05
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-06
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-07
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-08
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-09
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-10
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-11
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-12
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-13
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-14
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-15
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-16
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-17
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-18
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-19
LD81	PFAS - DoD ICC	LD73	LB74	-	200721-20



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: LC84

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: 9/15/2020	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-200915-3)

Approved By: Schumitz, Denise **Date:** 9/16/2020 8:25:00 AM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LC84

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-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:
200914-01	Pipette	B1100330B
LC24	Pipette	B1100330B

Solution Prepared By: Bailey, Kevin **Date Prepared:** 9/15/2020 **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-200915-3)

Approved By: Schumitz, Denise **Date:** 9/16/2020 8:25:00 AM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LC85

Description: PFAS - DoD Low ICAL Stock

Stock Id: LC84

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: 9/15/2020	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-200915-3)

Approved By: Schumitz, Denise **Date:** 9/16/2020 8:25:00 AM



It can be done

Standard Solution Concentrations Approved:

Standard Laboratory ID Number: LC85

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-butanedisulfonate	.01000
Perfluoro-n-decanedisulfonate	.01000
Perfluoro-n-dodecanedisulfonate	.01000
Perfluoro-n-heptanedisulfonate	.01000
Perfluoro-n-hexanedisulfonate	.01010
Perfluoro-n-octanedisulfonate	.01000
Perfluorononanedisulfonate	.01000
Perfluoro-n-pentanedisulfonate	.01010
Perfluoro-n-tetradecanedisulfonate	.01000
Perfluoro-n-tridecanedisulfonate	.01000
Perfluoro-n-undecanedisulfonate	.01000

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LC84	Pipette	B1100330B

Solution Prepared By: Bailey, Kevin	Date Prepared: 9/15/2020	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-200915-3)

Approved By: Schumitz, Denise **Date:** 9/16/2020 8:25:00 AM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LD43

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	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: 10/6/2020	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-201006-1)

Approved By: Schumitz, Denise **Date:** 10/8/2020 10:54:00 AM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LD43

Description: PFAS - DoD Second Source LCS/MS Solution

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:
200909-01	Pipette	B820865811
LC24	Pipette	B820865811

Solution Prepared By: Bailey, Kevin **Date Prepared:** 10/6/2020 **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-201006-1)

Approved By: Schumitz, Denise **Date:** 10/8/2020 10:54:00 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: LD74

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: LC85

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	250	0.01	---	---	1	10	0.00025
3-Perfluoropentyl propanoic acid	250	0.01	---	---	1	10	0.00025
3-perfluoropropyl propanoic Acid	250	0.01	---	---	1	10	0.00025

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-PFU _n A	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

Final Concentrations:

Solution Prepared By: Bailey, Kevin	Date Prepared: 10/22/2020	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-201022-7)

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LD74

Description: PFAS - DoD Calibration L1

Analyte:	Conc (ug/mL):
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
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
3-Perfluoroheptyl propanoic acid	.00025
3-Perfluoropentyl propanoic acid	.00025
3-perfluoropropyl propanoic Acid	.00025
d3-MeFOSAA	.00125
d5-EtFOSAA	.00125

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB78	Pipette	B814657482
LC85	Pipette	B814657482
LD73	Pipette	B814657482

Solution Prepared By: Bailey, Kevin **Date Prepared:** 10/22/2020 **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-201022-7)

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LD75

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: LC85

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	500	0.01	---	---	1	10	0.00050
3-Perfluoropentyl propanoic acid	500	0.01	---	---	1	10	0.00050
3-perfluoropropyl propanoic Acid	500	0.01	---	---	1	10	0.00050

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-PFU _n A	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

Final Concentrations:

Solution Prepared By: Bailey, Kevin	Date Prepared: 10/22/2020	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-201022-7)

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LD75

Description: PFAS - DoD Calibration L2

Analyte:	Conc (ug/mL):
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
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
3-Perfluoroheptyl propanoic acid	.00050
3-Perfluoropentyl propanoic acid	.00050
3-perfluoropropyl propanoic Acid	.00050
d3-MeFOSAA	.00125
d5-EtFOSAA	.00125

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB78	Pipette	B814657482
LC85	Pipette	B820865811
LD73	Pipette	B814657482

Solution Prepared By: Bailey, Kevin **Date Prepared:** 10/22/2020 **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-201022-7)

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LD76

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: LC84

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	0.10	---	---	1	40	0.00100
3-Perfluoropentyl propanoic acid	400	0.10	---	---	1	40	0.00100
3-perfluoropropyl propanoic Acid	400	0.10	---	---	1	40	0.00100

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-PFU _n A	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

Final Concentrations:

Solution Prepared By: Bailey, Kevin	Date Prepared: 10/22/2020	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-201022-7)

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LD76

Description: PFAS - DoD Calibration L3

Analyte:	Conc (ug/mL):
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
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
3-Perfluoroheptyl propanoic acid	.00100
3-Perfluoropentyl propanoic acid	.00100
3-perfluoropropyl propanoic Acid	.00100
d3-MeFOSAA	.00125
d5-EtFOSAA	.00125

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB78	Pipette	B820865811
LC84	Pipette	B820865811
LD73	Pipette	B820865811

Solution Prepared By: Bailey, Kevin **Date Prepared:** 10/22/2020 **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-201022-7)

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LD77

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: LC84

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	0.10	---	---	1	40	0.00250
3-Perfluoropentyl propanoic acid	1000	0.10	---	---	1	40	0.00250
3-perfluoropropyl propanoic Acid	1000	0.10	---	---	1	40	0.00250

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-PFU _n A	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

Final Concentrations:

Solution Prepared By: Bailey, Kevin	Date Prepared: 10/22/2020	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-201022-7)

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



It can be done

Standard Solution Concentrations Approved:

Standard Laboratory ID Number: LD77

Description: PFAS - DoD Calibration L4

Analyte:	Conc (ug/mL):
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
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
3-Perfluoroheptyl propanoic acid	.00250
3-Perfluoropentyl propanoic acid	.00250
3-perfluoropropyl propanoic Acid	.00250
d3-MeFOSAA	.00125
d5-EtFOSAA	.00125

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB78	Pipette	B820865811
LC84	Pipette	B820865811
LD73	Pipette	B820865811

Solution Prepared By: Bailey, Kevin	Date Prepared: 10/22/2020	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-201022-7)

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LD78

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: LC84

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	0.10	---	---	1	10	0.01000
3-Perfluoropentyl propanoic acid	1000	0.10	---	---	1	10	0.01000
3-perfluoropropyl propanoic Acid	1000	0.10	---	---	1	10	0.01000

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-PFU _n A	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

Final Concentrations:

Solution Prepared By: Bailey, Kevin	Date Prepared: 10/22/2020	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-201022-7)

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LD78

Description: PFAS - DoD Calibration L5

Analyte:	Conc (ug/mL):
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
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
3-Perfluoroheptyl propanoic acid	.01000
3-Perfluoropentyl propanoic acid	.01000
3-perfluoropropyl propanoic Acid	.01000
d3-MeFOSAA	.00125
d5-EtFOSAA	.00125

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB78	Pipette	B814657482
LC84	Pipette	B820865811
LD73	Pipette	B814657482

Solution Prepared By: Bailey, Kevin **Date Prepared:** 10/22/2020 **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-201022-7)

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



It can be done

Standard Solution Concentrations

Approved: Standard Laboratory ID Number: **LD79**

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: LC84

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	2500	0.10	---	---	1	10	0.02500
3-Perfluoropentyl propanoic acid	2500	0.10	---	---	1	10	0.02500
3-perfluoropropyl propanoic Acid	2500	0.10	---	---	1	10	0.02500

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-PFU _n A	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

Final Concentrations:

Solution Prepared By: Bailey, Kevin	Date Prepared: 10/22/2020	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-201022-7)

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



It can be done

Standard Solution Concentrations Approved:

Standard Laboratory ID Number: LD79

Description: PFAS - DoD Calibration L6

Analyte:	Conc (ug/mL):
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
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
3-Perfluoroheptyl propanoic acid	.02500
3-Perfluoropentyl propanoic acid	.02500
3-perfluoropropyl propanoic Acid	.02500
d3-MeFOSAA	.00125
d5-EtFOSAA	.00125

Syringes/Pipettes:

Stock ID:	Type:	Battelle ID:
LB78	Pipette	B814657482
LC84	Pipette	B820865811
LD73	Pipette	B814657482

Solution Prepared By: Bailey, Kevin	Date Prepared: 10/22/2020	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-201022-7)

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LD81

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: LD43

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
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-butanefluoride	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

Solution Prepared By: Bailey, Kevin Date Prepared: 10/22/2020 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-201022-7)

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LD81

Description: PFAS - DoD ICC

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

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

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: 10/22/2020 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-201022-7)

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



It can be done

Standard Solution Concentrations Approved:

Standard Laboratory ID Number: LD81

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: 10/22/2020	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-201022-7)

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LD81

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
LD43	Pipette	B814657482
LD73	Pipette	B814657482

Solution Prepared By: Bailey, Kevin **Date Prepared:** 10/22/2020 **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-201022-7)

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



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE23

Description: PFAS - DoD Second Source LCS/MS Solution

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	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: 10/29/2020	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-201029-1)

Approved By: Schumitz, Denise **Date:** 10/29/2020 1:33:00 PM



It can be done

Standard Solution Concentrations

Approved:

Standard Laboratory ID Number: LE23

Description: PFAS - DoD Second Source LCS/MS Solution

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:
201006-07	Pipette	B820865811
LC24	Pipette	B820865811

Solution Prepared By: Bailey, Kevin **Date Prepared:** 10/29/2020 **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-201029-1)

Approved By: Schumitz, Denise **Date:** 10/29/2020 1:33:00 PM



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

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	Cert Val:	Lower Limit:	Upper Limit:
13C4-PFBA	BDO-2105	50.0000	98.00	--	--	<input type="checkbox"/>			

Total Analytes: 1

Notes:

Approved by: _____

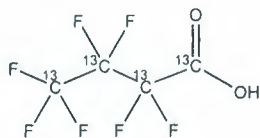
Approved on: _____

Authorized by: _____

Authorized on: _____

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

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



MOLECULAR FORMULA: ¹³C₄HF₇O₂ **MOLECULAR WEIGHT:** 218.01
CONCENTRATION: 50.0 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
(1,2,3,4-¹³C₄)
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

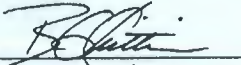
DOCUMENTATION/ DATA ATTACHED:

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:** 05/20/2020
(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:

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: _____

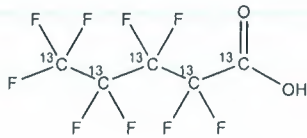


WELLINGTON
LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M5PFPeA **LOT NUMBER:** M5PFPeA0120
COMPOUND: Perfluoro-n-[¹³C₅]pentanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	¹³ C ₅ HF ₉ O ₂	MOLECULAR WEIGHT:	269.01
CONCENTRATION:	50.0 ± 2.5 µg/ml	SOLVENT(S):	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	ISOTOPIC PURITY:	≥99% ¹³ C (¹³ C ₅)
LAST TESTED: (mm/dd/yyyy)	01/22/2020		
EXPIRY DATE: (mm/dd/yyyy)	01/22/2025		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

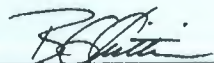
DOCUMENTATION/ DATA ATTACHED:

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 ~ 0.25% of perfluoro-n-pentanoic 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)

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:

200721-03

Reagent Receipt Report

Approved: Authorized:

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

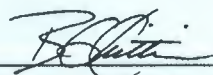
DOCUMENTATION/ DATA ATTACHED:

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)

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:

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: _____



WELLINGTON LABORATORIES

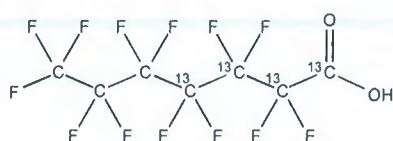
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M4PFHpA
COMPOUND: Perfluoro-n-[1,2,3,4-¹³C₄]heptanoic acid

LOT NUMBER: M4PFHpA0120

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: ¹³C₄¹²C₃HF₁₃O₂
CONCENTRATION: 50.0 ± 2.5 µg/ml

MOLECULAR WEIGHT: 368.03
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/08/2020
EXPIRY DATE: (mm/dd/yyyy) 01/08/2025

ISOTOPIC PURITY: ≥99%¹³C
(1,2,3,4-¹³C₄)

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

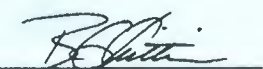
DOCUMENTATION/ DATA ATTACHED:

- 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 ~ 0.03% of perfluoro-n-heptanoic 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)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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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: _____

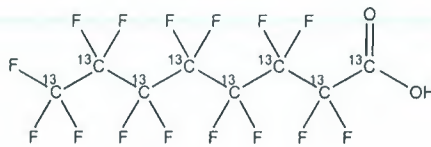


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CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M8PFOA **LOT NUMBER:** M8PFOA0220
COMPOUND: Perfluoro-n-[¹³C₈]octanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	¹³ C ₈ H _F ₁₅ O ₂	MOLECULAR WEIGHT:	422.01
CONCENTRATION:	48.9 ± 2.4 µg/ml	SOLVENT(S):	Methanol Water (<1%)
CHEMICAL PURITY:	97.8% (M8PFOA) 2.2% (MPFOA [M+4])	ISOTOPIC PURITY:	≥99% ¹³ C (¹³ 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:  **Date:** 01/24/2020
 B.G. Chittim, General Manager (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: _____

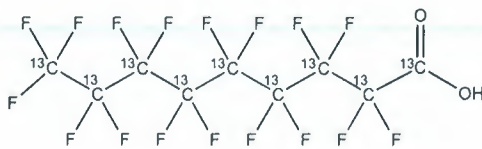


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CERTIFICATE OF ANALYSIS DOCUMENTATION

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)

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It can be doneBDO 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: _____

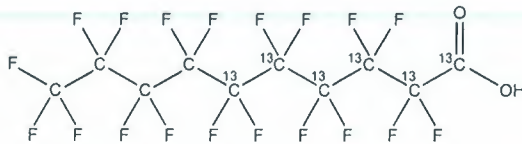
26074-07



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:

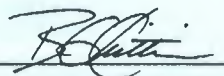
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

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)

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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: _____



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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:  **Date:** 09/12/2019
 B.G. Chittim, General Manager (mm/dd/yyyy)

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It can be doneBDO 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: _____

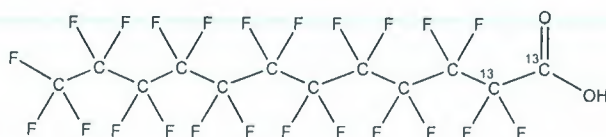
200721-09



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:

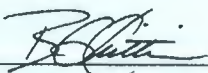
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

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 Report

Approved: 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)

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

BDO Id: 200721-11

Reagent Receipt Report

Approved:

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

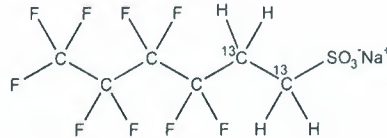


WELLINGTON LABORATORIES

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).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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 ReportApproved:

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: _____

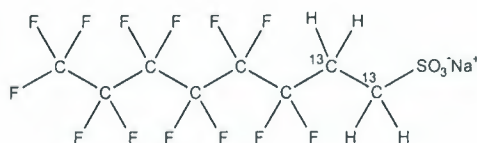


WELLINGTON
LABORATORIES

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

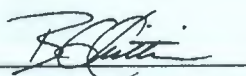
DOCUMENTATION/ DATA ATTACHED:

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).

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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: _____



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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

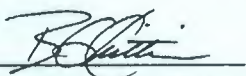
DOCUMENTATION/ DATA ATTACHED:

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: _____

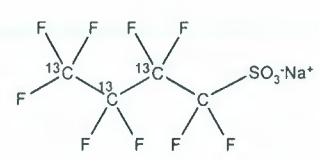


WELLINGTON LABORATORIES

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: ¹³C₃¹²CF₉SO₃Na **MOLECULAR WEIGHT:** 325.06
CONCENTRATION: 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol
46.6 ± 2.3 µg/ml (M3PFBS acid)
46.5 ± 2.3 µg/ml (M3PFBS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 03/17/2020 (2,3,4-¹³C₃)
EXPIRY DATE: (mm/dd/yyyy) 03/17/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

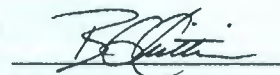
DOCUMENTATION/ DATA ATTACHED:

- 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
B.G. Chittim, General Manager (mm/dd/yyyy)

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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: _____



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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

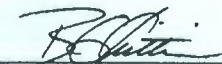
DOCUMENTATION/ DATA ATTACHED:

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.

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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:	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: _____

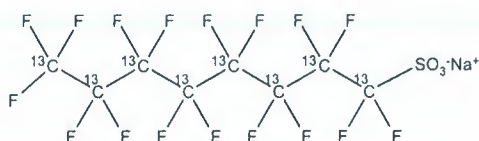
200721-16



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-[¹³C₄]octanesulfonate (MPFOS).

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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:	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:

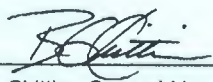
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

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)

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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								

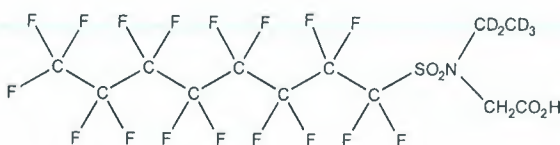
Notes:

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 **MOLECULAR WEIGHT:** 590.26
CONCENTRATION: 50.0 ± 2.5 µg/ml **SOLVENT(S):** Methanol
Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥98% ²H₅
LAST TESTED: (mm/dd/yyyy) 05/20/2020
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.
- 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: 05/22/2020
(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:

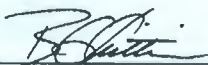
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

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)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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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: _____

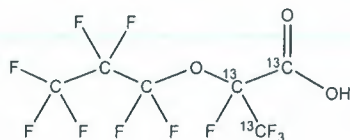


WELLINGTON LABORATORIES

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: ¹³C₃¹²C₃HF₁₁O₃ **MOLECULAR WEIGHT:** 333.03
CONCENTRATION: 50.0 ± 2.5 µg/ml **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 05/13/2020 **(¹³C₃)**
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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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: _____

200721-21



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: $^{13}\text{C}_2^{12}\text{C}_8\text{HF}_{19}\text{O}_2$ **MOLECULAR WEIGHT:** 516.07
CONCENTRATION: 50.0 \pm 2.5 $\mu\text{g/ml}$ **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** \geq 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:

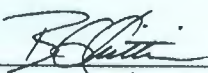
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

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)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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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: _____

200721-22



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:

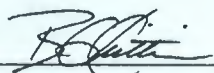
Figure 1: LC/MS Data (TIC and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

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:


 B.G. Chittim, General Manager

Date: 01/15/2020
 (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 Val:	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: _____

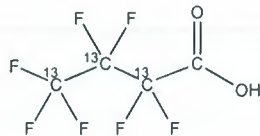


WELLINGTON LABORATORIES

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
LAST TESTED: (mm/dd/yyyy) 02/24/2020 (2,3,4-¹³C₃)
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:  **Date:** 03/27/2020
B.G. Chittim, General Manager (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: _____

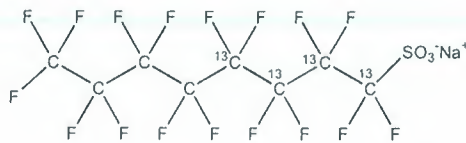


WELLINGTON LABORATORIES

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

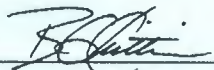
DOCUMENTATION/ DATA ATTACHED:

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 Val:	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:

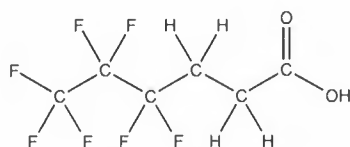
Approved by: _____ **Approved on:** _____
Authorized by: _____ **Authorized on:** _____



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPrPA **LOT NUMBER:** FPrPA1219
COMPOUND: 3-Perfluoropropyl propanoic acid
STRUCTURE: **CAS #:** 356-02-5



MOLECULAR FORMULA: $C_6H_5F_7O_2$ **MOLECULAR WEIGHT:** 242.09
CONCENTRATION: $50 \pm 2.5 \mu\text{g/ml}$ **SOLVENT(S):** Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/07/2020
EXPIRY DATE: (mm/dd/yyyy) 01/07/2023
RECOMMENDED STORAGE: Refrigerate ampoule

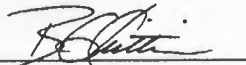
DOCUMENTATION/ DATA ATTACHED:

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% of the unsaturated 3:3 telomer acid ($C_6H_3F_7O_2$) as an impurity determined by ^{19}F NMR.

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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 Val:	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

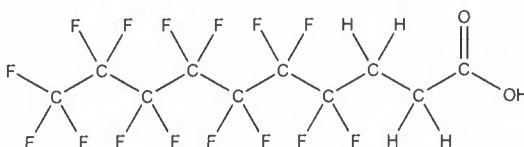
Total Analytes: 1

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

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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:** _____



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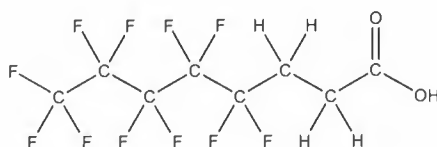
CERTIFICATE OF ANALYSIS DOCUMENTATION

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)

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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-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:** _____



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
50.0 0.007 Flask Uncertainty

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

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-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. Tricosafuorododecanolic 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-Chloroicosafuoro-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-butyric 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#
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	50.3	1.01	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	cr-rat 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	ori-rat 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. Tricosfluorododecanoic acid	99196	010820	0.02	1.00	0.004	50.1	1.00	0.01	307-55-1	N/A	N/A
10. Perfluortridecanoic acid	99204	110419	0.02	1.00	0.004	50.1	1.00	0.01	72529-94-8	N/A	N/A
11. Perfluortetradecanoic 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 (linear)*	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	LPFH6S0120	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	LPFNS1119	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	LPFDS1119	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-tetrafluoropropanoic 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	11ClPF30udS0320	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	9ClPF30NS0420	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	cr-rat 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	cr-rat 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.C., "Guidelines for Expressing and Reporting 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	072820	DATE
Reviewed By: Pedro L. Rentas	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-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)*	99196	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. 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	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-Chlorohexadecafluoro-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. 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	335-87-1	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)*	99196	091219	0.02	1.00	0.004	50.0	1.00	0.01	355-48-4	N/A	N/A
Perfluorohexanesulfonic acid (branched isomer)*	99196	091219	0.02	1.00	0.004	0.6	0.01	0.0002	355-48-4	N/A	N/A
Heptadecafluorooctanesulfonic acid (linear)*	99201	021820	0.02	1.00	0.004	38.2	0.78	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
Heptadecafluorooclanesulfonic 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)*	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)*	4182	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
20-1455	
CTO-4532: PFAS in Water	
GW	
SOP Numbers (see workplan for modifications)	
ExtractionSOP No.	5-370

This Batch Contains The Following Samples:
DB332PB-FS DB333LCS-FS G1707-FS1 G1708-FS1

Laboratory Preparation Records
COMPLETE AND VALIDATED

Prep Task Leader: Lauren Griffith

Approved By:	Date	Initials
Denise Schumitz	11/13/2020	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

20-1455**CTO-4532: PFAS in Water****GW**

Sample ID	Description
DB332PB-FS	Procedural Blank
DB333LCS-FS	Laboratory Control Sample
G1707-FS1	CBD-AOA-MW15-1020
G1708-FS1	CBD-AOA-MW16-1020

Samples Assigned By:

Lauren Griffith

Date : November 9, 2020

Comments: re-extracts from 20-1310



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

20-1455

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

Requested On/By: 11/10/2020 LMG	Purpose: Sample Preparation					
Relinquished On/By: 11/10/2020 MDS	Last Activity: Transfer					
Accepted On/By: 11/10/2020 KH Stored In Facility: Sample Preparation Stored Until: Stored Comment: NA	Returned On/To: Returned To Facility: Returned Comment: NA					
No.	BDO-ID:	Ctrs	*	Condition:	Custody Comment:	
1	G1707	2	C	Consumed	NA	
2	G1708	4	C	Consumed	NA	
Total Samples		2		* "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

20-1455

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

Sample ID	Description	Volume (mL)	Bottles	*	Date Initials
DB332PB-FS	Procedural Blank	250.0	NA	--	11/10/20 AW
DB333LCS-FS	Laboratory Control Sample	250.0	NA	--	11/10/20 AW
G1707-FS1	CBD-AOA-MW15-1020	260.0	2	C	11/12/20 TN
G1708-FS1	CBD-AOA-MW16-1020	265.0	4	C	11/12/20 TN

Comments:

Samples Assigned By:

Lauren Griffith

Date : November 9, 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

20-1455

CTO-4532: PFAS in Water

GW

Sample ID	Standard ID	Type	Vial No.	Vol Added (uL)	Date Spiked/ Spiked By	Witn'd By	Comment
DB332PB-FS	LE39	SIS	2	125	11/10/20 KH	AW	NA
DB333LCS-FS	LE23	LCS/MS	1	100	11/10/20 KH	AW	NA
DB333LCS-FS	LE39	SIS	2	125	11/10/20 KH	AW	NA
G1707-FS1	LE39	SIS	2	125	11/10/20 KH	AW	NA
G1708-FS1	LE39	SIS	2	125	11/10/20 KH	AW	NA

Syringes/Pipettes Used:

Std ID	Type	Syr/Pip
LE23	Pipette	B814657482
LE39	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

20-1455

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

Sample ID	1st Extraction	2nd Extraction	3rd Extraction	Conc. ID	Turbo °C	Turbo PSI	KD °C	Comment
DB332PB-FS	11/10/20 KH	NA	NA	NEVAP_3	NA	NA	NA	NA
DB333LCS-FS	11/10/20 KH	NA	NA	NEVAP_3	NA	NA	NA	NA
G1707-FS1	11/10/20 AW	NA	NA	NEVAP_3	NA	NA	NA	NA
G1708-FS1	11/10/20 AW	NA	NA	NEVAP_3	NA	NA	NA	NA

Solvents/Reagent Preparations:

Name	ID	Expires	Lot No	Procedure	Comments
pH Indicator Strips 0-14	200923-01	09/23/25	10D0401	NA	
0.5% NH3 in Methanol (w/v)	RP-201110-2	11/10/20	A0409799	Per 100 mL, 4.25 mL ammonia solution brought to 100 mL with methanol	
0.5% NH3 in Methanol (w/v)	RP-201110-2	11/10/20	202167	Per 100 mL, 4.25 mL ammonia solution brought to 100 mL with methanol	
Pre-packed SPE Column	RP-201110-4	11/10/20	S308-0116/S20-004413	Pre-packed SPE Column	

Solvents/Reagents:

Name	Lot No	Comments
Methanol HPLC (201009-01)	202167	



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

20-1455

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

Extract Id	Date	Init.	Comments
DB332PB-FS(0)	11/10/20	AW	NA
DB333LCS-FS(0)	11/10/20	AW	NA
G1707-FS1(0)	11/10/20	AW	NA
G1708-FS1(0)	11/10/20	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

20-1455

**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

20-1455

**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
DB332PB-FS(0)	875	125	LE40	125	1	1000	1.000	11/11/20 KB	BTM
DB333LCS-FS(0)	875	125	LE40	125	1	1000	1.000	11/11/20 KB	BTM
G1707-FS1(0)	875	125	LE40	125	1	1000	1.000	11/11/20 KB	BTM
G1707-FS1-D(3)	900	100	LE40	125	1	1000	5.000	11/11/20 KB	BTM
G1707-FS1-D(5)	925	75	LE40	125	1	1000	12.500	11/11/20 KB	BTM
G1708-FS1(0)	875	125	LE40	125	1	1000	1.000	11/11/20 KB	BTM

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

20-1455

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
G1707-FS1-D(3)	5	LE39	SIS	2	100	0	0	11/11/20 KB	BTM
G1707-FS1-D(5)	12.5	LE39	SIS	2	75	0	0	11/11/20 KB	BTM

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

20-1455**CTO-4532: PFAS in Water****GW**

Extract		*	Extract Date	Source		Initial Extract Vol (uL)	Extract Split	Extract Split	Total Dilution	Date/Initials
Name	#			Name	#					
DB332PB-FS	0	--	11/10/2020 12:27:00 PM	NA		NA	NA	1.000	1.000	11/10/20 KH
DB333LCS-FS	0	--	11/10/2020 12:27:00 PM	NA		NA	NA	1.000	1.000	11/10/20 KH
G1707-FS1	0	C	11/10/2020 12:27:00 PM	NA		NA	NA	1.000	1.000	11/10/20 AW
G1707-FS1	2	--	11/11/2020 1:21:00 PM	G1707-FS1	0	1000	800	1.250	1.250	11/11/20 KB
G1707-FS1-D	3	C	11/11/2020 1:21:00 PM	G1707-FS1	0	1000	200	5.000	5.000	11/11/20 KB
G1707-FS1-D	4	--	11/11/2020 1:24:00 PM	G1707-FS1-D	3	1000	600	1.667	8.333	11/11/20 KB
G1707-FS1-D	5	--	11/11/2020 1:24:00 PM	G1707-FS1-D	3	1000	400	2.500	12.500	11/11/20 KB
G1708-FS1	0	--	11/10/2020 12:27:00 PM	NA		NA	NA	1.000	1.000	11/10/20 AW

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

20-1455

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

Purpose: LC-MS/MS TRANSFER		Last Activity: Prep->Inst			
Relinquished On/By: Nov 11 2020 4:45PM KH		Received On/By: Nov 11 2020 4:45PM LMG			
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	DB332PB-FS(0)	1000	1	Intact	NA
2	DB333LCS-FS(0)	1000	1	Intact	NA
3	G1707-FS1(0)	1000	1	Intact	NA
4	G1707-FS1-D(3)	1000	5	Intact	NA
5	G1707-FS1-D(5)	1000	12.5	Intact	NA
6	G1708-FS1(0)	1000	1	Intact	NA
Total Extracts:		6			



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

20-1455**CTO-4532: PFAS in Water****GW**

Sample ID:	Comment:	Date/Initials:
DB332PB-FS	Sample was fortified per project plan, poured in to a centrifuge bottle and centrifuged at 3500 rpm for 5 minutes. Sample was then poured back into original container and centrifuge bottle was kept.	11/10/20 AW
DB332PB-FS	Extraction began at 12:27 PM, DW manifold, ended at 1:28 PM.	11/10/20 KH
DB333LCS-FS	Sample was fortified per project plan, poured in to a centrifuge bottle and centrifuged at 3500 rpm for 5 minutes. Sample was then poured back into original container and centrifuge bottle was kept.	11/10/20 AW
DB333LCS-FS	Extraction began at 12:27 PM, DW manifold, ended at 1:35 PM.	11/10/20 KH
G1707-FS1	Sample was fortified per project plan, poured in to a centrifuge bottle and centrifuged at 3500 rpm for 5 minutes. Sample was then poured back into original container and centrifuge bottle was kept.	11/10/20 AW
G1707-FS1	Extraction began at 12:27 PM, manifold 5, ended at 2:03 PM.	11/10/20 AW
G1708-FS1	Sample was fortified per project plan, poured in to a centrifuge bottle and centrifuged at 3500 rpm for 5 minutes. Sample was then poured back into original container and centrifuge bottle was kept.	11/10/20 AW
G1708-FS1	Extraction began at 12:27 PM, manifold 5, ended at 2:14 PM.	11/10/20 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

20-1455

**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: 12/11/2020 3:55:39 PM

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
1	MEOH		11/11/2020 3:08:05 AM	5-0369.dam	AC_11112020_5-369.wiff
2	LD74	L1	11/11/2020 3:18:58 AM	5-0369.dam	AC_11112020_5-369.wiff
3	LD75	L2	11/11/2020 3:29:49 AM	5-0369.dam	AC_11112020_5-369.wiff
4	LD76	L3	11/11/2020 3:40:39 AM	5-0369.dam	AC_11112020_5-369.wiff
5	LD77	L4	11/11/2020 3:51:31 AM	5-0369.dam	AC_11112020_5-369.wiff
6	LD78	L5	11/11/2020 4:02:22 AM	5-0369.dam	AC_11112020_5-369.wiff
7	LD79	L6	11/11/2020 4:13:13 AM	5-0369.dam	AC_11112020_5-369.wiff
8	LD80 IB	Instrument Blank	11/11/2020 4:24:05 AM	5-0369.dam	AC_11112020_5-369.wiff
9	LD81 ICC	ICC	11/11/2020 4:34:56 AM	5-0369.dam	AC_11112020_5-369.wiff
10	LE25 BRANCHED	Branched Standard	11/11/2020 4:45:47 AM	5-0369.dam	AC_11112020_5-369.wiff



Sequence Report

Created with Analyst Reporter
Printed: 12/11/2020 3:57:47 PM

Vial	Laboratory Sample ID	Client Sample ID	Acquisition Date	Acquisition Method	Data File
1	MEOH		11/12/2020 9:22:03 AM	5-0369.dam	AC_11122020_5-369.wiff
2	LD76 CCV	CCV	11/12/2020 9:32:55 AM	5-0369.dam	AC_11122020_5-369.wiff
3	LD79	L6	11/12/2020 9:43:46 AM	5-0369.dam	AC_11122020_5-369.wiff
4	LD80 IB	IB	11/12/2020 9:54:37 AM	5-0369.dam	AC_11122020_5-369.wiff
5	MEOH		11/12/2020 10:28:23 AM	5-0369.dam	AC_11122020_5-369.wiff
6	DB100PB-FS(0)		11/12/2020 10:39:14 AM	5-0369.dam	AC_11122020_5-369.wiff
7	DB101LCS-FS(0)		11/12/2020 10:50:07 AM	5-0369.dam	AC_11122020_5-369.wiff
8	G2025MSD-FS(0)		11/12/2020 11:00:57 AM	5-0369.dam	AC_11122020_5-369.wiff
9	G2032-FS(0)		11/12/2020 11:11:50 AM	5-0369.dam	AC_11122020_5-369.wiff
10	G2026-FS(0)		11/12/2020 11:22:41 AM	5-0369.dam	AC_11122020_5-369.wiff
11	G2026MS-FS(0)		11/12/2020 11:33:32 AM	5-0369.dam	AC_11122020_5-369.wiff
12	G2026MSD-FS(0)		11/12/2020 11:44:26 AM	5-0369.dam	AC_11122020_5-369.wiff
13	MEOH		11/12/2020 11:55:17 AM	5-0369.dam	AC_11122020_5-369.wiff
14	LD77 CCV		11/12/2020 12:06:09 PM	5-0369.dam	AC_11122020_5-369.wiff
15	G2027-FS(0)		11/12/2020 12:17:00 PM	5-0369.dam	AC_11122020_5-369.wiff
16	G2028-FS(0)		11/12/2020 12:27:52 PM	5-0369.dam	AC_11122020_5-369.wiff
17	G2029-FS(0)		11/12/2020 12:38:45 PM	5-0369.dam	AC_11122020_5-369.wiff
18	G2030-FS(0)		11/12/2020 12:49:37 PM	5-0369.dam	AC_11122020_5-369.wiff
19	G2031-FS(0)		11/12/2020 1:00:29 PM	5-0369.dam	AC_11122020_5-369.wiff
20	MEOH		11/12/2020 1:11:22 PM	5-0369.dam	AC_11122020_5-369.wiff
21	LD78 CCV	CCV	11/12/2020 1:22:15 PM	5-0369.dam	AC_11122020_5-369.wiff
22	MEOH		11/12/2020 1:33:07 PM	5-0369.dam	AC_11122020_5-369.wiff
23	DB322PB-FS(0)	Procedural Blank	11/12/2020 1:44:00 PM	5-0369.dam	AC_11122020_5-369.wiff
24	DB323LCS-FS(0)	Laboratory Control Sample	11/12/2020 1:54:52 PM	5-0369.dam	AC_11122020_5-369.wiff
25	G1707-FS1(0)	CBD-AOA-MW15-1020	11/12/2020 2:05:44 PM	5-0369.dam	AC_11122020_5-369.wiff
26	G1707-FS1-D(3)	CBD-AOA-MW15-1020	11/12/2020 2:16:36 PM	5-0369.dam	AC_11122020_5-369.wiff
27	G1707-FS1-D(5)	CBD-AOA-MW15-1020	11/12/2020 2:27:29 PM	5-0369.dam	AC_11122020_5-369.wiff
28	G1708-FS1(0)	CBD-AOA-MW16-1020	11/12/2020 2:38:21 PM	5-0369.dam	AC_11122020_5-369.wiff
29	MEOH		11/12/2020 2:49:13 PM	5-0369.dam	AC_11122020_5-369.wiff
30	LD77 CCV	CCV	11/12/2020 3:00:38 PM	5-0369.dam	AC_11122020_5-369.wiff

1 Samples do not apply to this batch. LMG 11/12/2020



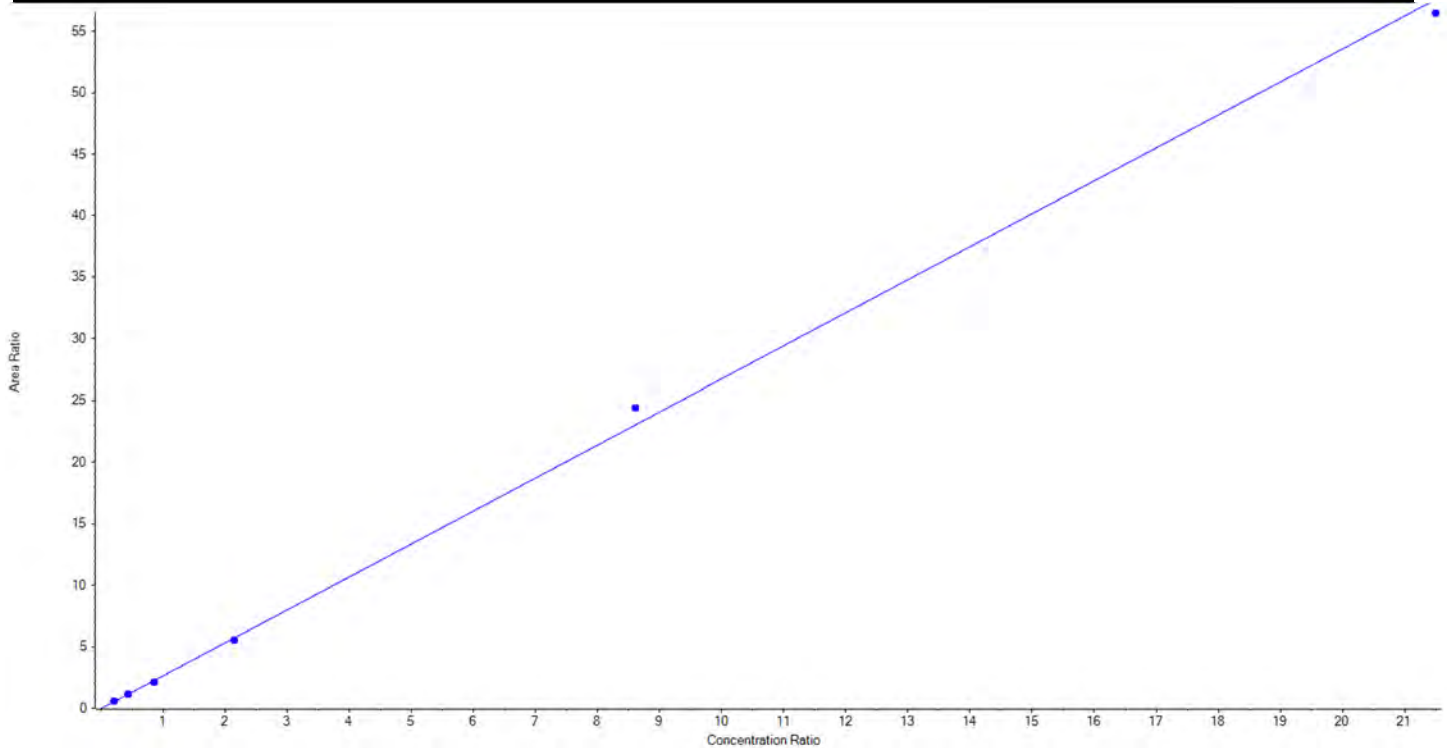
Calibration Summary Report

Created with Analyst Reporter
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Analyte Name	PFBS_1	Data File	AC_11112020_5-369.wiff
MRM Transition	298.9 / 80.0	Result Table	20-1455
Internal Standard	13C3-PFBS	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 2.67941 x + -0.04084$ ($r = 0.99919$) (weighting: $1 / x$) $r^2:0.9984$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	253.28	101.3
3	LD75	L2	True	500.00	523.34	104.7
4	LD76	L3	True	1000.00	936.45	93.7
5	LD77	L4	True	2500.00	2403.76	96.2
6	LD78	L5	True	10000.00	10615.61	106.2
7	LD79	L6	True	25000.00	24517.56	98.1





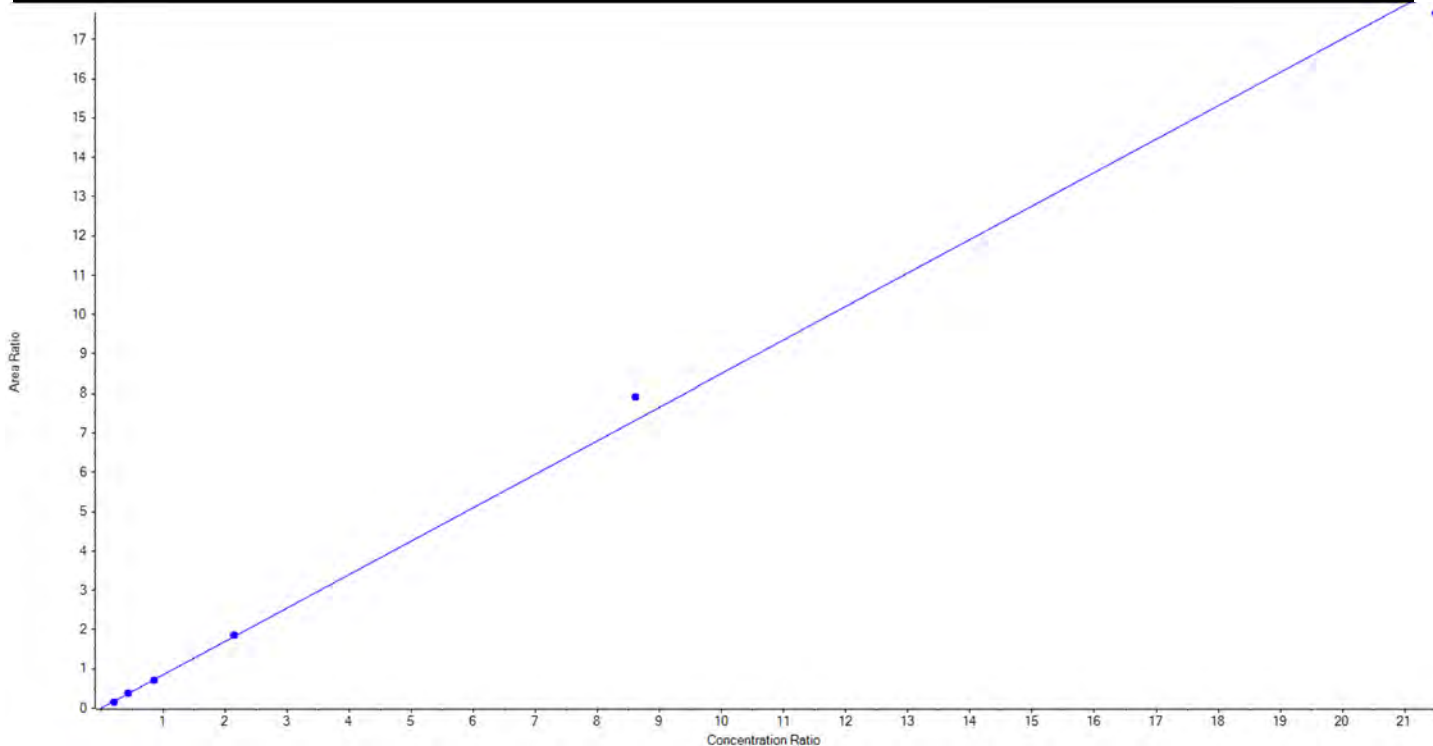
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Analyte Name	PFBS_2	Data File	AC_11112020_5-369.wiff
MRM Transition	298.9 / 99.0	Result Table	20-1455
Internal Standard	13C3-PFBS	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.85064x + -3.00710e-4$ ($r = 0.99849$) (weighting: $1/x$) $r^2:0.9970$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	223.41	89.4
3	LD75	L2	True	500.00	529.18	105.8
4	LD76	L3	True	1000.00	988.54	98.9
5	LD77	L4	True	2500.00	2524.55	101.0
6	LD78	L5	True	10000.00	10837.71	108.4
7	LD79	L6	True	25000.00	24146.61	96.6





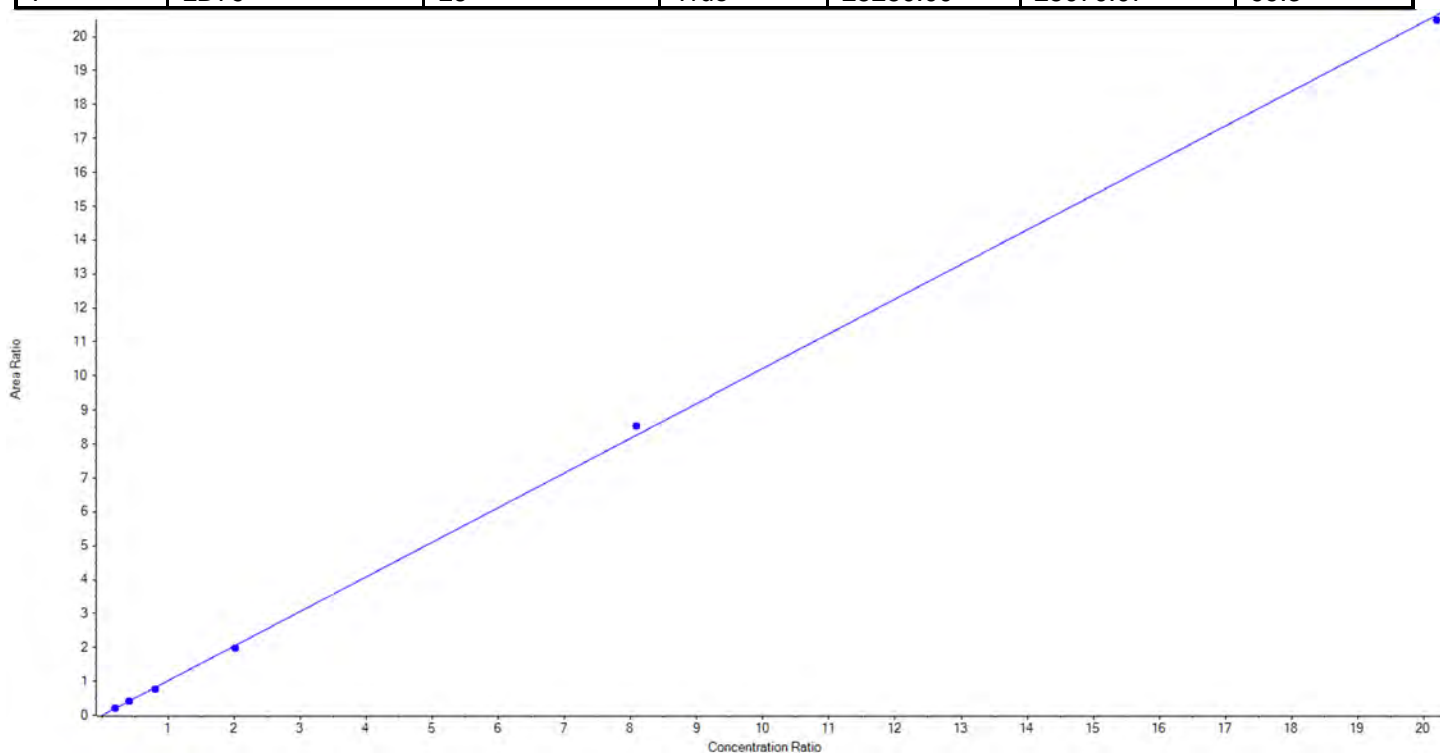
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Analyte Name	PFHxA_1	Data File	AC_11112020_5-369.wiff
MRM Transition	313.0 / 269.0	Result Table	20-1455
Internal Standard	13C5-PFHxA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.02167x + -0.00255$ ($r = 0.99966$) (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	LD74	L1	True	252.50	267.05	105.8
3	LD75	L2	True	505.00	519.48	102.9
4	LD76	L3	True	1010.00	944.13	93.5
5	LD77	L4	True	2525.00	2405.75	95.3
6	LD78	L5	True	10100.00	10436.02	103.3
7	LD79	L6	True	25250.00	25070.07	99.3





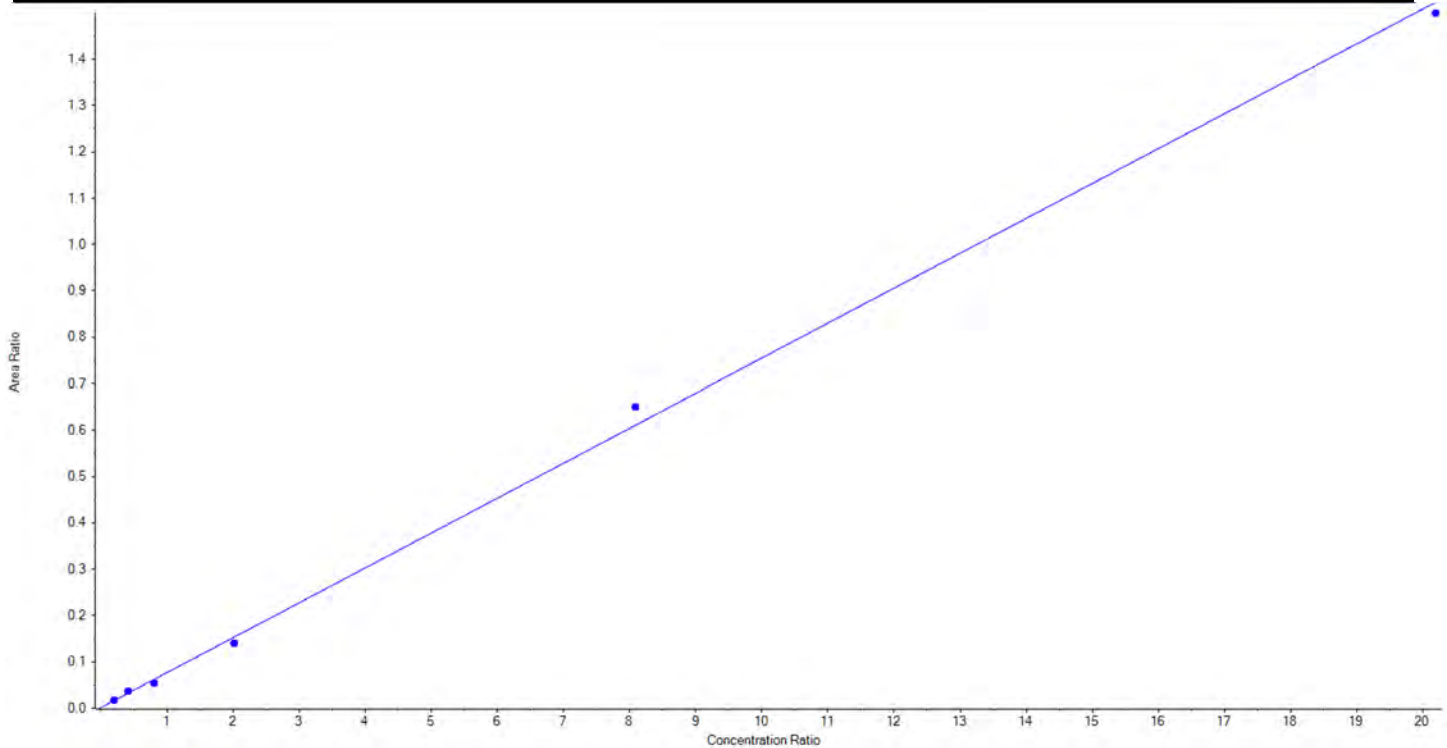
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Analyte Name	PFHxA_2	Data File	AC_11112020_5-369.wiff
MRM Transition	313.0 / 119.0	Result Table	20-1455
Internal Standard	13C5-PFHxA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.07532 x + 0.00181$ ($r = 0.99859$) (weighting: $1/x$) $r^2:0.9972$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	252.50	265.30	105.1
3	LD75	L2	True	505.00	568.33	112.5
4	LD76	L3	True	1010.00	865.38	85.7
5	LD77	L4	True	2525.00	2312.82	91.6
6	LD78	L5	True	10100.00	10773.30	106.7
7	LD79	L6	True	25250.00	24857.36	98.5





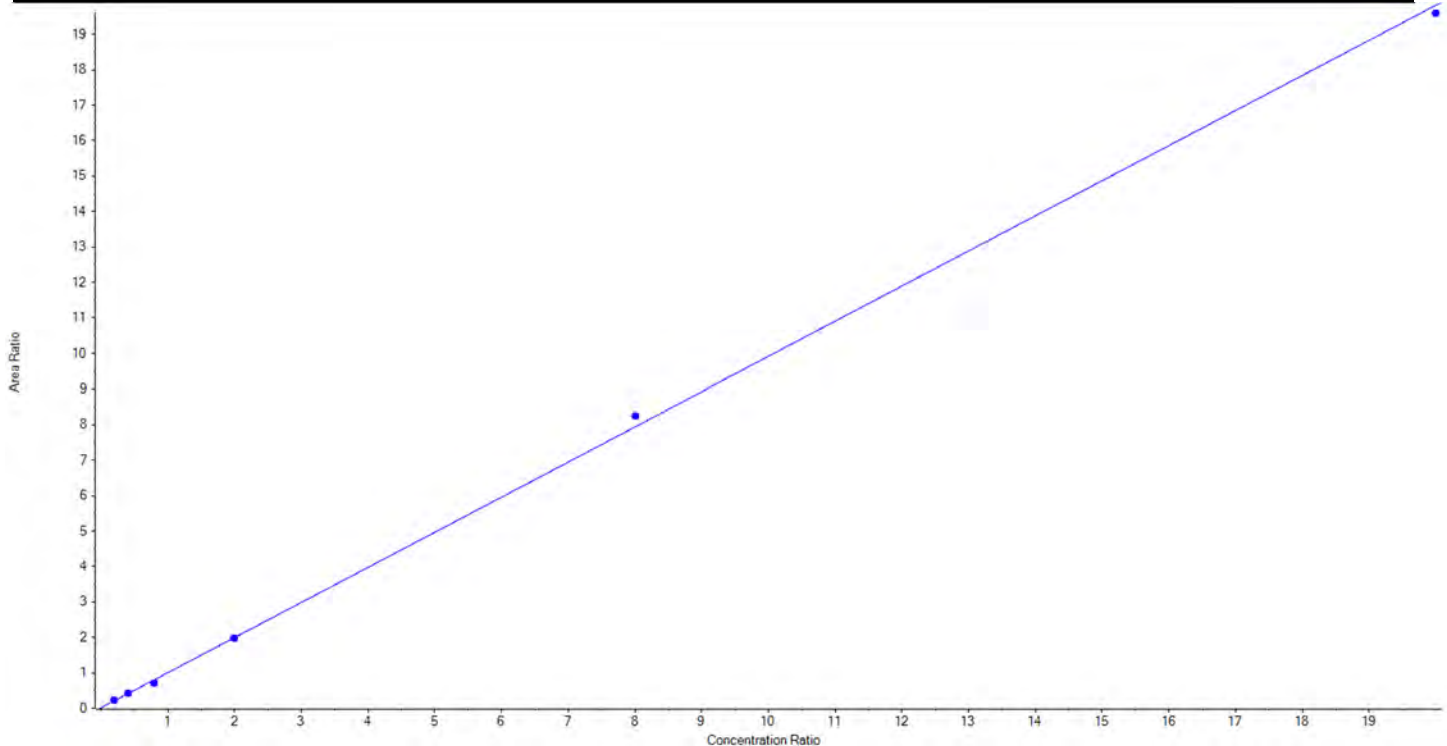
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Analyte Name	PFHpA_1	Data File	AC_11112020_5-369.wiff
MRM Transition	363.0 / 319.0	Result Table	20-1455
Internal Standard	13C4-PFHpA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.99037x + 0.01322$ ($r = 0.99949$) (weighting: $1/x$) $r^2: 0.9990$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	262.18	104.9
3	LD75	L2	True	500.00	527.32	105.5
4	LD76	L3	True	1000.00	875.65	87.6
5	LD77	L4	True	2500.00	2485.68	99.4
6	LD78	L5	True	10000.00	10379.27	103.8
7	LD79	L6	True	25000.00	24719.89	98.9





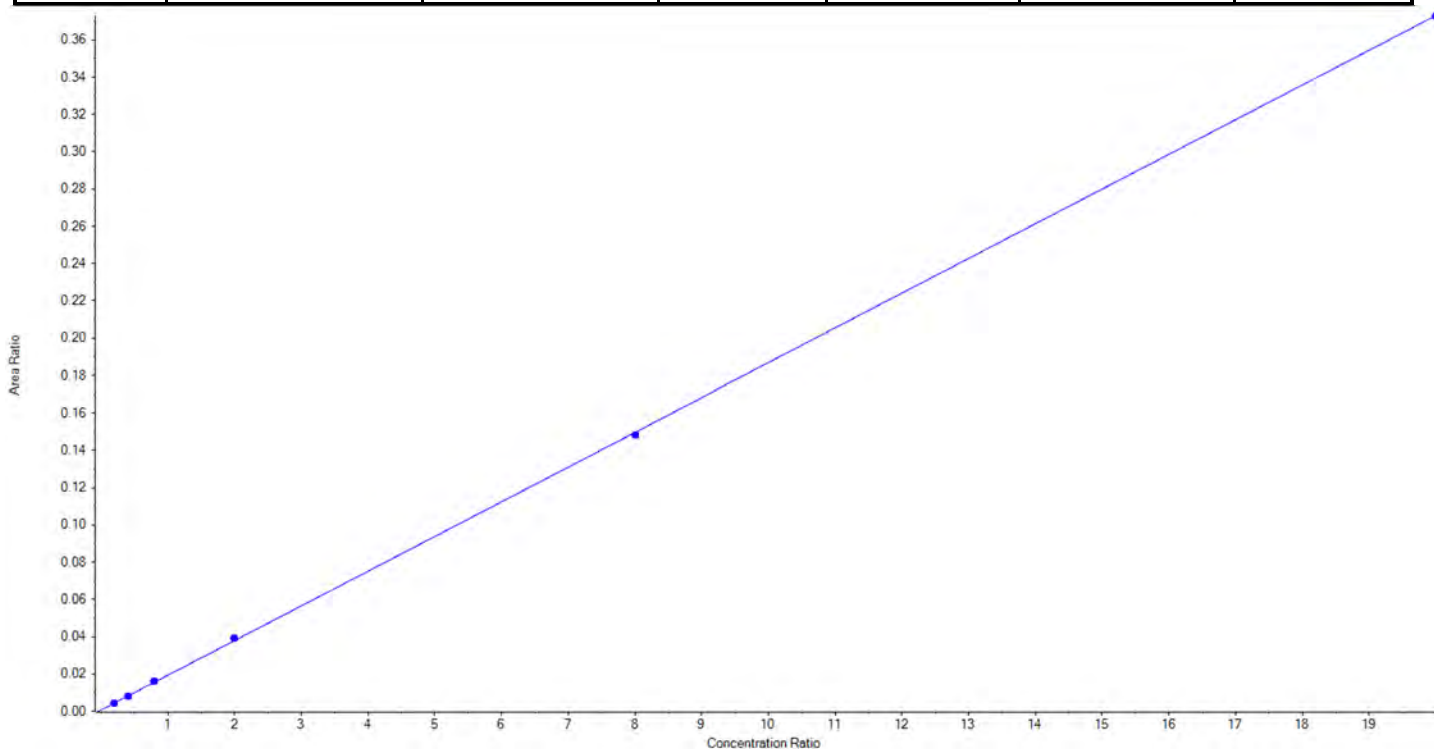
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Analyte Name	PFHpA_2	Data File	AC_11112020_5-369.wiff
MRM Transition	363.0 / 169.0	Result Table	20-1455
Internal Standard	13C4-PFHpA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.01862x + 6.73856e-4$ ($r = 0.99993$) (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	LD74	L1	True	250.00	238.24	95.3
3	LD75	L2	True	500.00	494.72	98.9
4	LD76	L3	True	1000.00	1033.90	103.4
5	LD77	L4	True	2500.00	2581.15	103.3
6	LD78	L5	True	10000.00	9919.33	99.2
7	LD79	L6	True	25000.00	24982.66	99.9





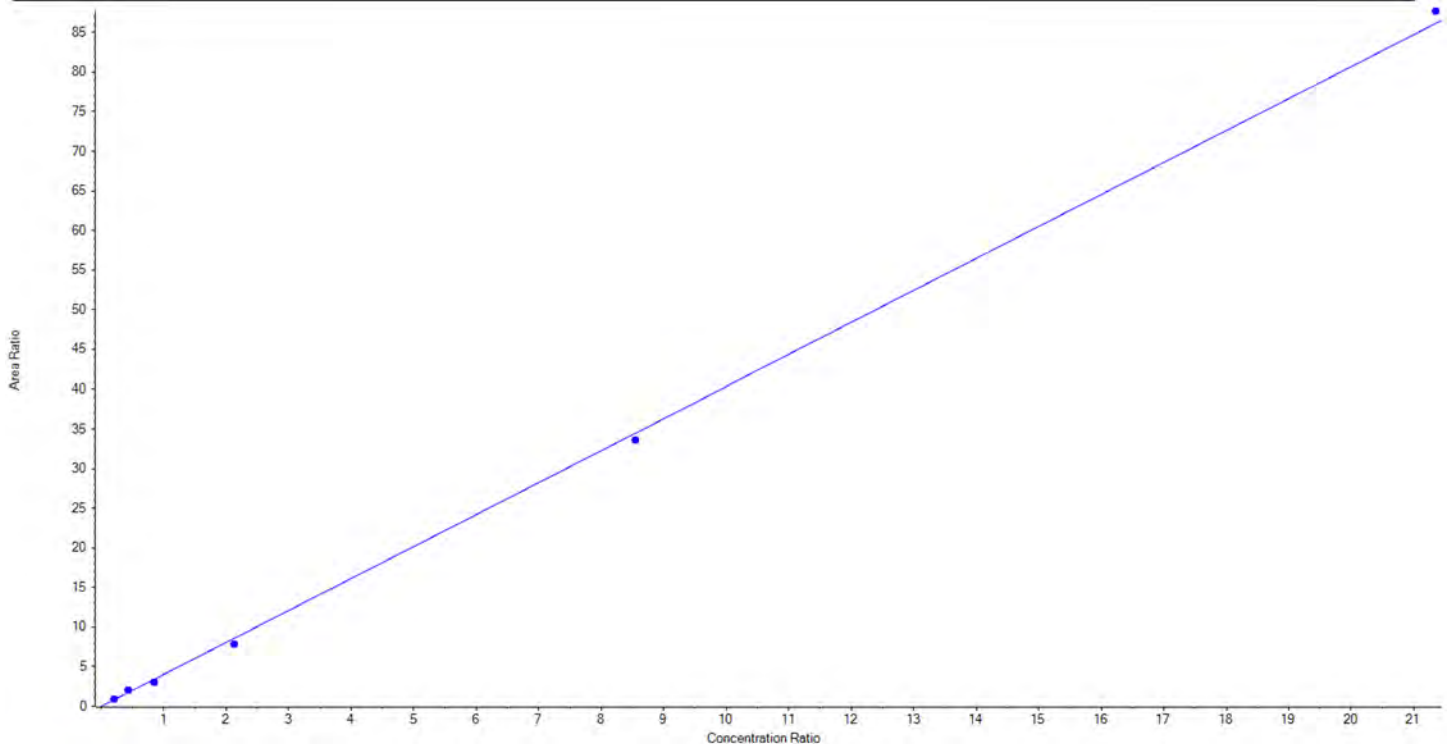
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Analyte Name	PFHxS_1	Data File	AC_11112020_5-369.wiff
MRM Transition	399.0 / 80.0	Result Table	20-1455
Internal Standard	13C3-PFHxS	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 4.03471 x + -0.02275$ ($r = 0.99918$) (weighting: $1 / x$) $r^2: 0.9984$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	252.50	254.14	100.7
3	LD75	L2	True	505.00	595.93	118.0
4	LD76	L3	True	1010.00	911.03	90.2
5	LD77	L4	True	2525.00	2315.93	91.7
6	LD78	L5	True	10100.00	9859.47	97.6
7	LD79	L6	True	25250.00	25706.00	101.8





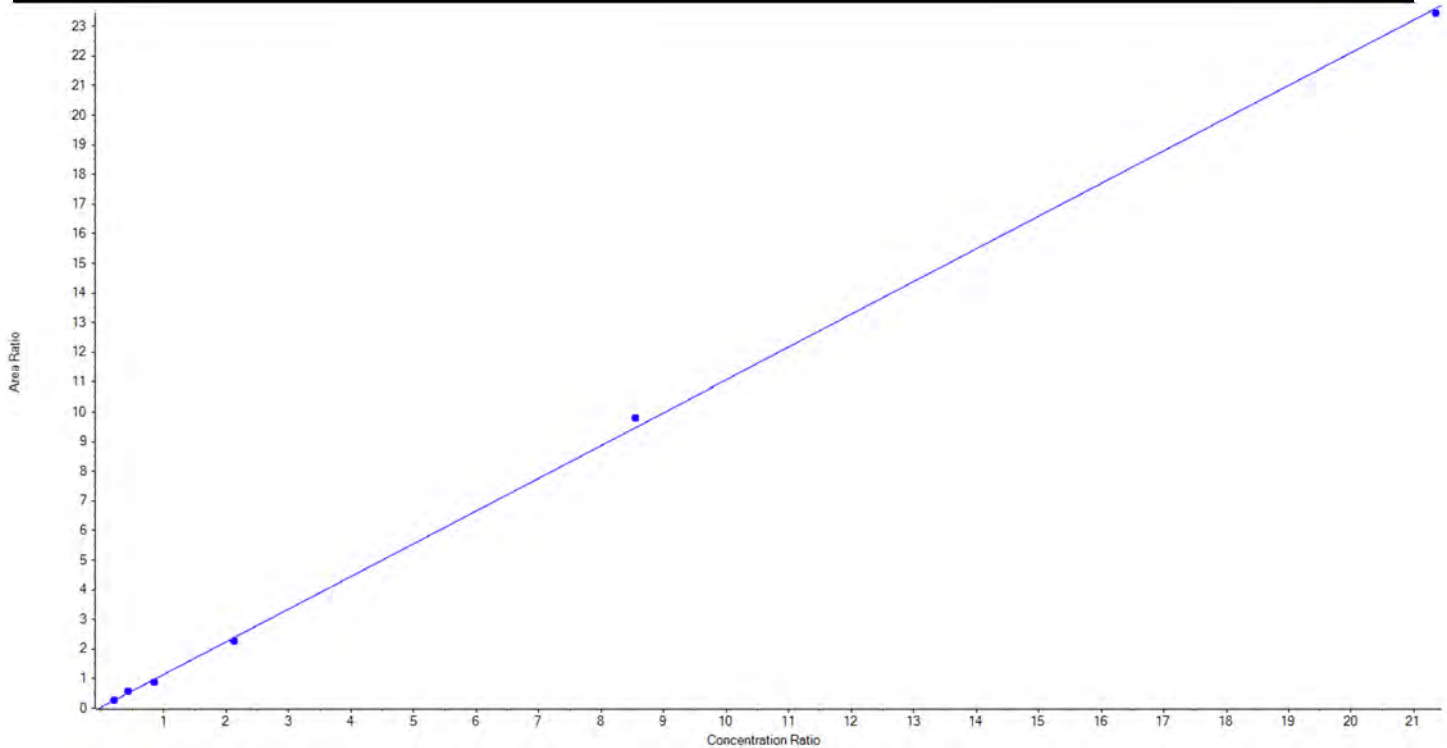
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Analyte Name	PFHxS_2	Data File	AC_11112020_5-369.wiff
MRM Transition	399.0 / 99.0	Result Table	20-1455
Internal Standard	13C3-PFHxS	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.10389x + 0.03423$ ($r = 0.99942$) (weighting: $1/x$) $r^2: 0.9988$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	252.50	250.16	99.1
3	LD75	L2	True	505.00	573.82	113.6
4	LD76	L3	True	1010.00	912.35	90.3
5	LD77	L4	True	2525.00	2378.81	94.2
6	LD78	L5	True	10100.00	10446.12	103.4
7	LD79	L6	True	25250.00	25081.24	99.3





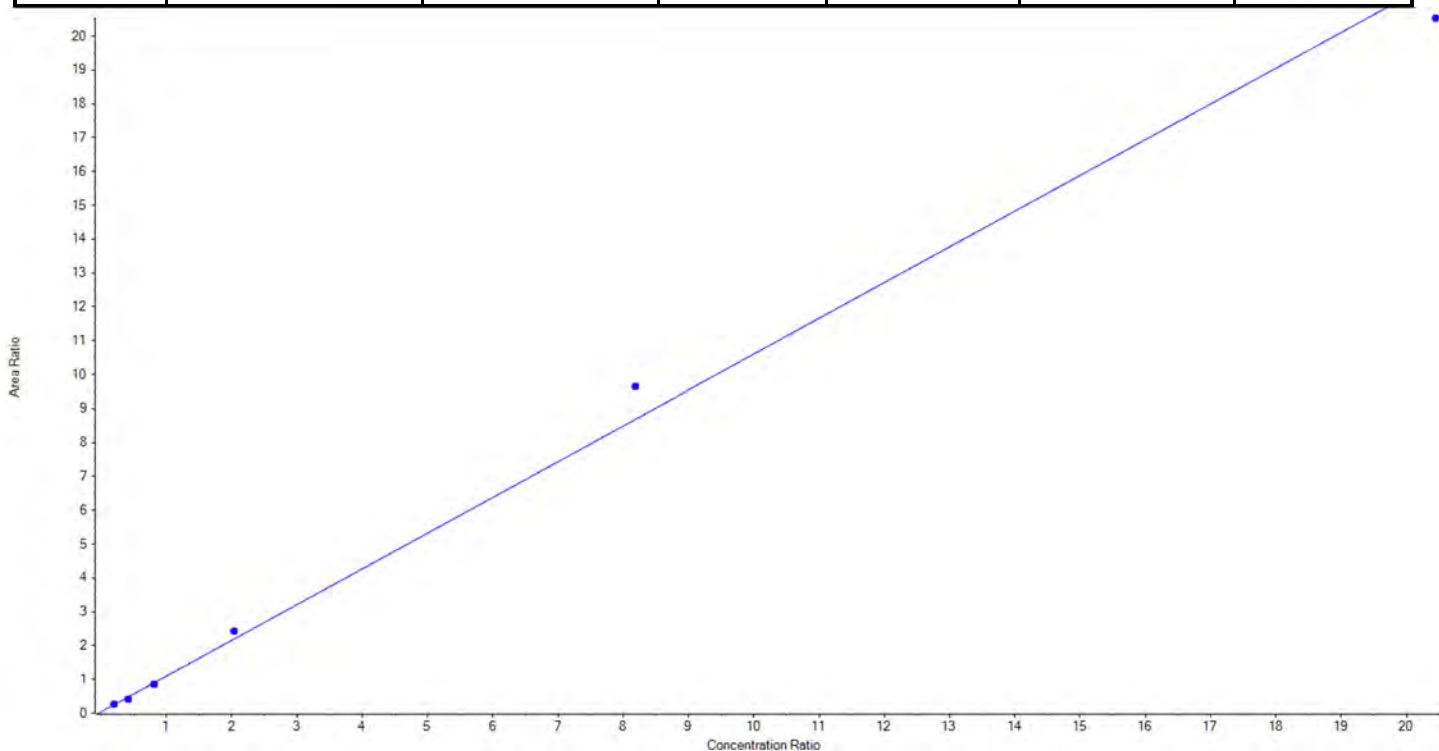
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Analyte Name	PFOA_1	Data File	AC_11112020_5-369.wiff
MRM Transition	413.0 / 369.0	Result Table	20-1455
Internal Standard	13C8-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.05614x + 0.04099$ ($r = 0.99674$) (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	LD74	L1	True	250.00	249.07	99.6
3	LD75	L2	True	500.00	441.64	88.3
4	LD76	L3	True	1000.00	960.31	96.0
5	LD77	L4	True	2500.00	2745.00	109.8
6	LD78	L5	True	10000.00	11133.01	111.3
7	LD79	L6	True	25000.00	23720.98	94.9





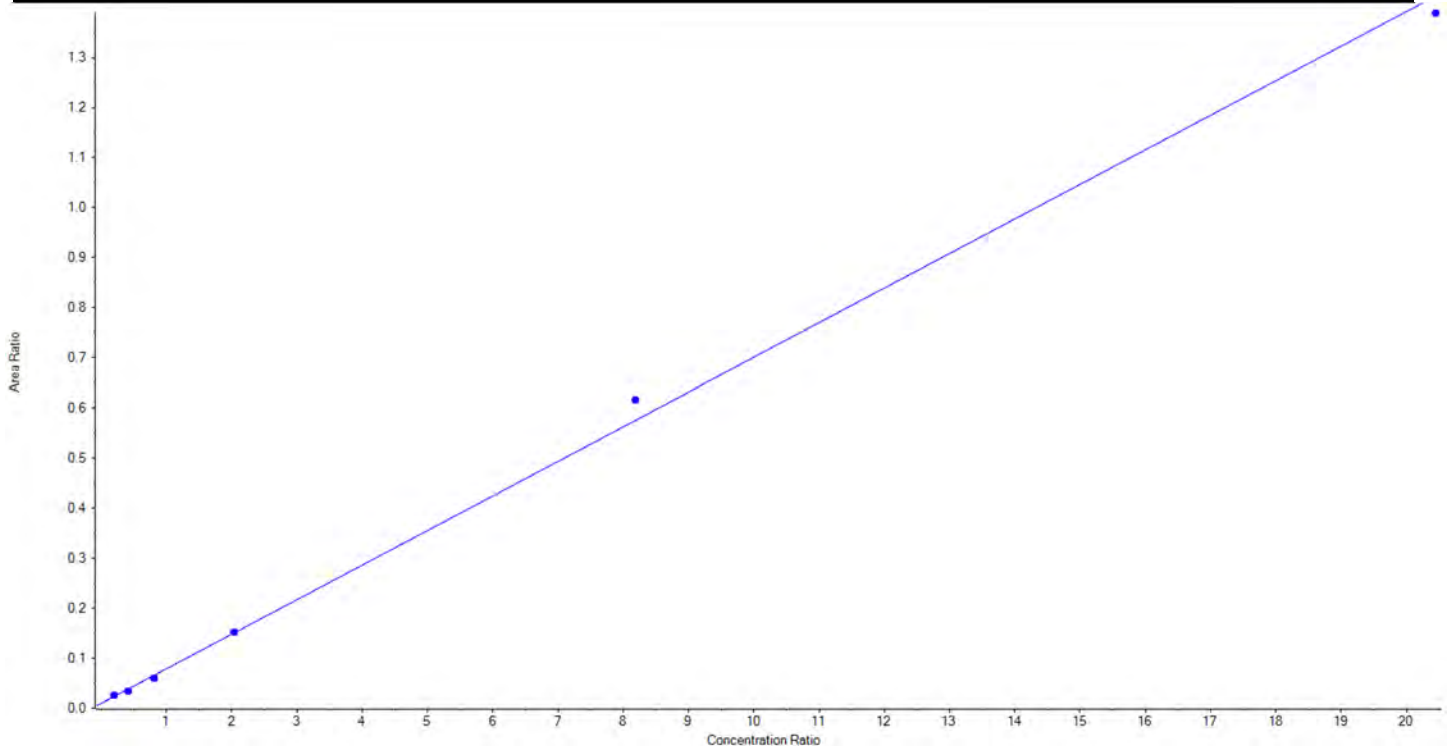
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Analyte Name	PFOA_2	Data File	AC_11112020_5-369.wiff
MRM Transition	413.0 / 169.0	Result Table	20-1455
Internal Standard	13C8-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.06912x + 0.00971$ ($r = 0.99862$) (weighting: $1/x$) $r^2: 0.9972$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	298.43	119.4
3	LD75	L2	True	500.00	425.06	85.0
4	LD76	L3	True	1000.00	904.32	90.4
5	LD77	L4	True	2500.00	2511.33	100.5
6	LD78	L5	True	10000.00	10714.20	107.1
7	LD79	L6	True	25000.00	24396.65	97.6





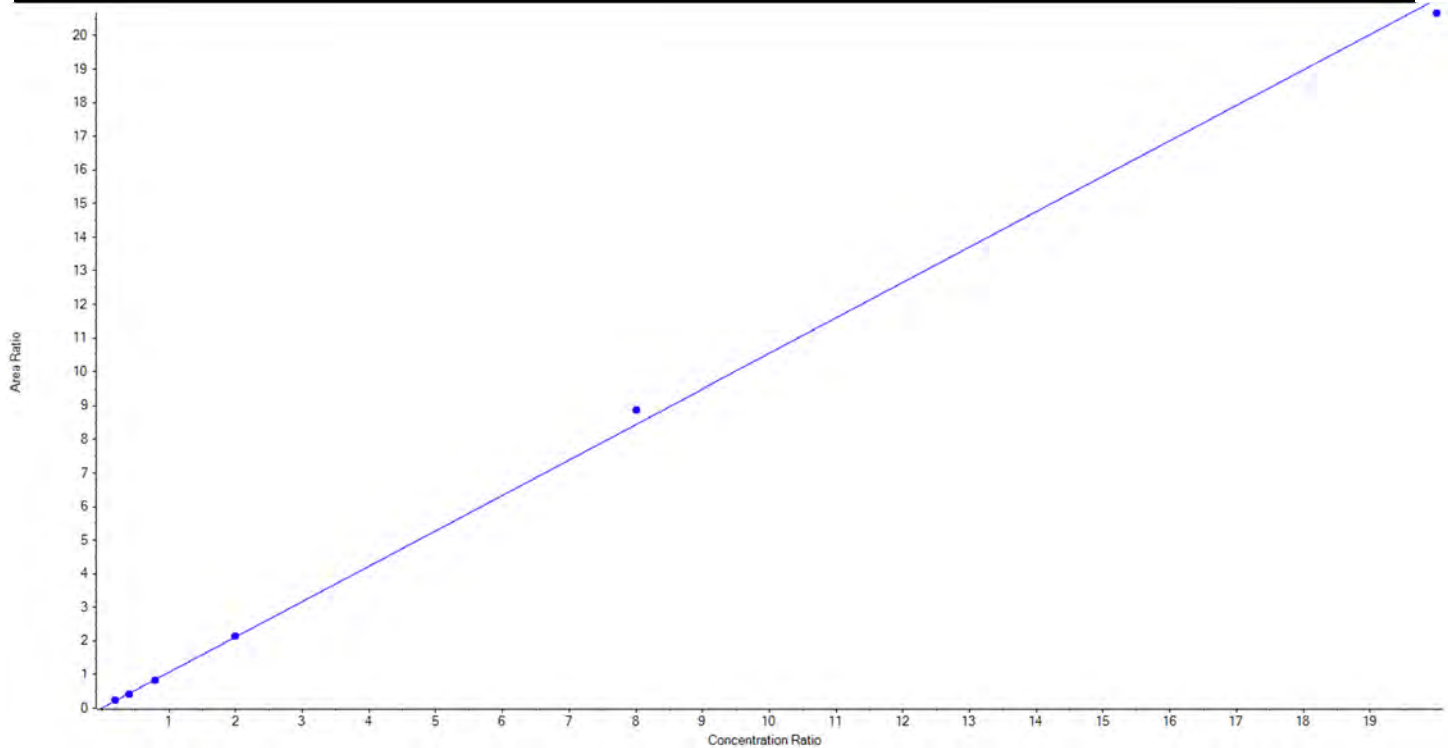
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Analyte Name	PFNA_1	Data File	AC_11112020_5-369.wiff
MRM Transition	463.0 / 419.0	Result Table	20-1455
Internal Standard	13C9-PFNA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.05359x + 0.01104$ ($r = 0.99945$) (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	LD74	L1	True	250.00	253.75	101.5
3	LD75	L2	True	500.00	491.86	98.4
4	LD76	L3	True	1000.00	959.82	96.0
5	LD77	L4	True	2500.00	2524.70	101.0
6	LD78	L5	True	10000.00	10513.03	105.1
7	LD79	L6	True	25000.00	24506.84	98.0





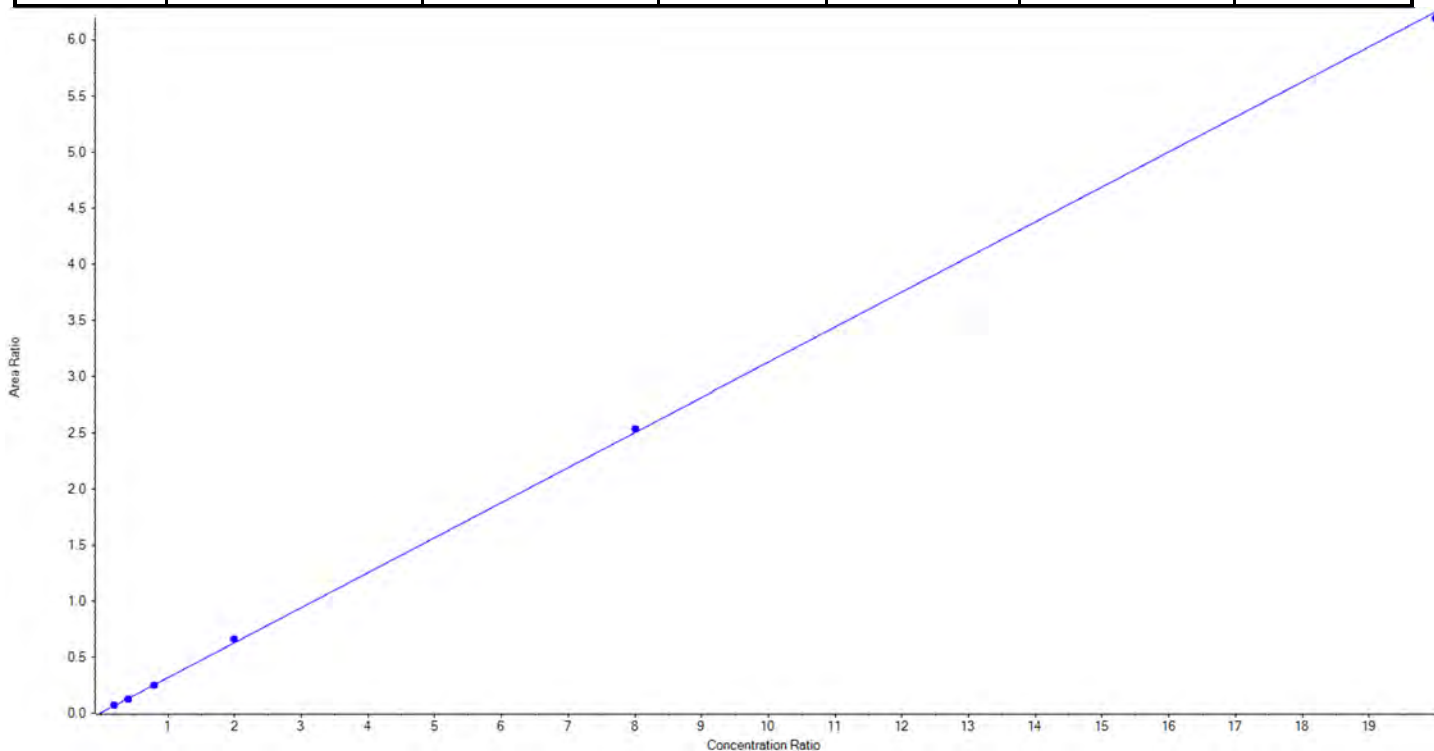
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Analyte Name	PFNA_2	Data File	AC_11112020_5-369.wiff
MRM Transition	463.0 / 219.0	Result Table	20-1455
Internal Standard	13C9-PFNA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.31232 x + 0.00451$ ($r = 0.99983$) (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	LD74	L1	True	250.00	250.85	100.3
3	LD75	L2	True	500.00	484.06	96.8
4	LD76	L3	True	1000.00	971.53	97.2
5	LD77	L4	True	2500.00	2630.71	105.2
6	LD78	L5	True	10000.00	10135.77	101.4
7	LD79	L6	True	25000.00	24777.09	99.1





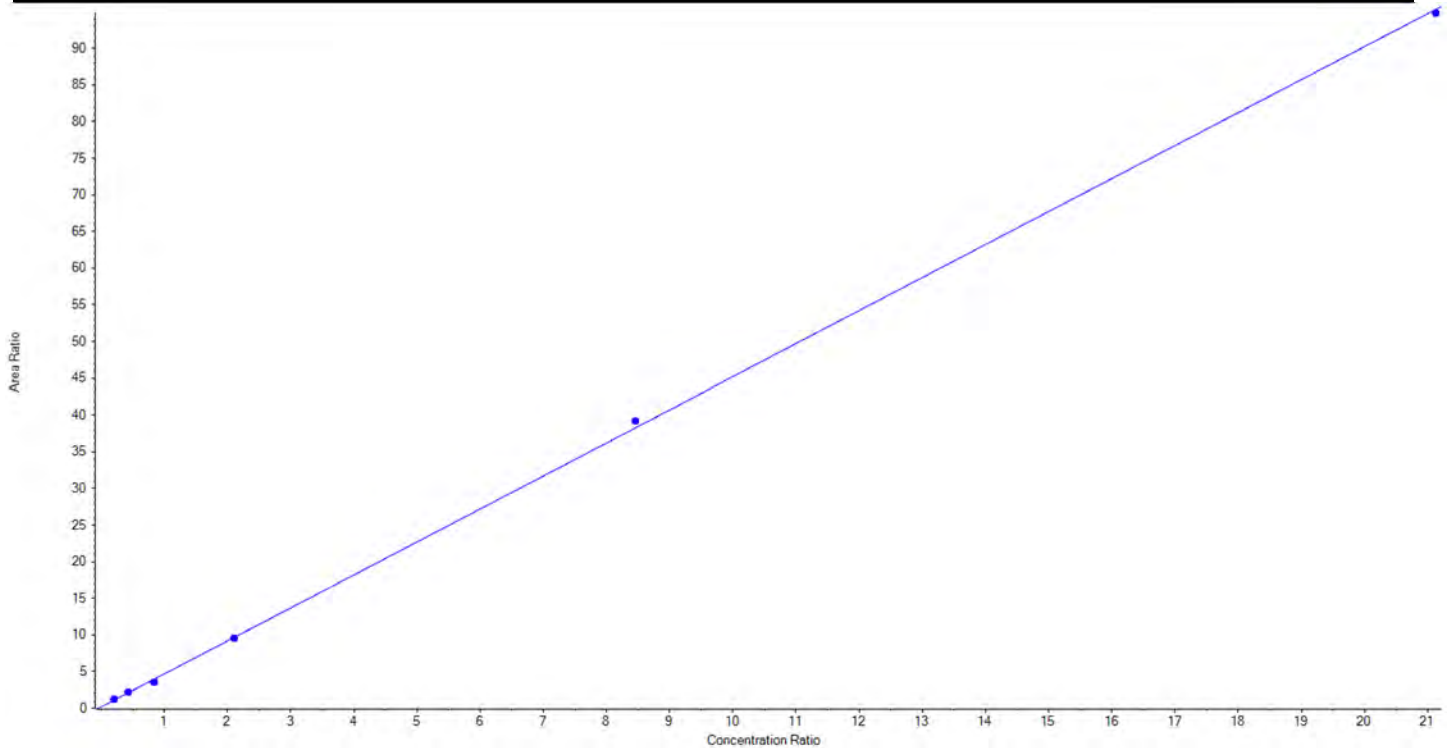
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Analyte Name	PFOS_1	Data File	AC_11112020_5-369.wiff
MRM Transition	499.0 / 80.0	Result Table	20-1455
Internal Standard	13C8-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 4.50266x + 0.17526$ ($r = 0.99961$) (weighting: $1/x$) $r^2: 0.9992$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	252.50	262.07	103.8
3	LD75	L2	True	505.00	546.96	108.3
4	LD76	L3	True	1010.00	885.85	87.7
5	LD77	L4	True	2525.00	2480.50	98.2
6	LD78	L5	True	10100.00	10351.26	102.5
7	LD79	L6	True	25250.00	25115.87	99.5





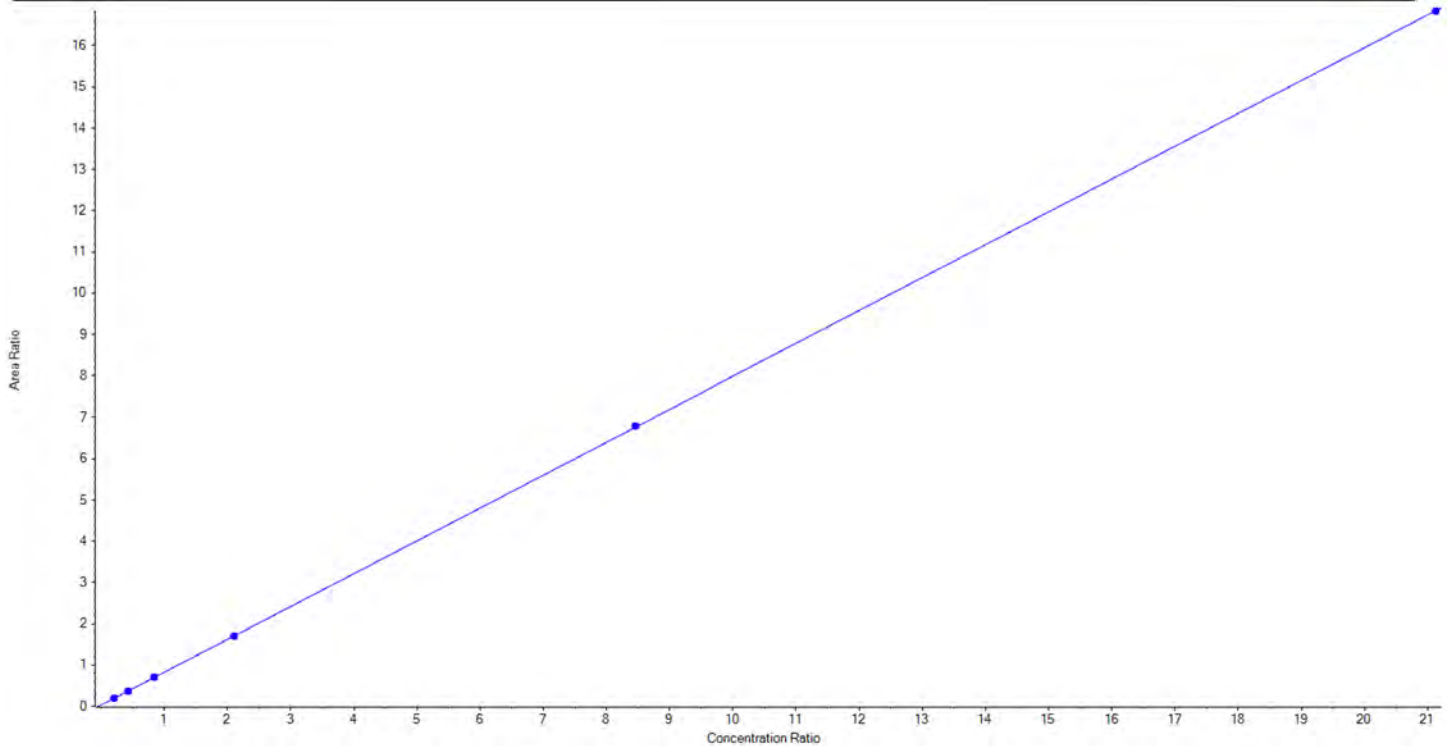
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Analyte Name	PFOS_2	Data File	AC_11112020_5-369.wiff
MRM Transition	499.0 / 99.0	Result Table	20-1455
Internal Standard	13C8-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.79598x + 0.02732$ ($r = 0.99999$) (weighting: $1/x$) $r^2: 1.0000$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	252.50	259.20	102.7
3	LD75	L2	True	505.00	500.59	99.1
4	LD76	L3	True	1010.00	998.43	98.9
5	LD77	L4	True	2525.00	2497.35	98.9
6	LD78	L5	True	10100.00	10152.99	100.5
7	LD79	L6	True	25250.00	25233.93	99.9





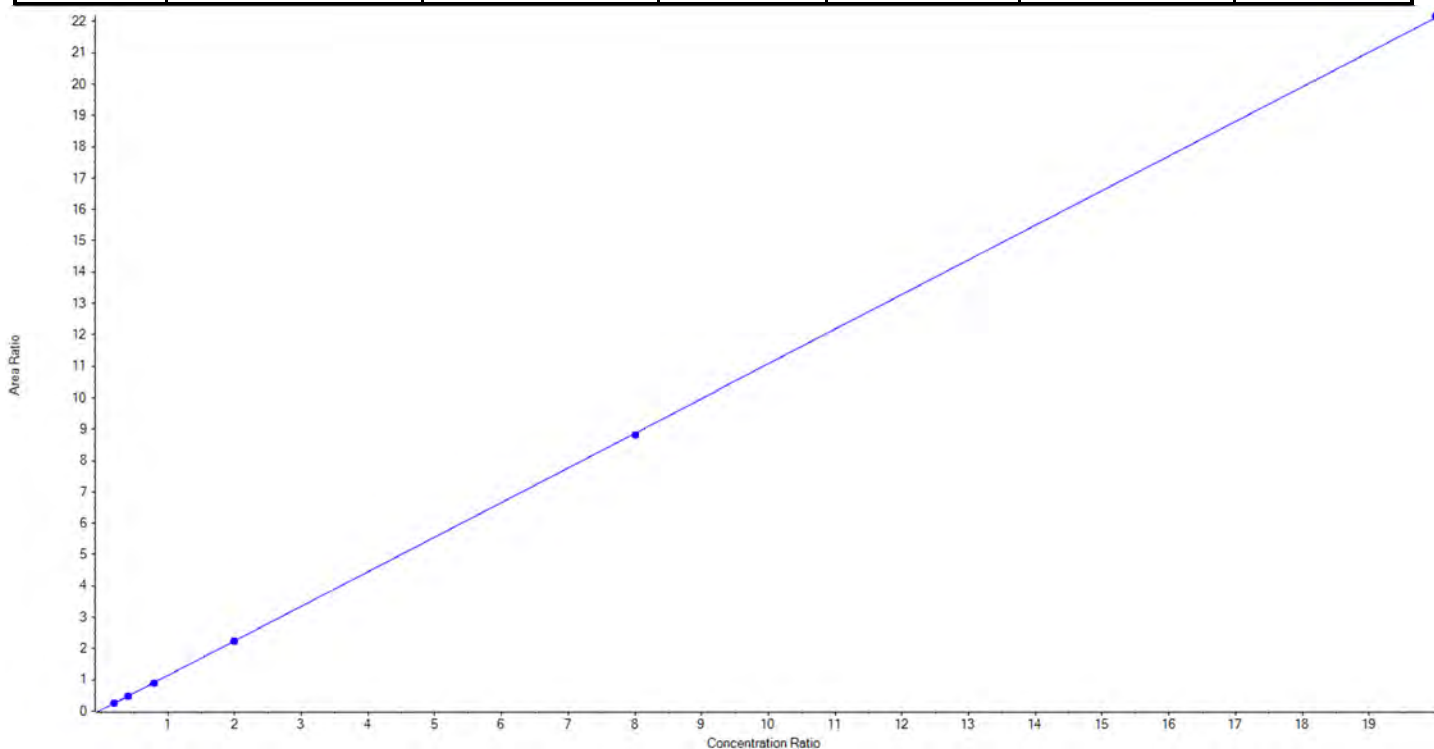
Calibration Summary Report

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Analyte Name	PFDA_1	Data File	AC_11112020_5-369.wiff
MRM Transition	513.0 / 469.0	Result Table	20-1455
Internal Standard	13C6-PFDA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.10421 x + 0.03700$ (r = 0.99998) (weighting: 1 / x) r²:1.0000

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	260.93	104.4
3	LD75	L2	True	500.00	488.63	97.7
4	LD76	L3	True	1000.00	978.20	97.8
5	LD77	L4	True	2500.00	2506.86	100.3
6	LD78	L5	True	10000.00	9957.65	99.6
7	LD79	L6	True	25000.00	25057.72	100.2





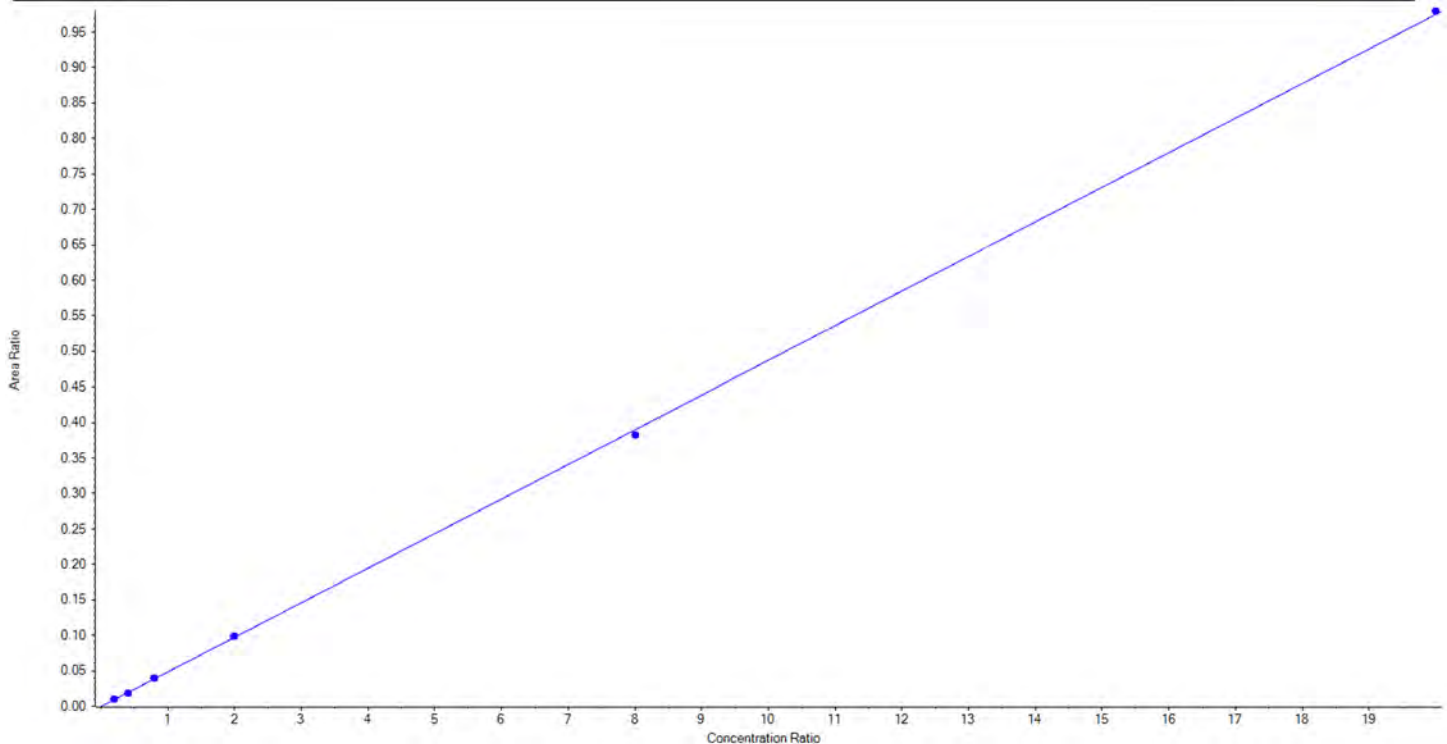
Calibration Summary Report

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Analyte Name	PFDA_2	Data File	AC_11112020_5-369.wiff
MRM Transition	513.0 / 219.0	Result Table	20-1455
Internal Standard	13C6-PFDA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.04877x + -3.63122e-4$ ($r = 0.99990$) (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	LD74	L1	True	250.00	255.78	102.3
3	LD75	L2	True	500.00	471.20	94.2
4	LD76	L3	True	1000.00	1028.27	102.8
5	LD77	L4	True	2500.00	2546.50	101.9
6	LD78	L5	True	10000.00	9827.93	98.3
7	LD79	L6	True	25000.00	25120.31	100.5





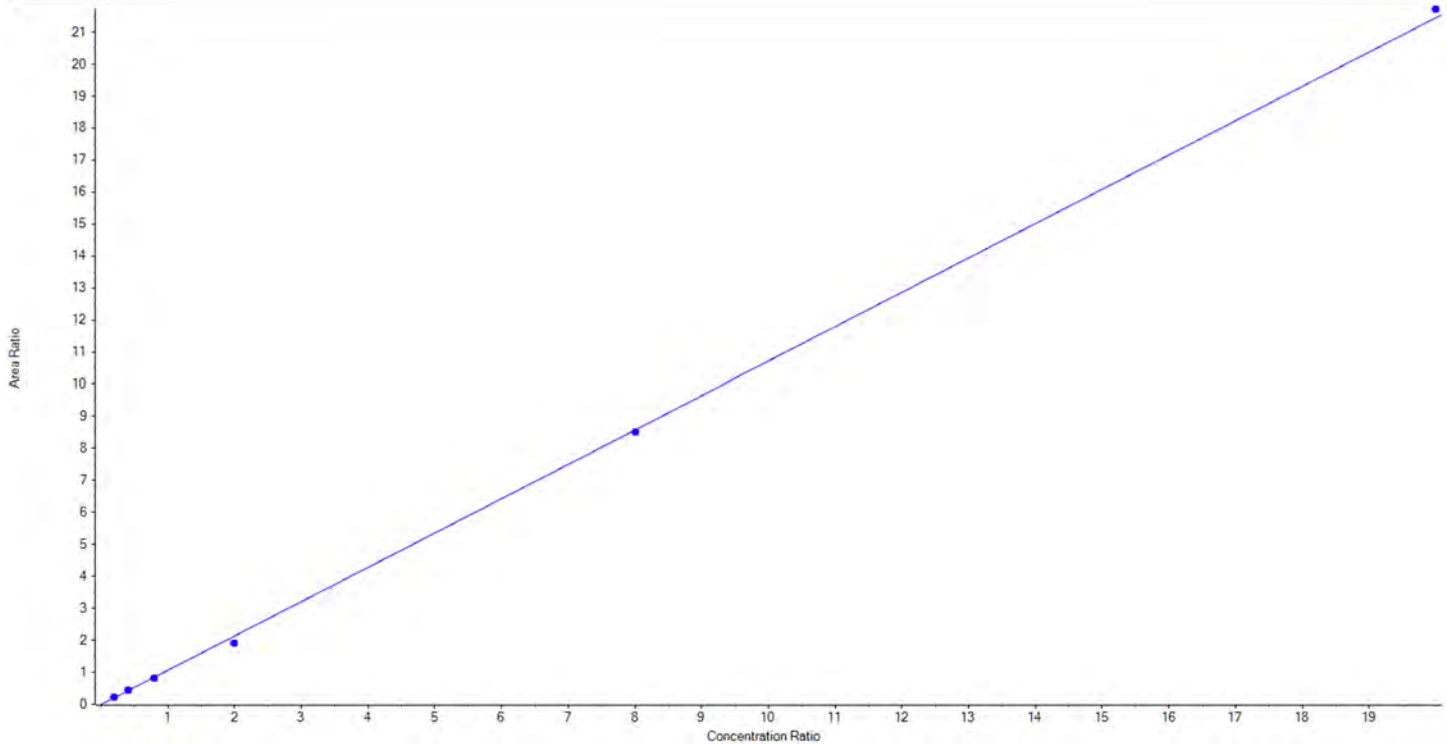
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Analyte Name	PFUnA_1	Data File	AC_11112020_5-369.wiff
MRM Transition	563.0 / 519.0	Result Table	20-1455
Internal Standard	13C7-PFUnA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.07304 x + -0.01240$ ($r = 0.99949$) (weighting: 1 / x) $r^2:0.9990$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	264.11	105.6
3	LD75	L2	True	500.00	535.08	107.0
4	LD76	L3	True	1000.00	971.28	97.1
5	LD77	L4	True	2500.00	2243.71	89.8
6	LD78	L5	True	10000.00	9920.24	99.2
7	LD79	L6	True	25000.00	25315.58	101.3





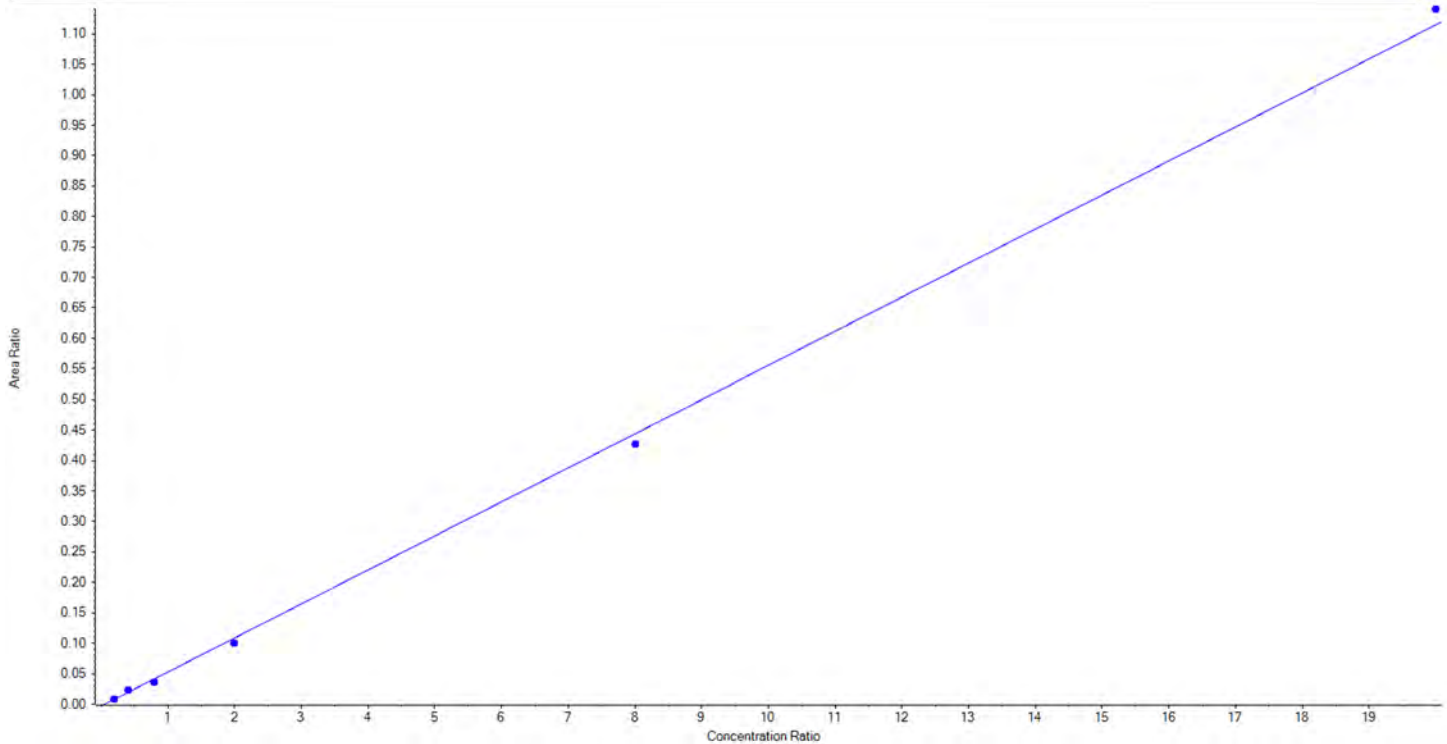
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Analyte Name	PFUnA_2	Data File	AC_11112020_5-369.wiff
MRM Transition	563.0 / 269.0	Result Table	20-1455
Internal Standard	13C7-PFUnA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.05588x + -0.00300$ ($r = 0.99908$) (weighting: $1/x$) $r^2: 0.9982$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	267.49	107.0
3	LD75	L2	True	500.00	565.78	113.2
4	LD76	L3	True	1000.00	887.94	88.8
5	LD77	L4	True	2500.00	2307.95	92.3
6	LD78	L5	True	10000.00	9642.05	96.4
7	LD79	L6	True	25000.00	25578.79	102.3





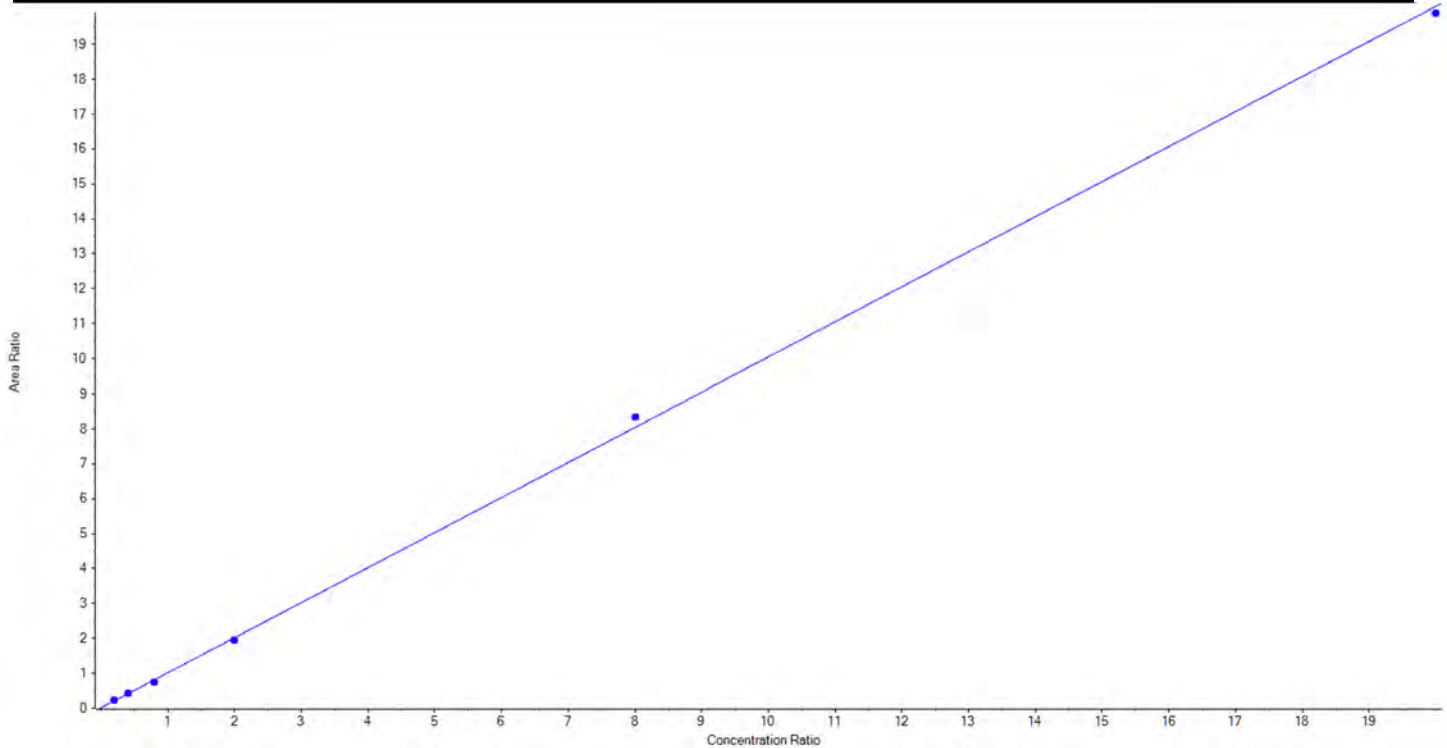
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Analyte Name	PFD _o A_1	Data File	AC_11112020_5-369.wiff
MRM Transition	613.0 / 569.0	Result Table	20-1455
Internal Standard	13C ₂ -PFD _o A	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.00353x + 0.01290$ ($r = 0.99953$) (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	LD74	L1	True	250.00	259.39	103.8
3	LD75	L2	True	500.00	533.30	106.7
4	LD76	L3	True	1000.00	906.58	90.7
5	LD77	L4	True	2500.00	2399.58	96.0
6	LD78	L5	True	10000.00	10389.35	103.9
7	LD79	L6	True	25000.00	24761.79	99.1





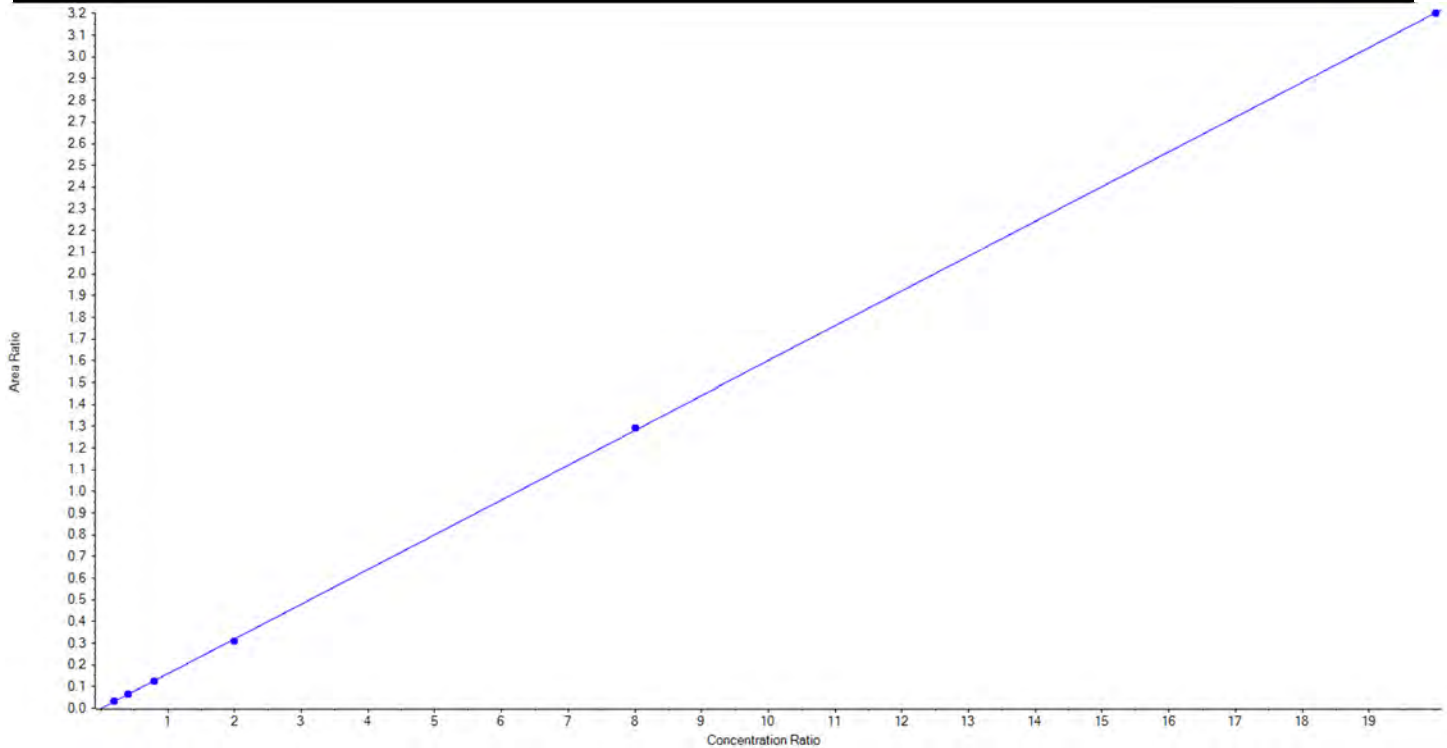
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Analyte Name	PFDoA_2	Data File	AC_11112020_5-369.wiff
MRM Transition	613.0 / 319.0	Result Table	20-1455
Internal Standard	13C2-PFDoA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.16023x + -0.00111$ ($r = 0.99994$) (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	LD74	L1	True	250.00	249.74	99.9
3	LD75	L2	True	500.00	518.67	103.7
4	LD76	L3	True	1000.00	988.36	98.8
5	LD77	L4	True	2500.00	2418.03	96.7
6	LD78	L5	True	10000.00	10085.67	100.9
7	LD79	L6	True	25000.00	24989.54	100.0





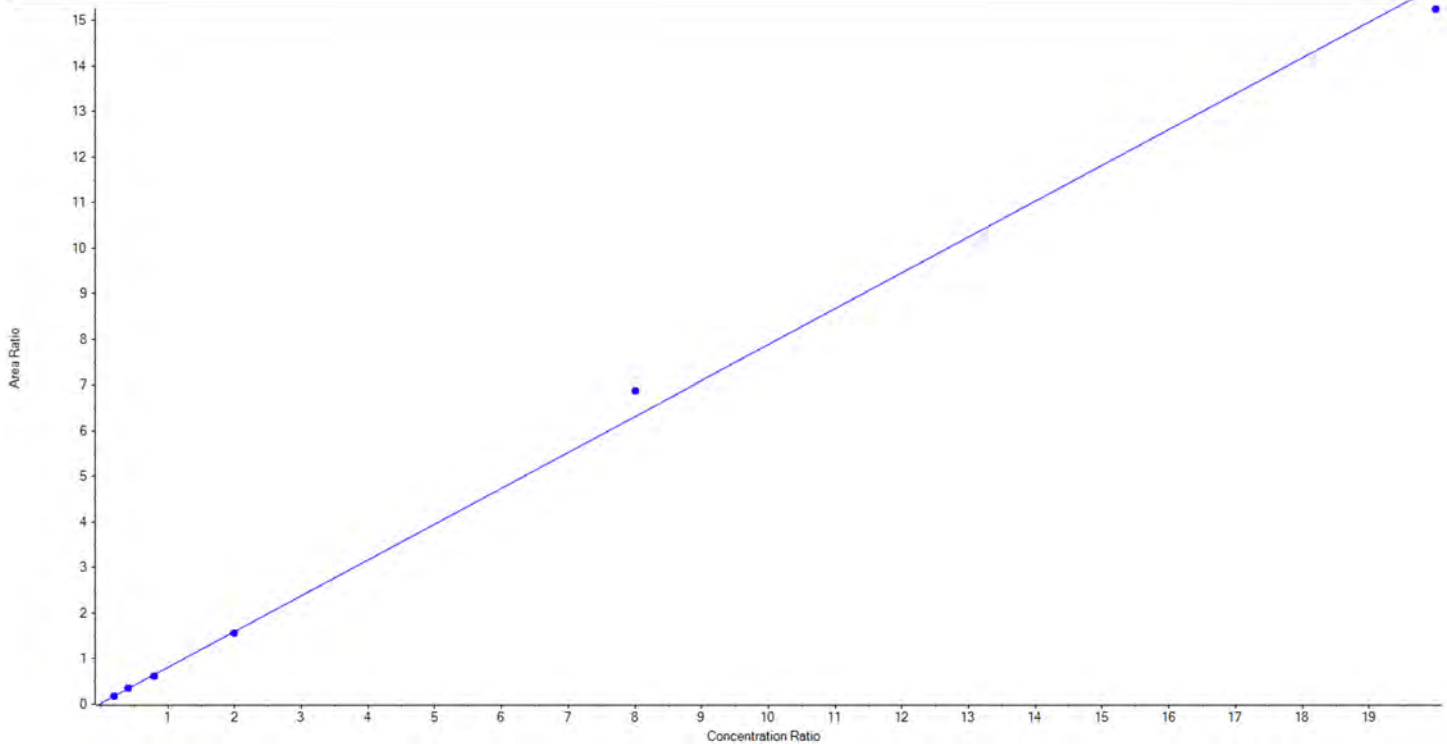
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Analyte Name	PFTrDA_1	Data File	AC_11112020_5-369.wiff
MRM Transition	663.0 / 619.0	Result Table	20-1455
Internal Standard	13C2-PFTeDA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.78657x + 0.02138$ ($r = 0.99838$) (weighting: $1/x$) $r^2: 0.9968$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	250.52	100.2
3	LD75	L2	True	500.00	511.07	102.2
4	LD76	L3	True	1000.00	939.91	94.0
5	LD77	L4	True	2500.00	2443.75	97.8
6	LD78	L5	True	10000.00	10902.99	109.0
7	LD79	L6	True	25000.00	24201.77	96.8





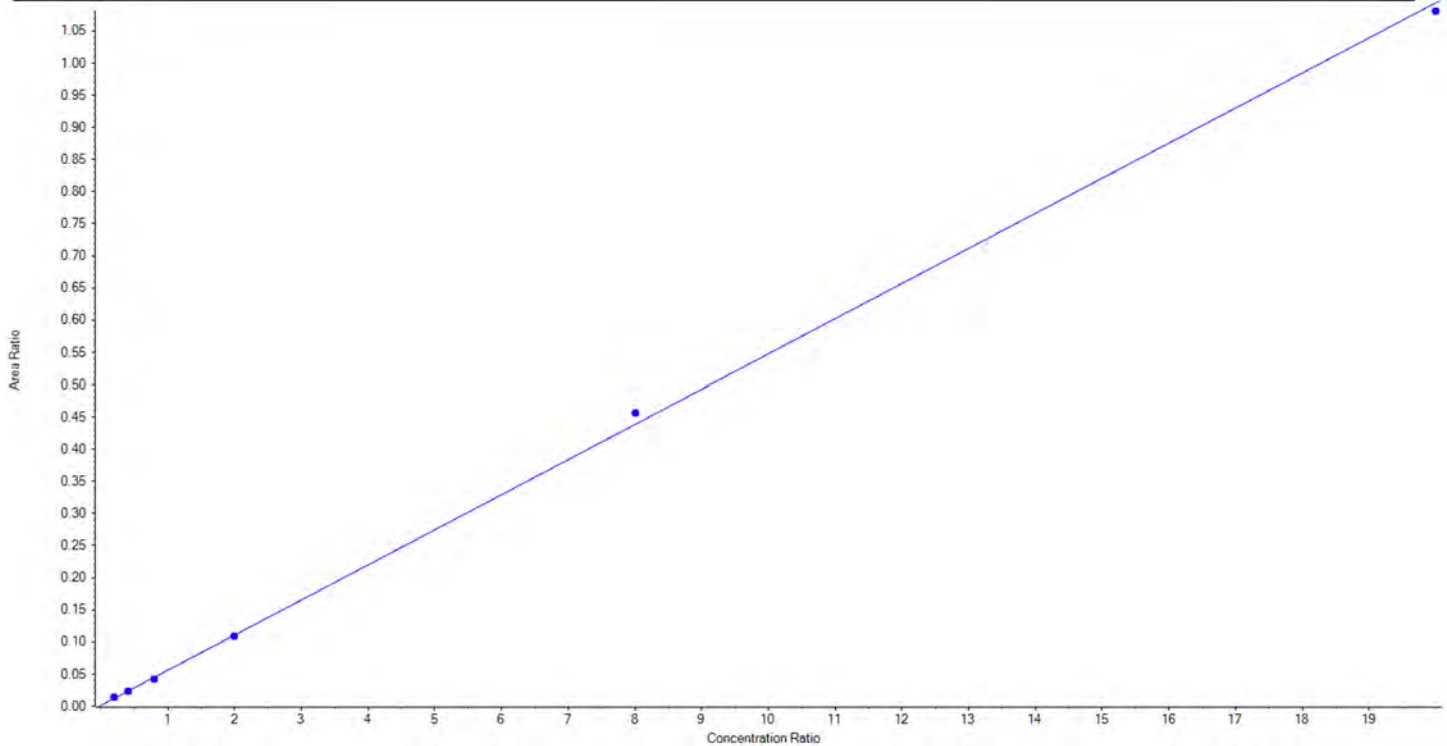
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Analyte Name	PFTrDA_2	Data File	AC_11112020_5-369.wiff
MRM Transition	663.0 / 169.0	Result Table	20-1455
Internal Standard	13C2-PFTeDA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.05463x + 0.00143$ ($r = 0.99956$) (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	LD74	L1	True	250.00	274.04	109.6
3	LD75	L2	True	500.00	487.40	97.5
4	LD76	L3	True	1000.00	915.06	91.5
5	LD77	L4	True	2500.00	2462.66	98.5
6	LD78	L5	True	10000.00	10408.23	104.1
7	LD79	L6	True	25000.00	24702.62	98.8





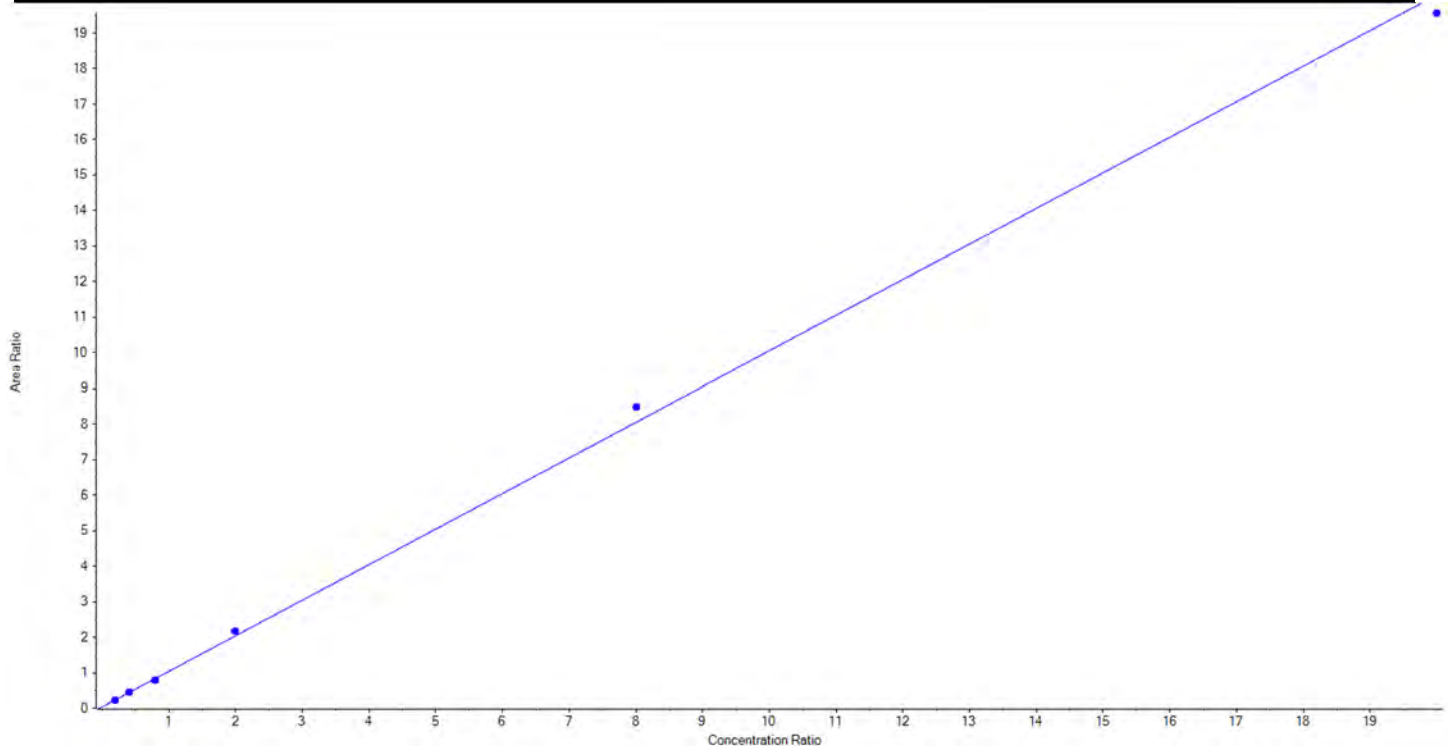
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Analyte Name	PFTeDA_1	Data File	AC_11112020_5-369.wiff
MRM Transition	713.0 / 669.0	Result Table	20-1455
Internal Standard	13C2-PFTeDA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.00173x + 0.03739$ ($r = 0.99911$) (weighting: $1/x$) $r^2: 0.9982$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	232.72	93.1
3	LD75	L2	True	500.00	522.68	104.5
4	LD76	L3	True	1000.00	935.76	93.6
5	LD77	L4	True	2500.00	2646.35	105.9
6	LD78	L5	True	10000.00	10549.36	105.5
7	LD79	L6	True	25000.00	24363.14	97.5





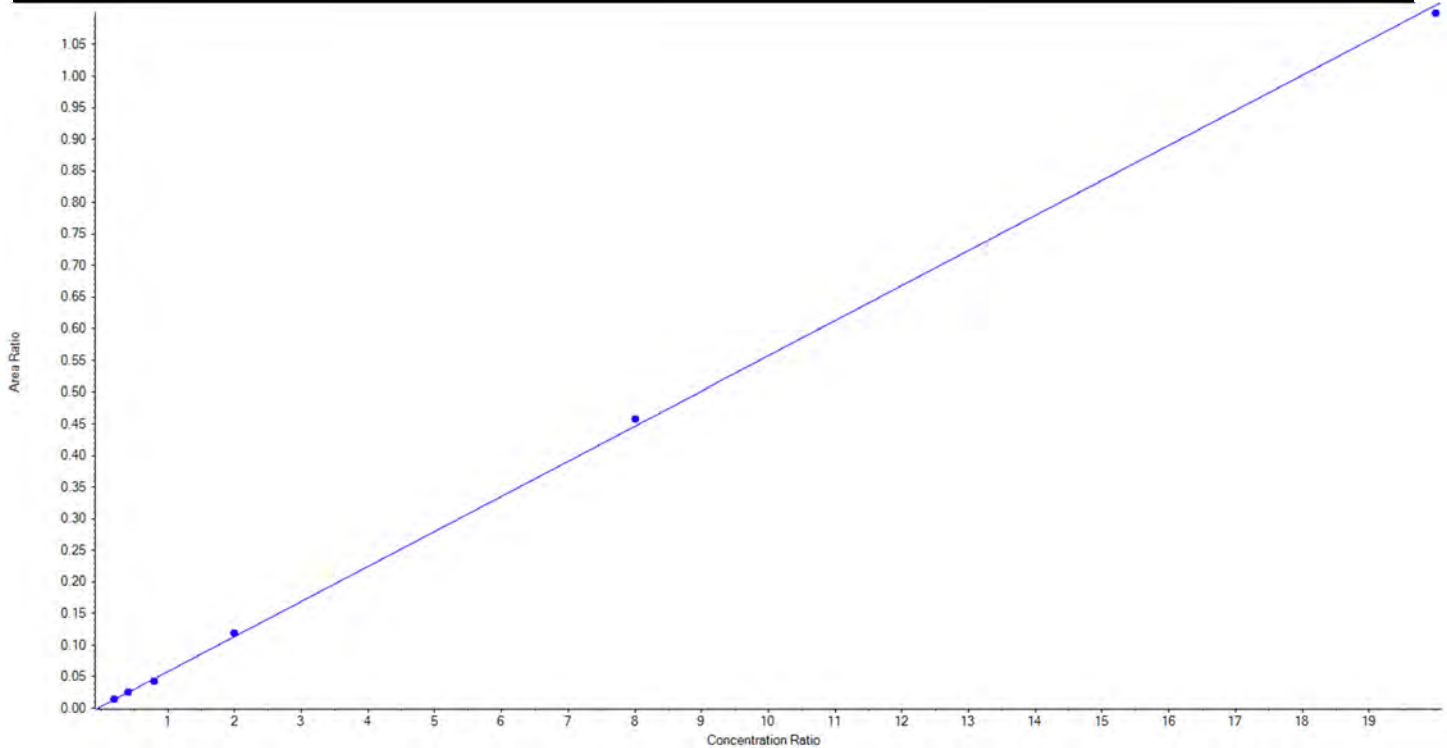
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Analyte Name	PFTeDA_2	Data File	AC_11112020_5-369.wiff
MRM Transition	713.0 / 169.0	Result Table	20-1455
Internal Standard	13C2-PFTeDA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.05549x + 0.00252$ ($r = 0.99961$) (weighting: $1/x$) $r^2: 0.9992$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	250.74	100.3
3	LD75	L2	True	500.00	521.57	104.3
4	LD76	L3	True	1000.00	894.23	89.4
5	LD77	L4	True	2500.00	2614.34	104.6
6	LD78	L5	True	10000.00	10252.79	102.5
7	LD79	L6	True	25000.00	24716.32	98.9





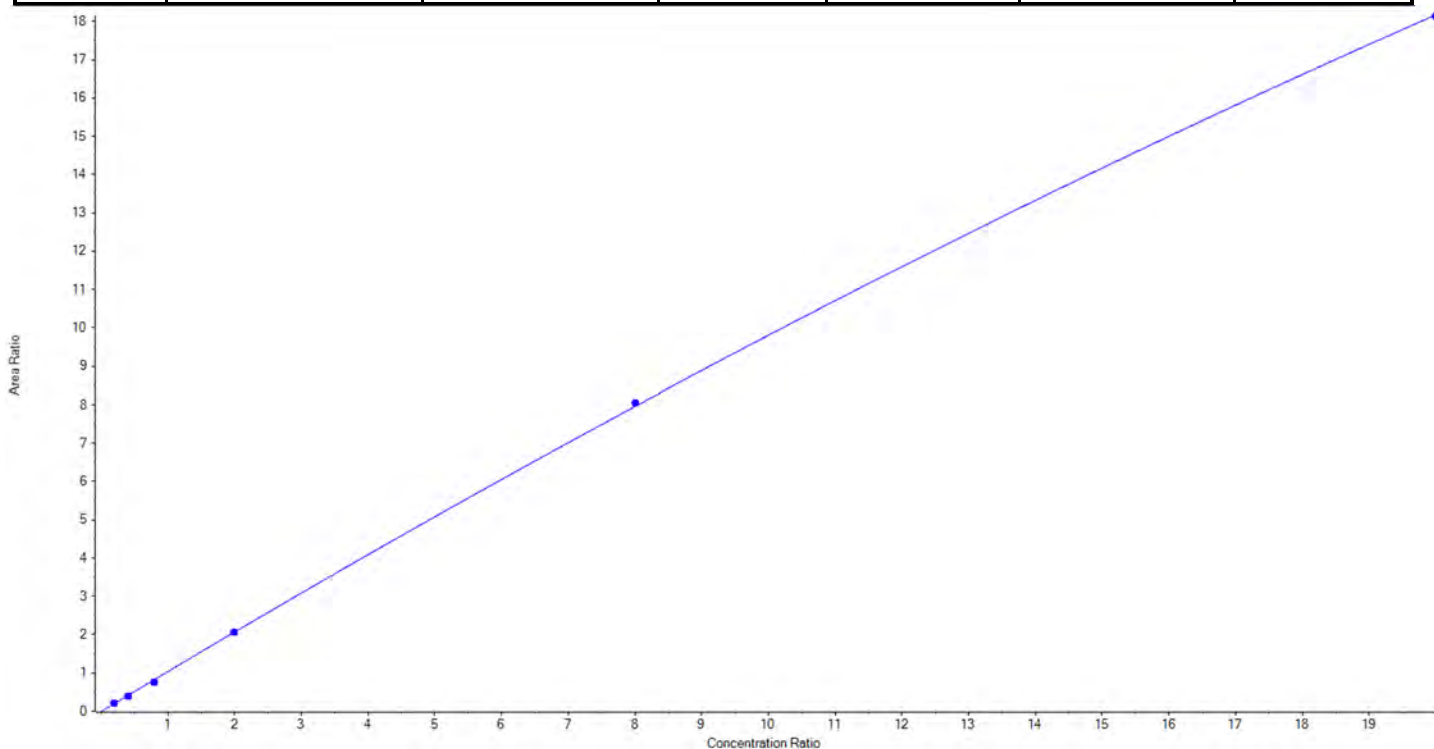
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Analyte Name	NMeFOSAA_1	Data File	AC_11112020_5-369.wiff
MRM Transition	570.0 / 419.0	Result Table	20-1455
Internal Standard	d3-MeFOSAA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = -0.00725 x^2 + 1.05407 x + -0.01184$ (r = 0.99986) (weighting: 1 / x) r²:0.9997

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	269.95	108.0
3	LD75	L2	True	500.00	492.20	98.4
4	LD76	L3	True	1000.00	929.58	93.0
5	LD77	L4	True	2500.00	2491.76	99.7
6	LD78	L5	True	10000.00	10116.21	101.2
7	LD79	L6	True	25000.00	24947.88	99.8





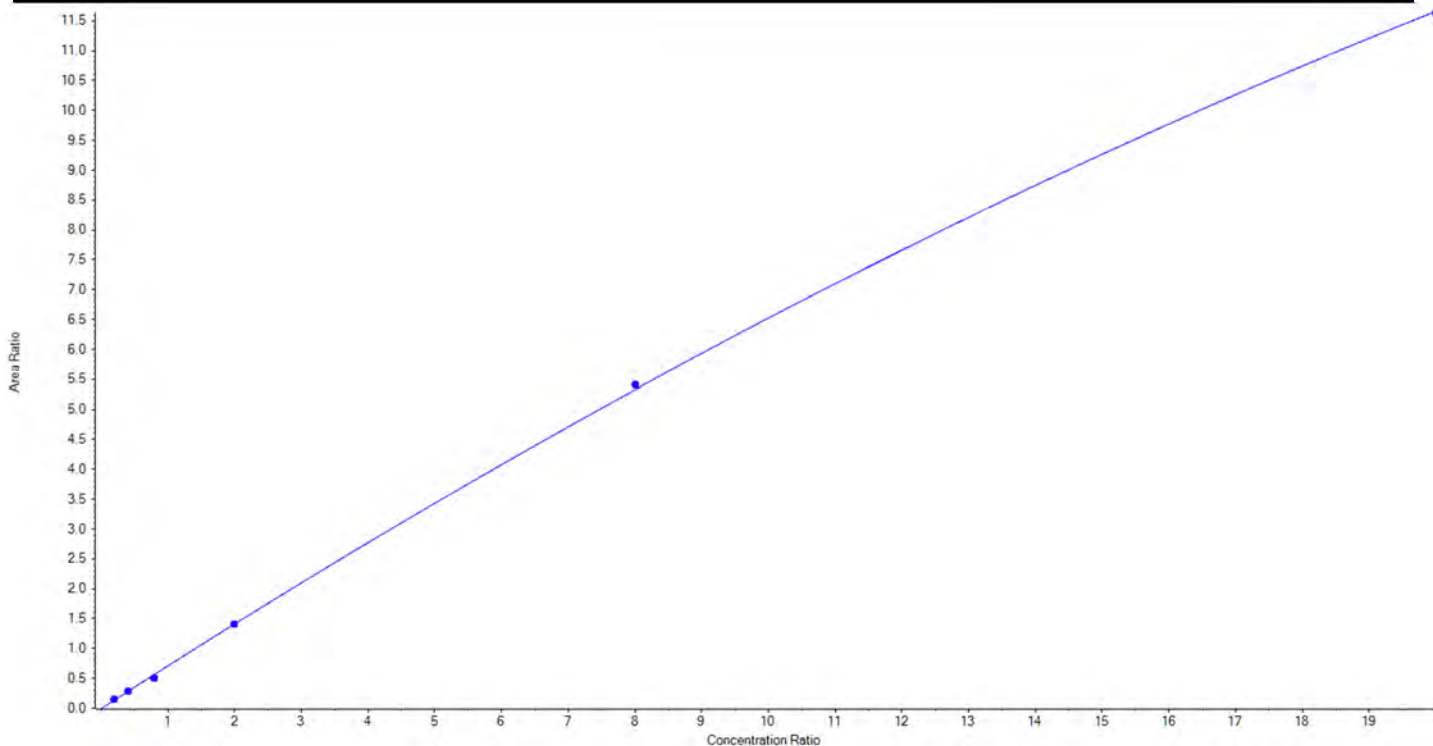
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Analyte Name	NMeFOSAA_2	Data File	AC_11112020_5-369.wiff
MRM Transition	570.0 / 512.0	Result Table	20-1455
Internal Standard	d3-MeFOSAA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = -0.00698 x^2 + 0.72293 x + -0.00816$ (r = 0.99963) (weighting: 1 / x) r²:0.9993

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	273.77	109.5
3	LD75	L2	True	500.00	505.05	101.0
4	LD76	L3	True	1000.00	879.35	87.9
5	LD77	L4	True	2500.00	2507.60	100.3
6	LD78	L5	True	10000.00	10156.37	101.6
7	LD79	L6	True	25000.00	24920.04	99.7





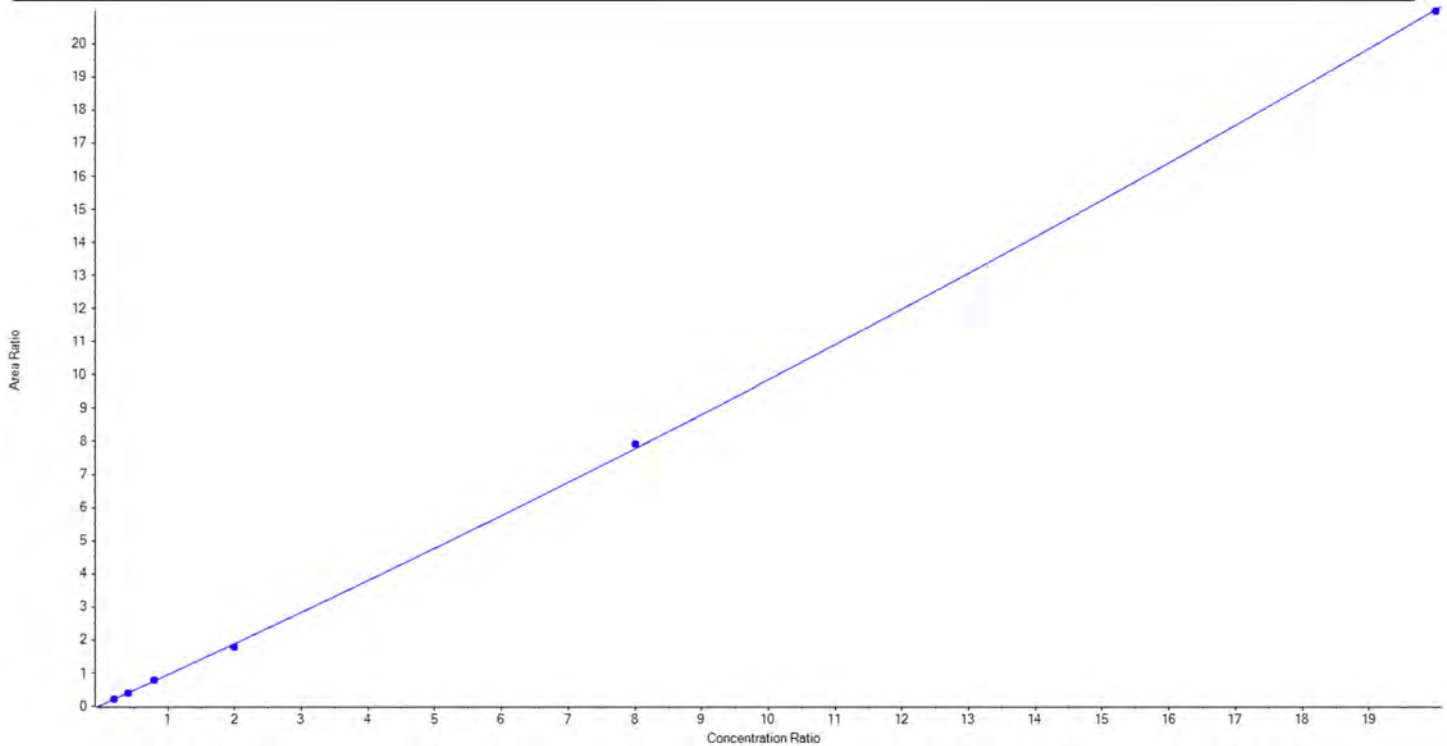
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Analyte Name	NEtFOSAA_1	Data File	AC_11112020_5-369.wiff
MRM Transition	584.0 / 419.0	Result Table	20-1455
Internal Standard	d5-EtFOSAA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.00678 x^2 + 0.91452 x + 0.02914$ ($r = 0.99985$) (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	LD74	L1	True	250.00	266.28	106.5
3	LD75	L2	True	500.00	479.90	96.0
4	LD76	L3	True	1000.00	1011.88	101.2
5	LD77	L4	True	2500.00	2371.06	94.8
6	LD78	L5	True	10000.00	10165.97	101.7
7	LD79	L6	True	25000.00	24952.71	99.8





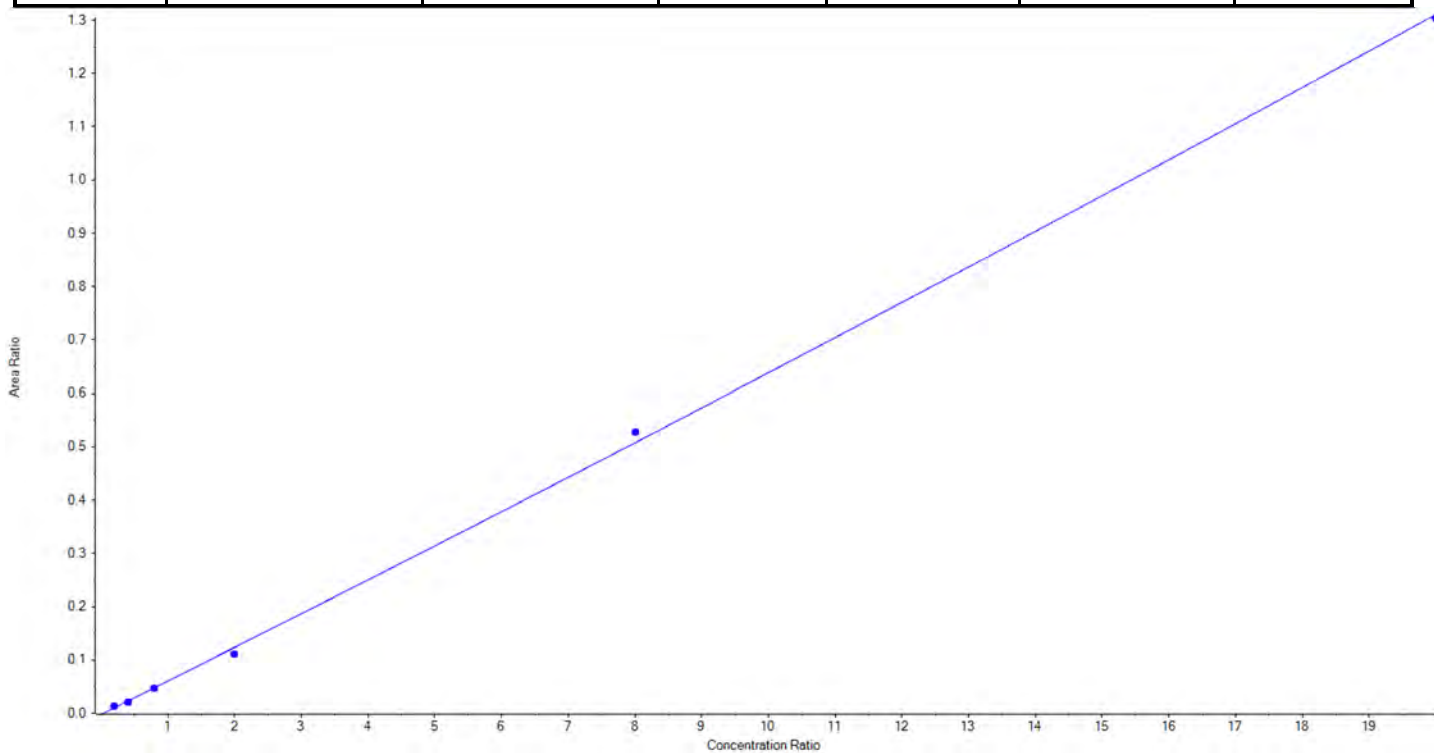
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Analyte Name	NEtFOSAA_2	Data File	AC_11112020_5-369.wiff
MRM Transition	584.0 / 483.0	Result Table	20-1455
Internal Standard	d5-EtFOSAA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.60594e-4 x^2 + 0.06242 x + -0.00195$ (r = 0.99932) (weighting: 1 / x) r²:0.9986

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	291.74	116.7
3	LD75	L2	True	500.00	464.55	92.9
4	LD76	L3	True	1000.00	964.88	96.5
5	LD77	L4	True	2500.00	2262.67	90.5
6	LD78	L5	True	10000.00	10388.67	103.9
7	LD79	L6	True	25000.00	24876.37	99.5





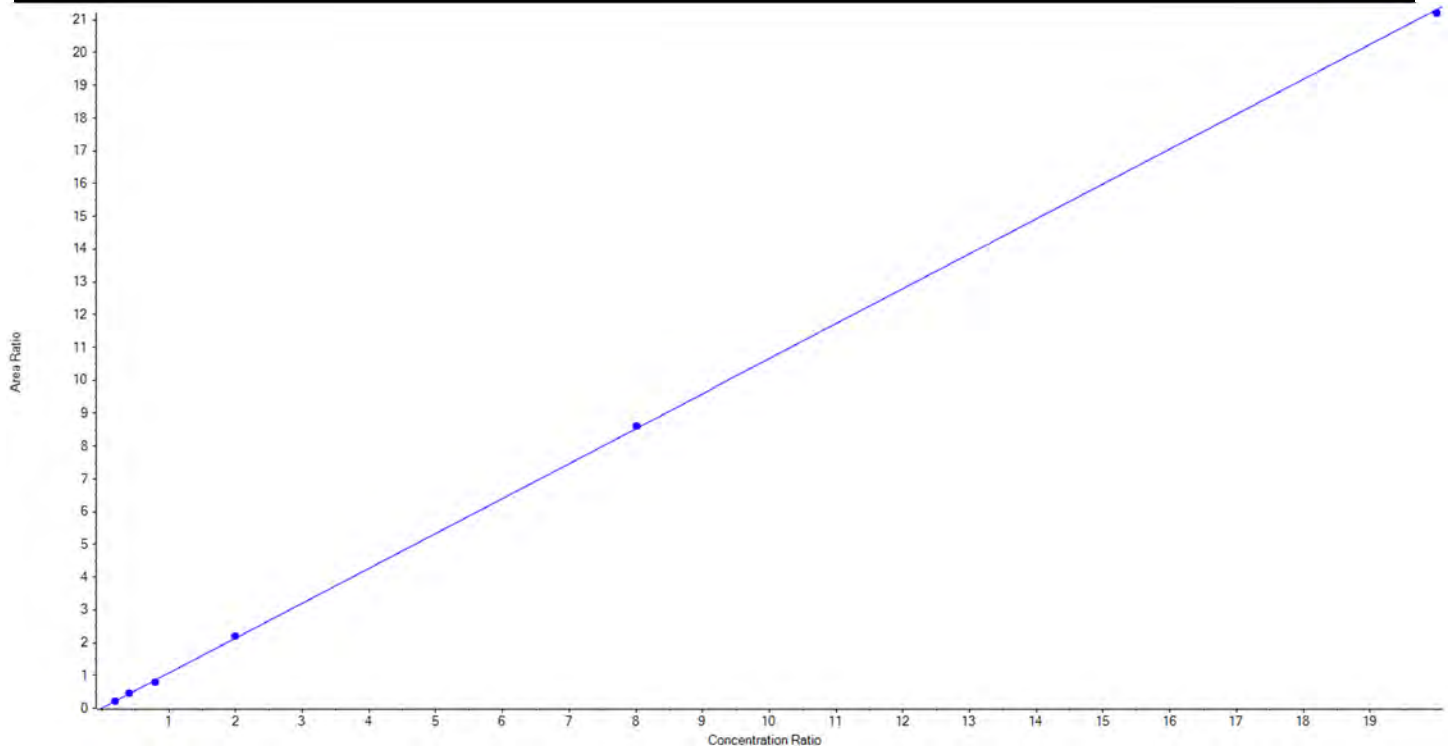
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Analyte Name	HFPO-DA_1	Data File	AC_11112020_5-369.wiff
MRM Transition	285.0 / 169.0	Result Table	20-1455
Internal Standard	13C3-HFPO-DA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.06542x + 0.00888$ ($r = 0.99987$) (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	LD74	L1	True	250.00	246.06	98.4
3	LD75	L2	True	500.00	523.40	104.7
4	LD76	L3	True	1000.00	937.00	93.7
5	LD77	L4	True	2500.00	2566.03	102.6
6	LD78	L5	True	10000.00	10107.46	101.1
7	LD79	L6	True	25000.00	24870.05	99.5





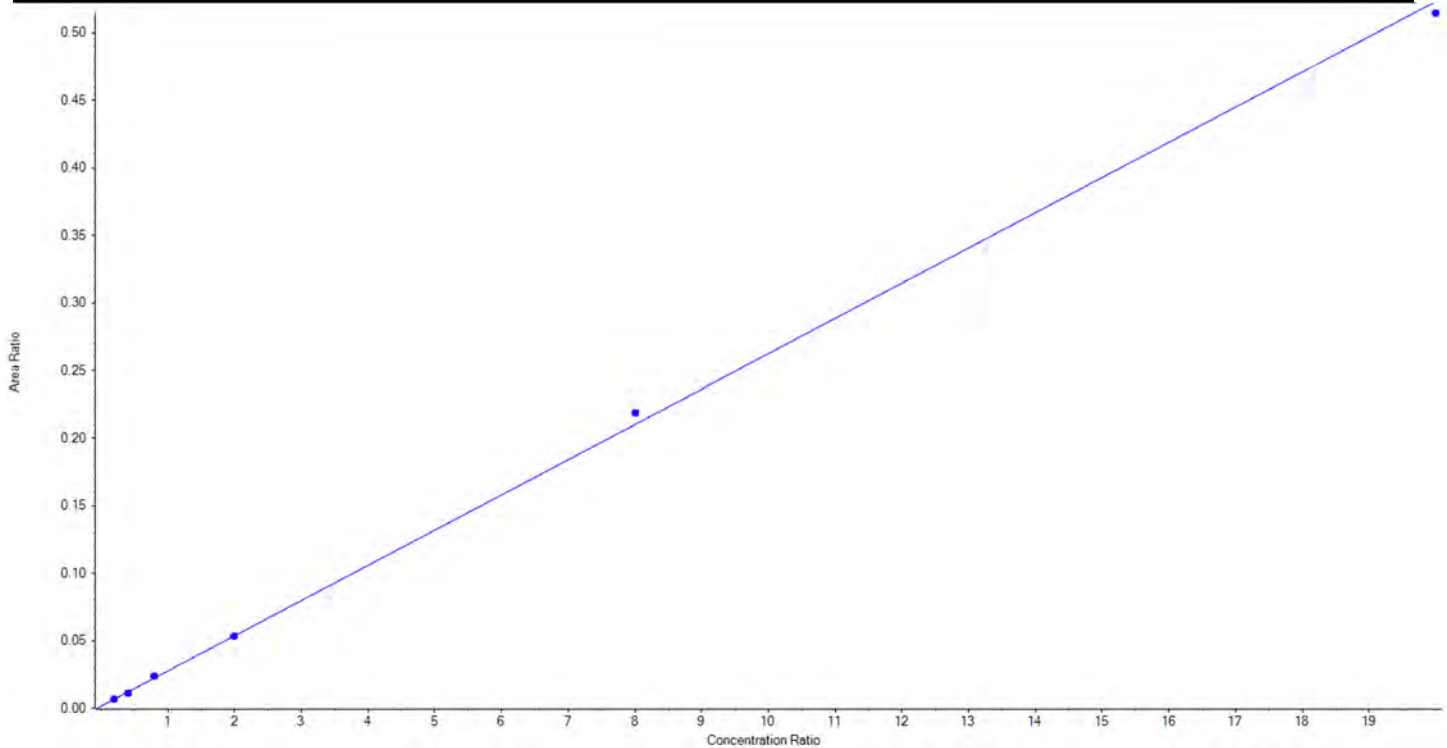
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Analyte Name	HFPO-DA_2	Data File	AC_11112020_5-369.wiff
MRM Transition	285.0 / 118.8	Result Table	20-1455
Internal Standard	13C3-HFPO-DA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.02609x + 0.00149$ ($r = 0.99960$) (weighting: $1/x$) $r^2: 0.9992$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	244.14	97.7
3	LD75	L2	True	500.00	478.77	95.8
4	LD76	L3	True	1000.00	1050.36	105.0
5	LD77	L4	True	2500.00	2477.15	99.1
6	LD78	L5	True	10000.00	10411.17	104.1
7	LD79	L6	True	25000.00	24588.39	98.4





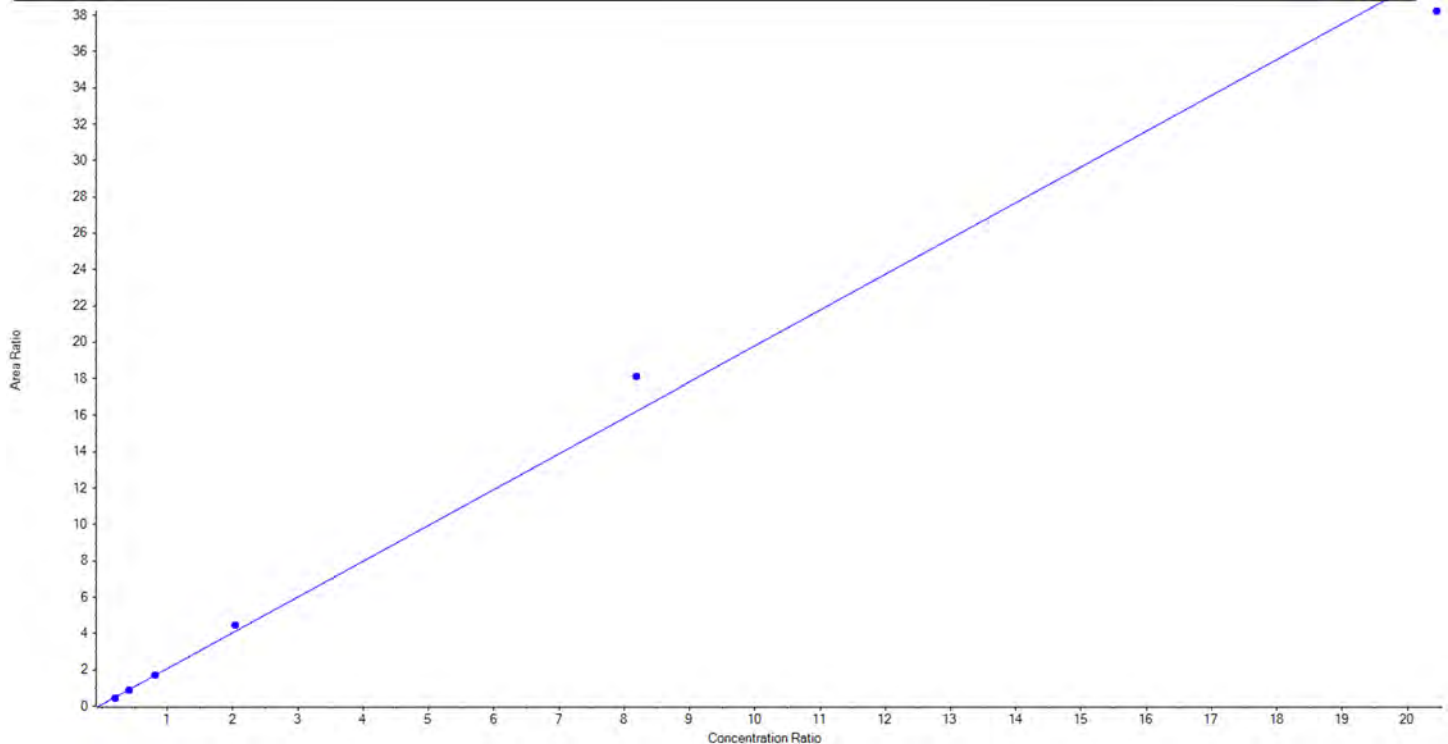
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Analyte Name	ADONA_1	Data File	AC_11112020_5-369.wiff
MRM Transition	377.0 / 251.0	Result Table	20-1455
Internal Standard	13C8-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.96944 x + 0.09999$ ($r = 0.99665$) (weighting: $1 / x$) $r^2: 0.9933$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	216.49	86.6
3	LD75	L2	True	500.00	499.25	99.9
4	LD76	L3	True	1000.00	986.74	98.7
5	LD77	L4	True	2500.00	2712.38	108.5
6	LD78	L5	True	10000.00	11173.81	111.7
7	LD79	L6	True	25000.00	23661.33	94.7





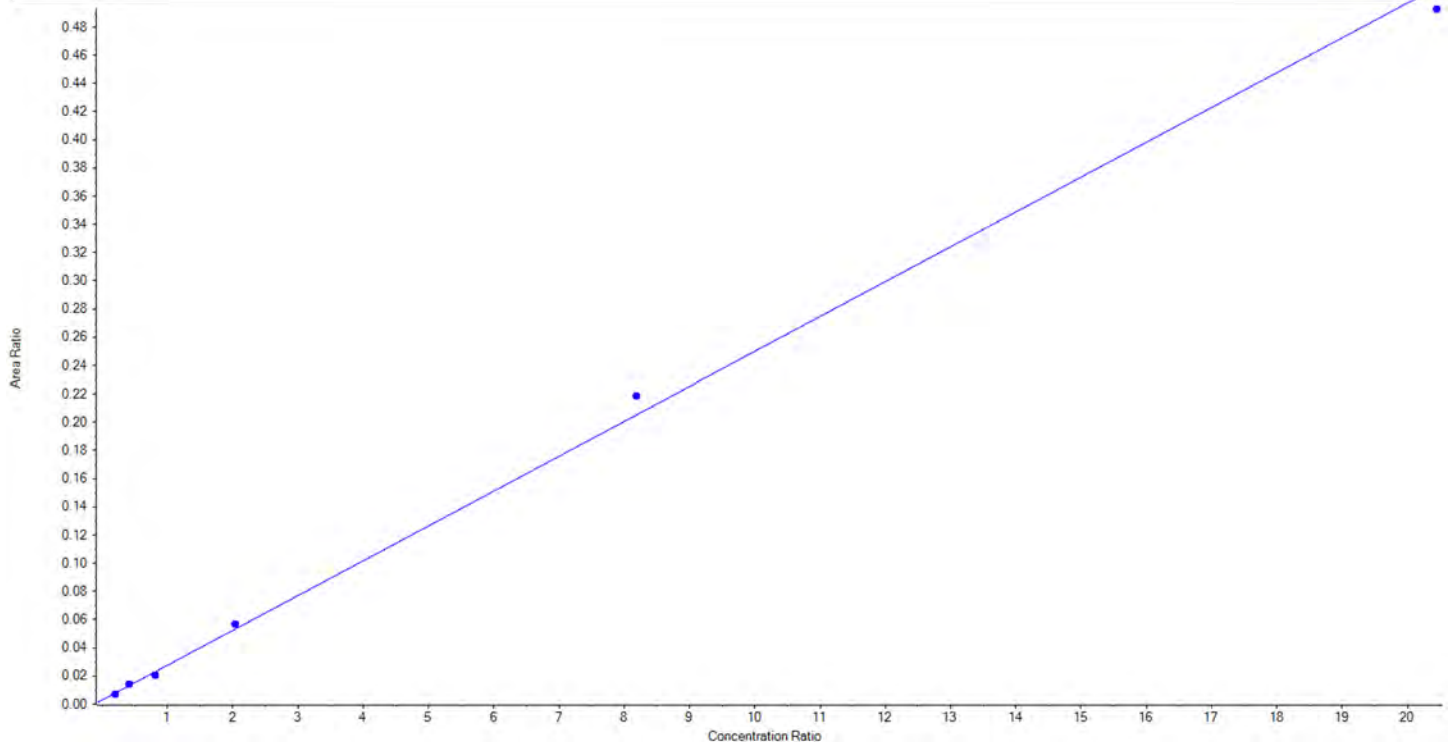
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Analyte Name	ADONA_2	Data File	AC_11112020_5-369.wiff
MRM Transition	377.0 / 85.0	Result Table	20-1455
Internal Standard	13C8-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.02471 x + 0.00291$ ($r = 0.99848$) (weighting: $1/x$) $r^2: 0.9970$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	221.19	88.5
3	LD75	L2	True	500.00	564.34	112.9
4	LD76	L3	True	1000.00	886.12	88.6
5	LD77	L4	True	2500.00	2655.92	106.2
6	LD78	L5	True	10000.00	10686.52	106.9
7	LD79	L6	True	25000.00	24235.91	96.9





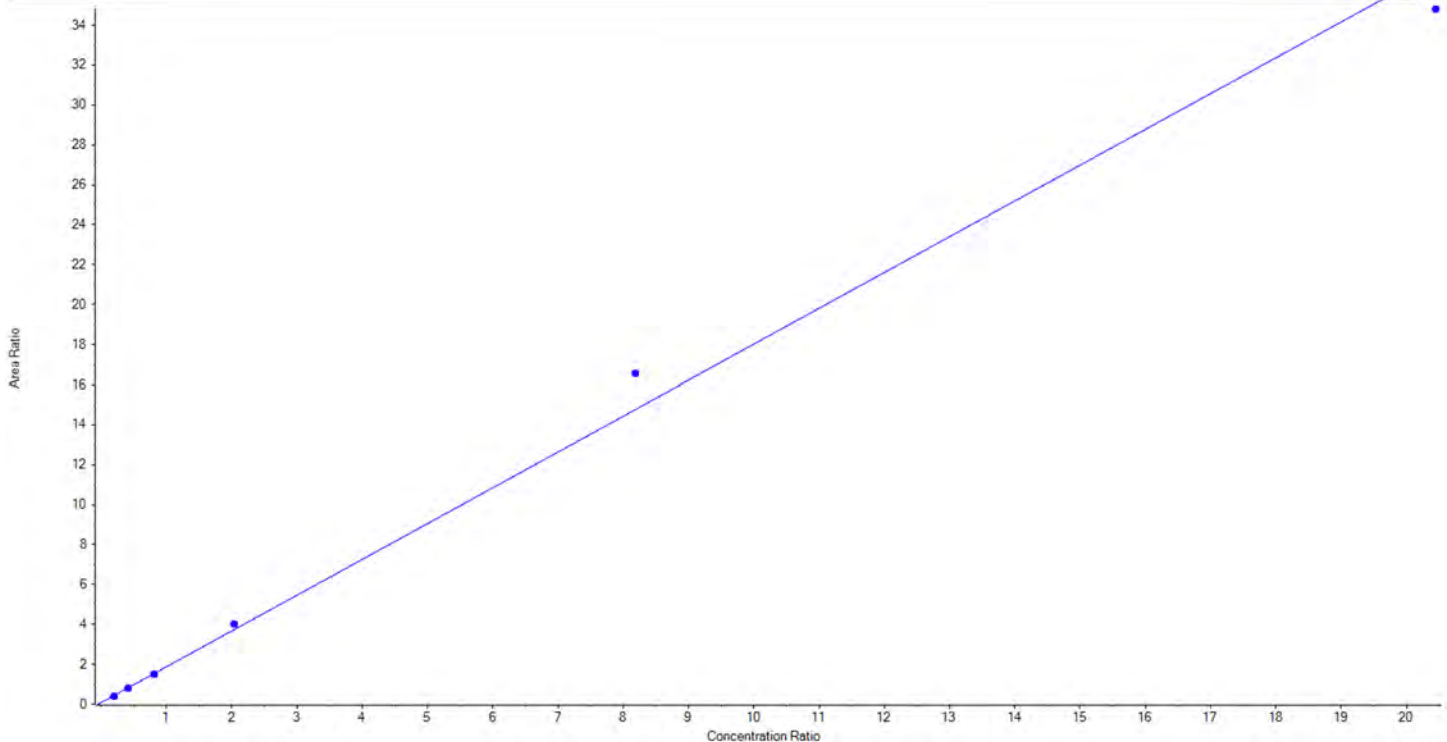
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Analyte Name	9CI-PF3ONS_1	Data File	AC_11112020_5-369.wiff
MRM Transition	531.0 / 351.0	Result Table	20-1455
Internal Standard	13C8-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.79339x + 0.08114$ ($r = 0.99655$) (weighting: $1/x$) $r^2: 0.9931$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	227.44	91.0
3	LD75	L2	True	500.00	500.60	100.1
4	LD76	L3	True	1000.00	953.37	95.3
5	LD77	L4	True	2500.00	2662.76	106.5
6	LD78	L5	True	10000.00	11238.45	112.4
7	LD79	L6	True	25000.00	23667.36	94.7





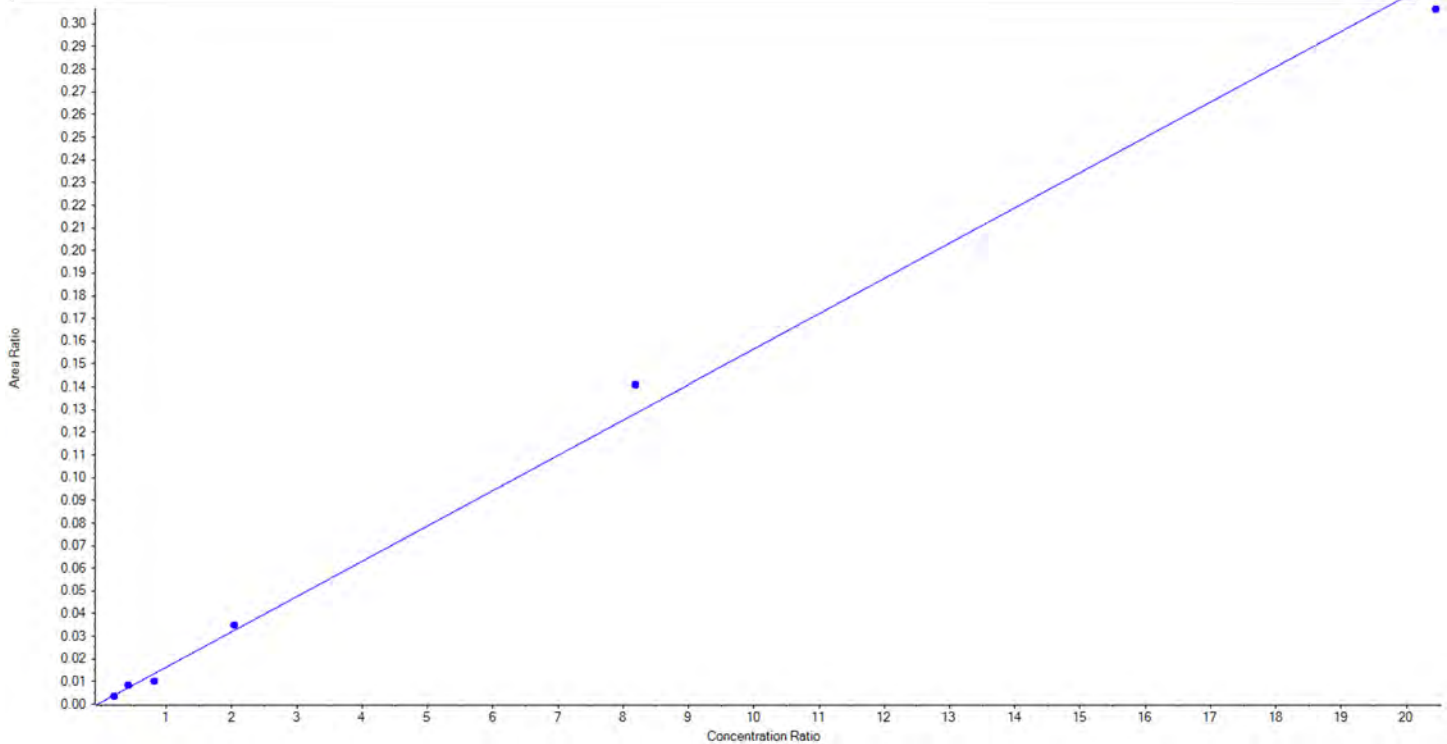
Calibration Summary Report

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Analyte Name	9CI-PF3ONS_2	Data File	AC_11112020_5-369.wiff
MRM Transition	531.0 / 83.0	Result Table	20-1455
Internal Standard	13C8-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.01557 x + 7.96987e-4$ ($r = 0.99661$) (weighting: $1 / x$) $r^2:0.9932$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	230.43	92.2
3	LD75	L2	True	500.00	599.25	119.9
4	LD76	L3	True	1000.00	749.01	74.9
5	LD77	L4	True	2500.00	2679.35	107.2
6	LD78	L5	True	10000.00	10989.11	109.9
7	LD79	L6	True	25000.00	24002.84	96.0





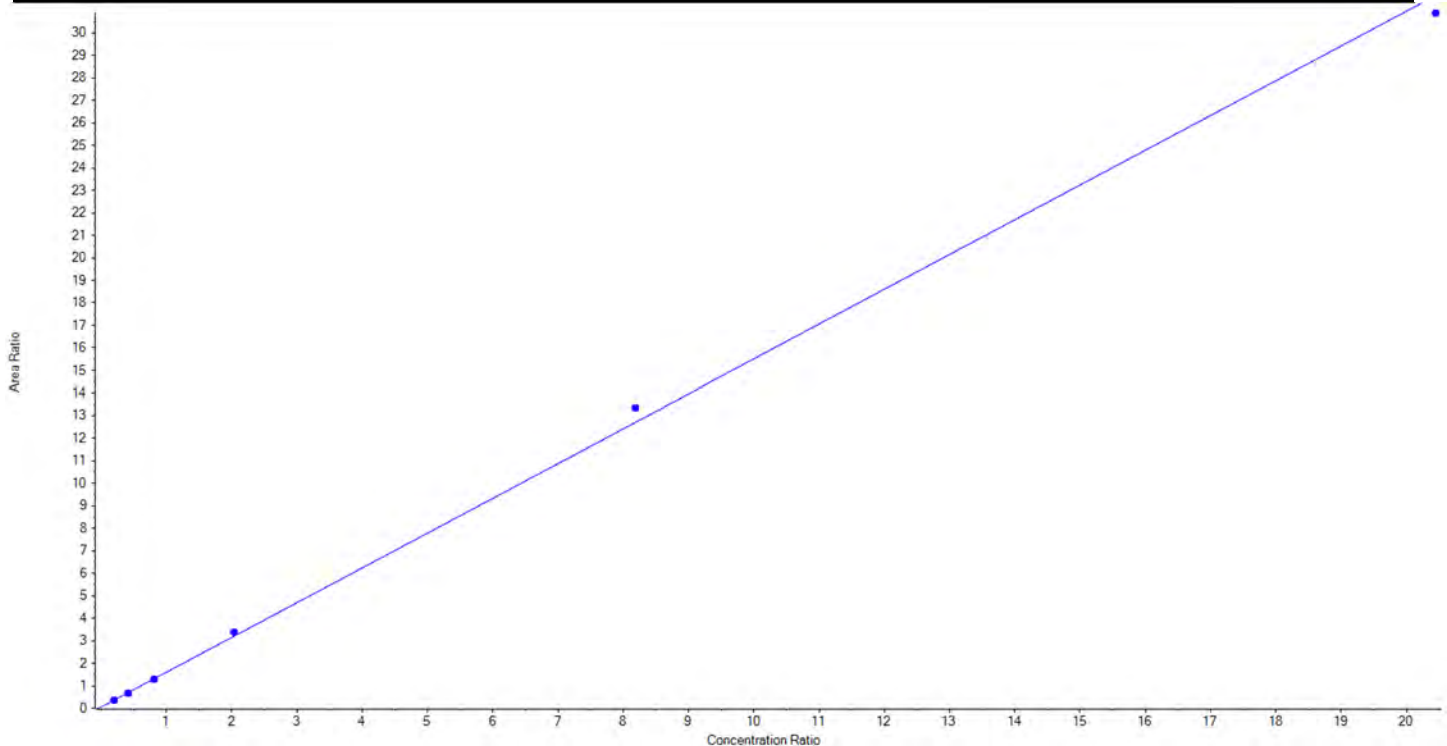
Calibration Summary Report

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Analyte Name	11Cl-pf3OUdS_1	Data File	AC_11112020_5-369.wiff
MRM Transition	631.0 / 451.0	Result Table	20-1455
Internal Standard	13C8-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.54558x + 0.05440$ ($r = 0.99928$) (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	LD74	L1	True	250.00	237.32	94.9
3	LD75	L2	True	500.00	491.62	98.3
4	LD76	L3	True	1000.00	991.37	99.1
5	LD77	L4	True	2500.00	2620.11	104.8
6	LD78	L5	True	10000.00	10527.69	105.3
7	LD79	L6	True	25000.00	24381.89	97.5





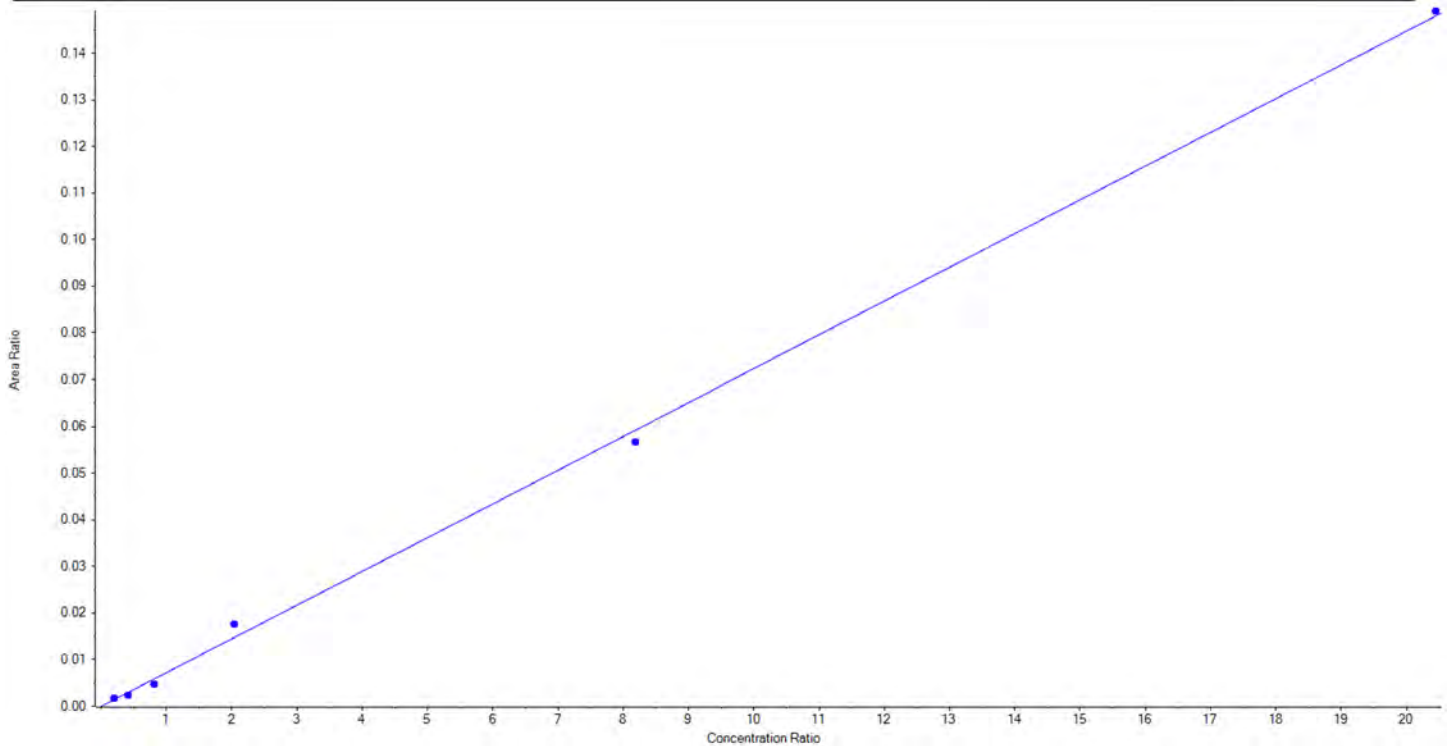
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Analyte Name	11Cl-pf3OUdS_2	Data File	AC_11112020_5-369.wiff
MRM Transition	631.0 / 83.0	Result Table	20-1455
Internal Standard	13C8-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.00724x + -3.67000e-5$ ($r = 0.99742$) (weighting: $1/x$) $r^2: 0.9948$

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	250.00	308.40	123.4
3	LD75	L2	True	500.00	404.44	80.9
4	LD76	L3	True	1000.00	803.03	80.3
5	LD77	L4	True	2500.00	2972.47	118.9
6	LD78	L5	True	10000.00	9583.94	95.8
7	LD79	L6	True	25000.00	25177.72	100.7





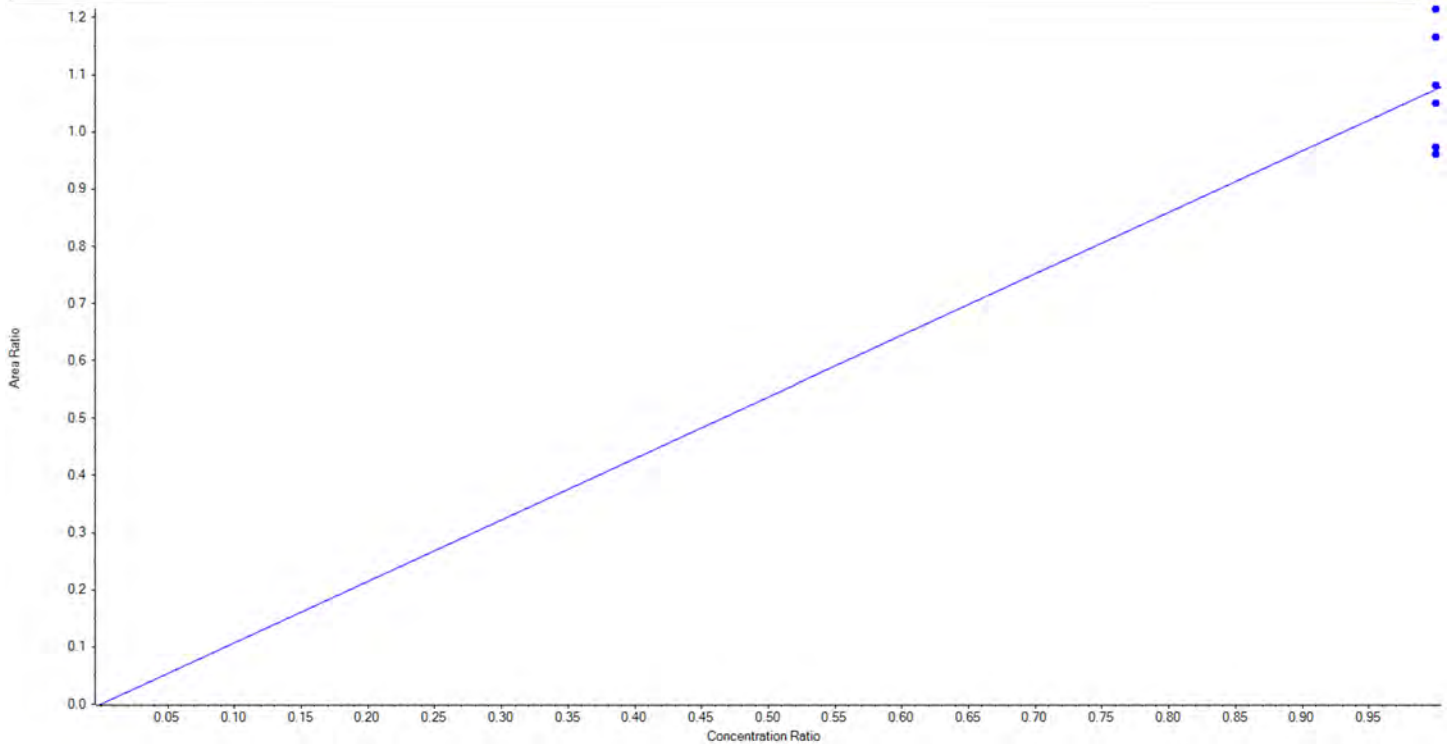
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Analyte Name	13C2-PFDoA	Data File	AC_11112020_5-369.wiff
MRM Transition	615.0 / 570.0	Result Table	20-1455_SIS
Internal Standard	13C2-PFDA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.07423 x$ (std. dev. = 0.10198) (weighting: None) r^2 : N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	1250.00	1222.19	97.8
3	LD75	L2	True	1250.00	1132.22	90.6
4	LD76	L3	True	1250.00	1117.49	89.4
5	LD77	L4	True	1250.00	1257.80	100.6
6	LD78	L5	True	1250.00	1356.71	108.5
7	LD79	L6	True	1250.00	1413.58	113.1





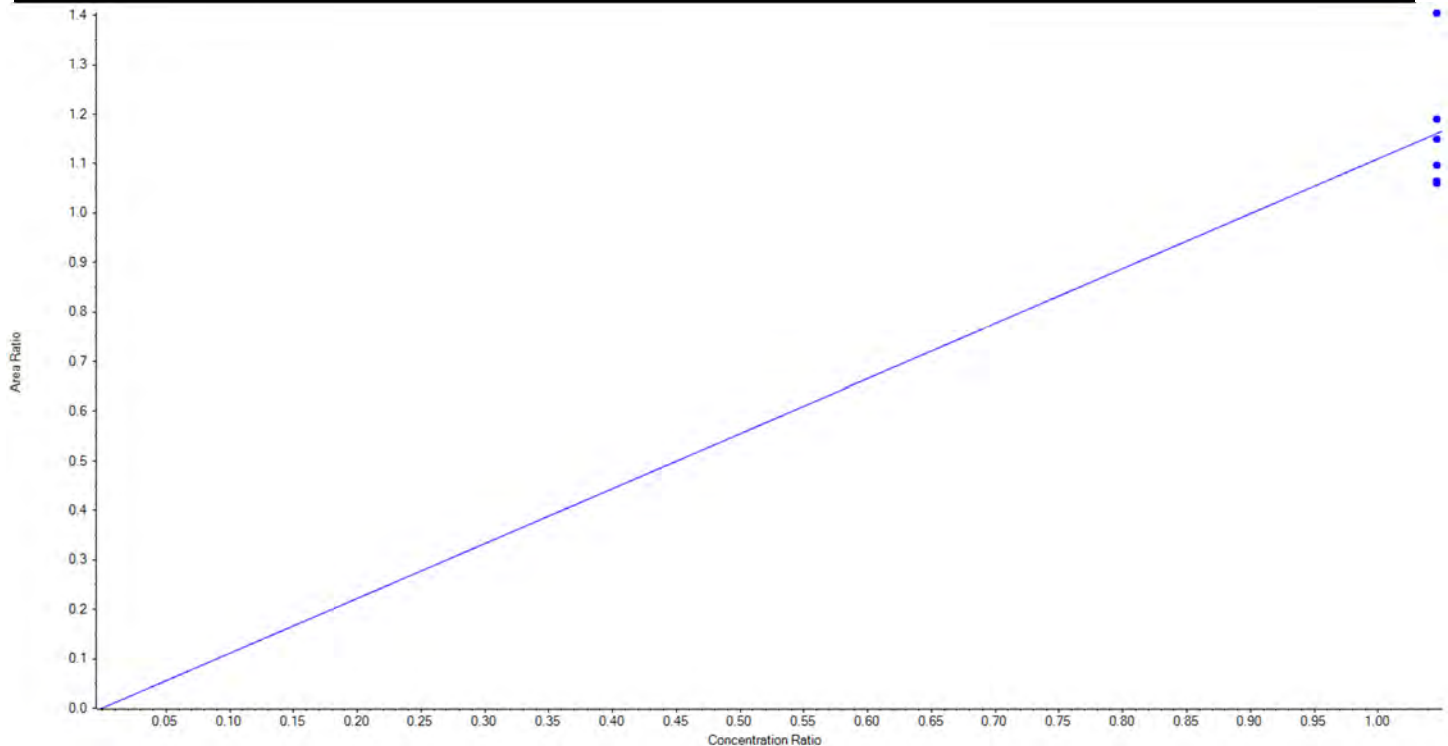
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Analyte Name	d3-MeFOSAA	Data File	AC_11112020_5-369.wiff
MRM Transition	573.0 / 419.0	Result Table	20-1455_SIS
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.10974 x$ (std. dev. = 0.12377) (weighting: None) r^2 :N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	1250.00	1238.21	99.1
3	LD75	L2	True	1250.00	1181.49	94.5
4	LD76	L3	True	1250.00	1140.93	91.3
5	LD77	L4	True	1250.00	1146.41	91.7
6	LD78	L5	True	1250.00	1280.70	102.5
7	LD79	L6	True	1250.00	1512.26	121.0





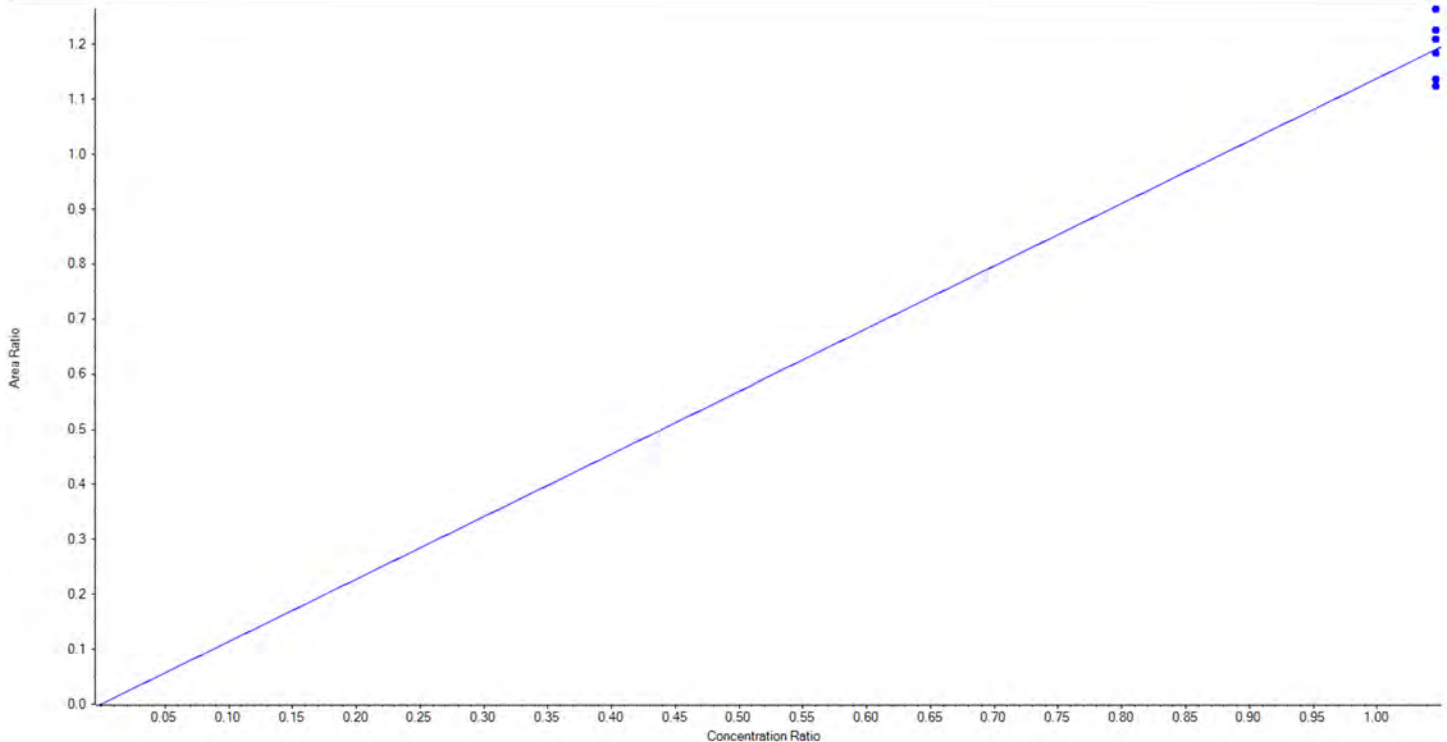
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Analyte Name	d5-EtFOSAA	Data File	AC_11112020_5-369.wiff
MRM Transition	589.0 / 419.0	Result Table	20-1455_SIS
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.13810 x$ (std. dev. = 0.05165) (weighting: None) r^2 :N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	1250.00	1242.65	99.4
3	LD75	L2	True	1250.00	1327.37	106.2
4	LD76	L3	True	1250.00	1179.54	94.4
5	LD77	L4	True	1250.00	1286.95	103.0
6	LD78	L5	True	1250.00	1270.83	101.7
7	LD79	L6	True	1250.00	1192.65	95.4





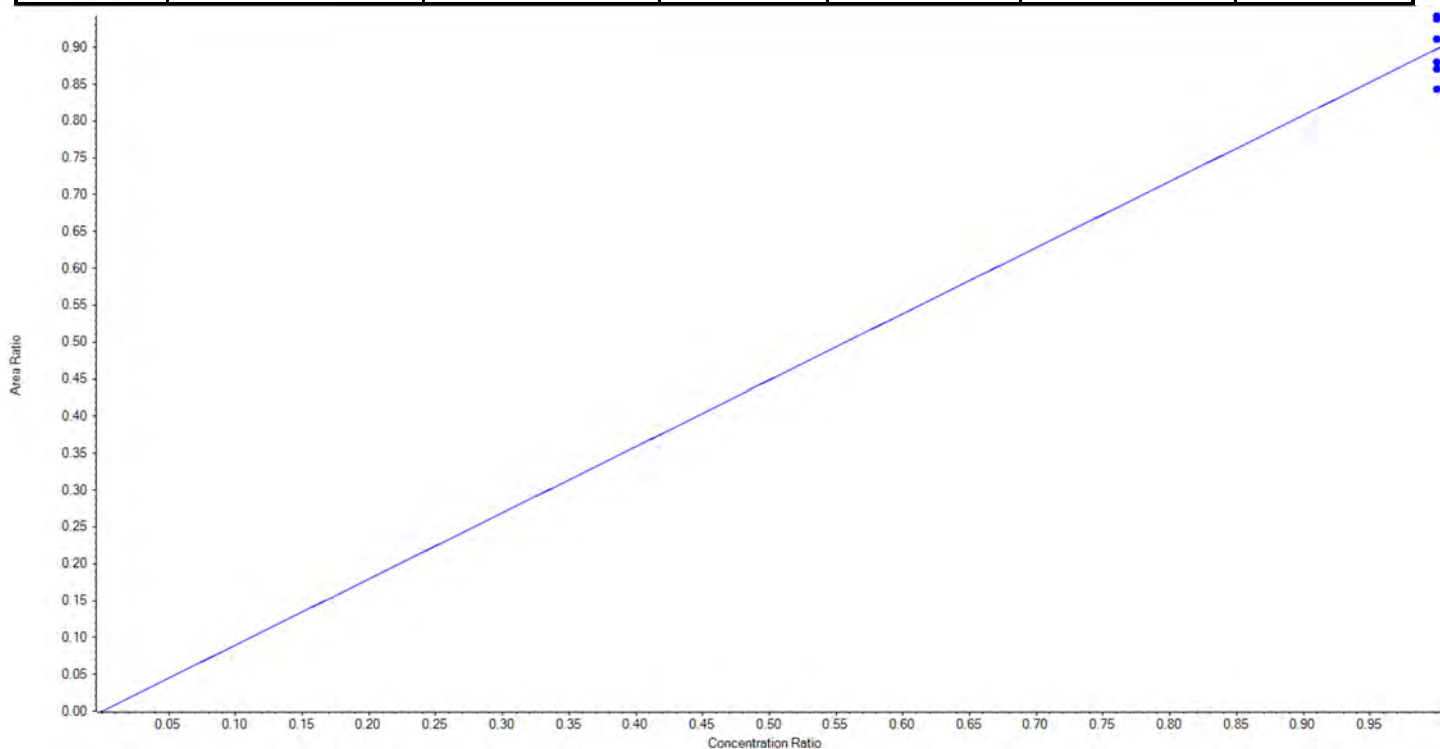
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Analyte Name	13C5-PFHxA	Data File	AC_11112020_5-369.wiff
MRM Transition	318.0 / 273.0	Result Table	20-1455_SIS
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.89743 x$ (std. dev. = 0.03977) (weighting: None) r^2 : N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	1250.00	1211.59	96.9
3	LD75	L2	True	1250.00	1312.32	105.0
4	LD76	L3	True	1250.00	1174.42	94.0
5	LD77	L4	True	1250.00	1268.78	101.5
6	LD78	L5	True	1250.00	1225.34	98.0
7	LD79	L6	True	1250.00	1307.55	104.6





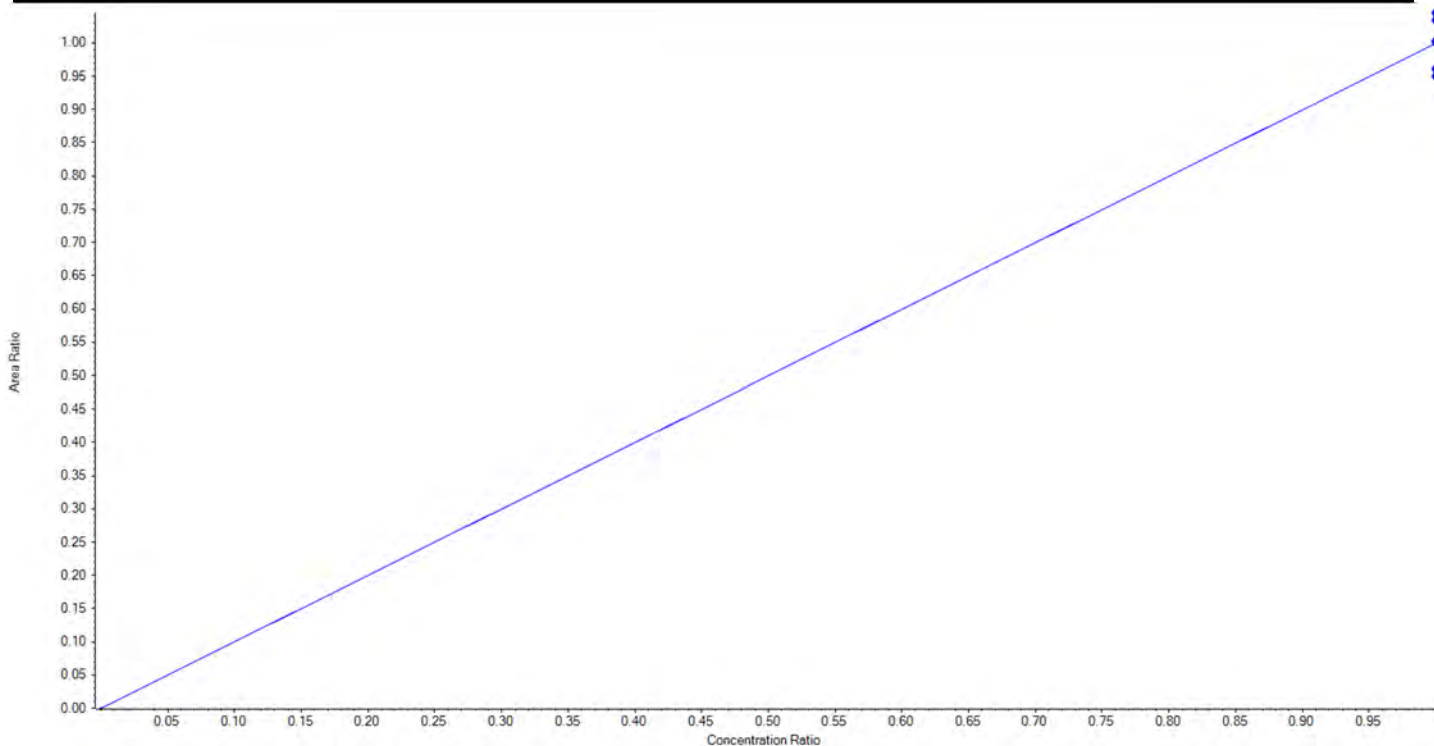
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Analyte Name	13C4-PFHpA	Data File	AC_11112020_5-369.wiff
MRM Transition	367.0 / 322.0	Result Table	20-1455_SIS
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.99915 x$ (std. dev. = 0.03812) (weighting: None) r^2 :N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	1250.00	1252.57	100.2
3	LD75	L2	True	1250.00	1307.33	104.6
4	LD76	L3	True	1250.00	1188.90	95.1
5	LD77	L4	True	1250.00	1201.63	96.1
6	LD78	L5	True	1250.00	1294.54	103.6
7	LD79	L6	True	1250.00	1255.03	100.4





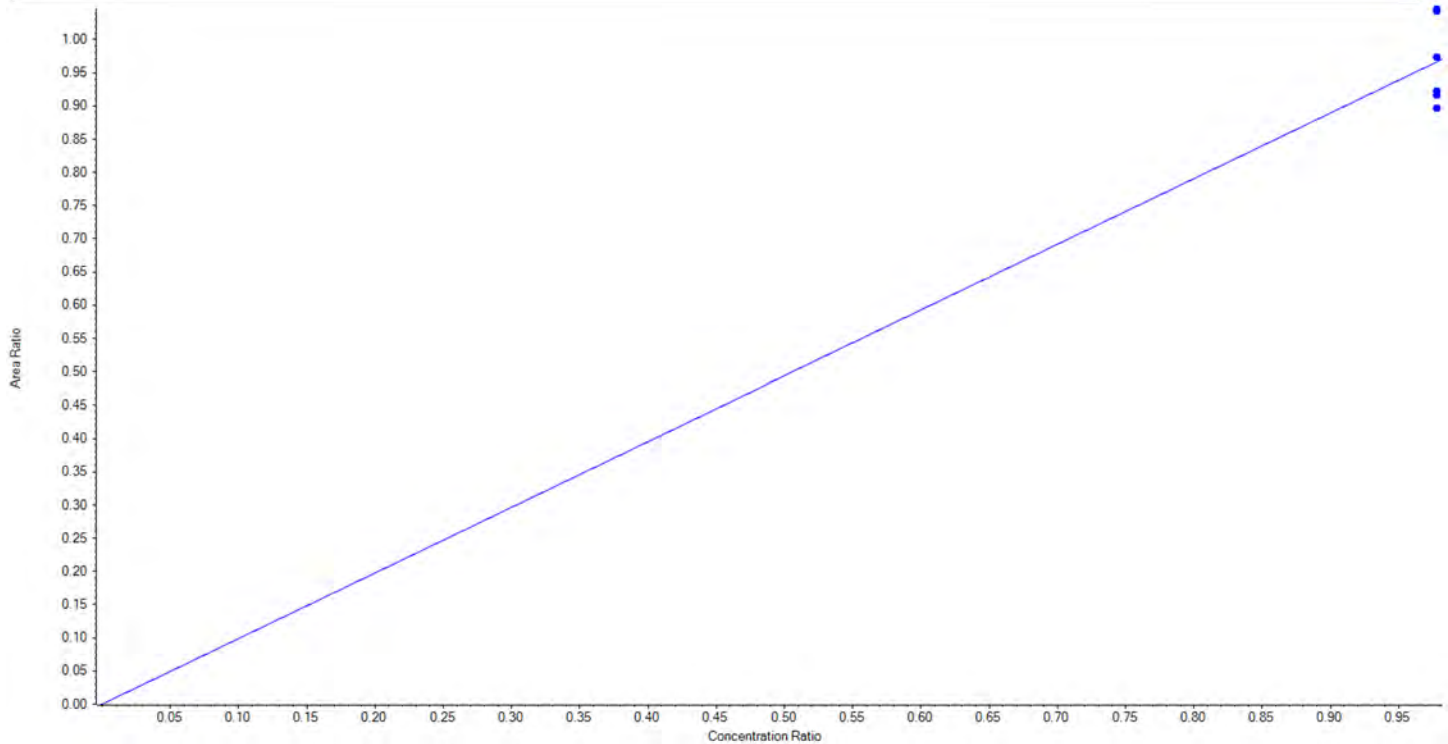
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Analyte Name	13C8-PFOA	Data File	AC_11112020_5-369.wiff
MRM Transition	421.0 / 376.0	Result Table	20-1455_SIS
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.98804 x$ (std. dev. = 0.06678) (weighting: None) r^2 : N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	1222.50	1167.35	95.5
3	LD75	L2	True	1222.50	1319.06	107.9
4	LD76	L3	True	1222.50	1134.94	92.8
5	LD77	L4	True	1222.50	1159.86	94.9
6	LD78	L5	True	1222.50	1230.74	100.7
7	LD79	L6	True	1222.50	1323.04	108.2





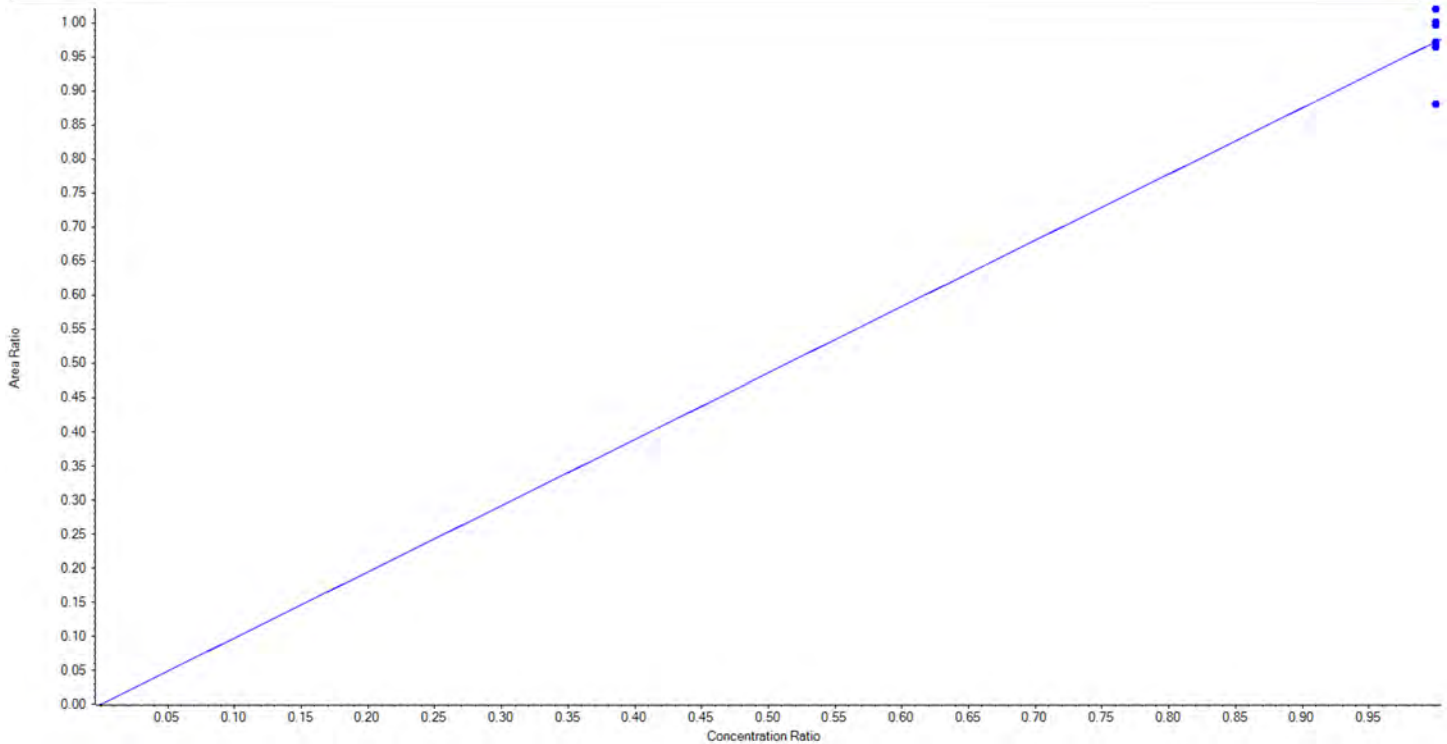
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Analyte Name	13C9-PFNA	Data File	AC_11112020_5-369.wiff
MRM Transition	472.0 / 427.0	Result Table	20-1455_SIS
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.97232 x$ (std. dev. = 0.04931) (weighting: None) r^2 :N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	1250.00	1249.47	100.0
3	LD75	L2	True	1250.00	1280.54	102.4
4	LD76	L3	True	1250.00	1131.75	90.5
5	LD77	L4	True	1250.00	1240.62	99.3
6	LD78	L5	True	1250.00	1286.13	102.9
7	LD79	L6	True	1250.00	1311.50	104.9





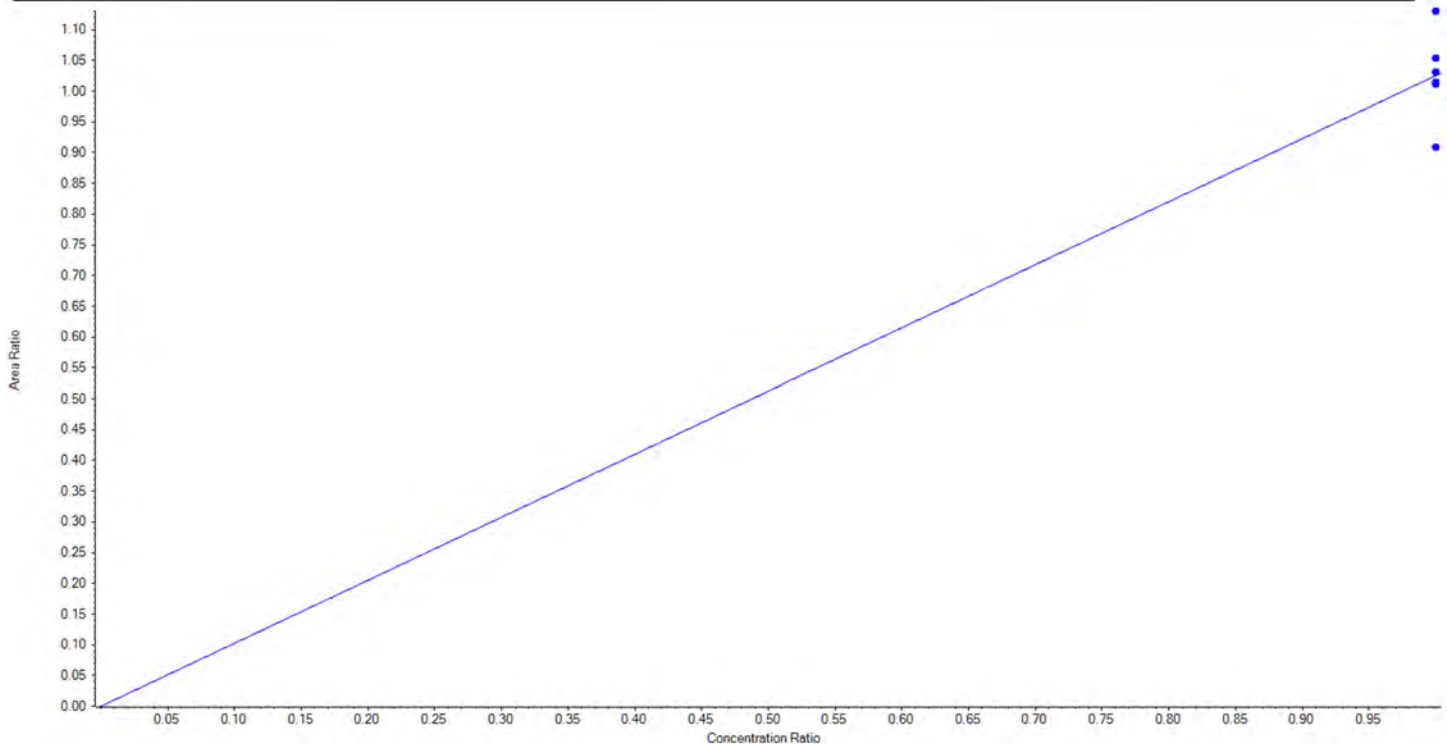
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Analyte Name	13C6-PFDA	Data File	AC_11112020_5-369.wiff
MRM Transition	519.0 / 474.0	Result Table	20-1455_SIS
Internal Standard	13C2-PFDA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.02533 x$ (std. dev. = 0.07149) (weighting: None) r^2 : N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	1250.00	1283.86	102.7
3	LD75	L2	True	1250.00	1234.00	98.7
4	LD76	L3	True	1250.00	1108.72	88.7
5	LD77	L4	True	1250.00	1237.93	99.0
6	LD78	L5	True	1250.00	1378.14	110.3
7	LD79	L6	True	1250.00	1257.34	100.6





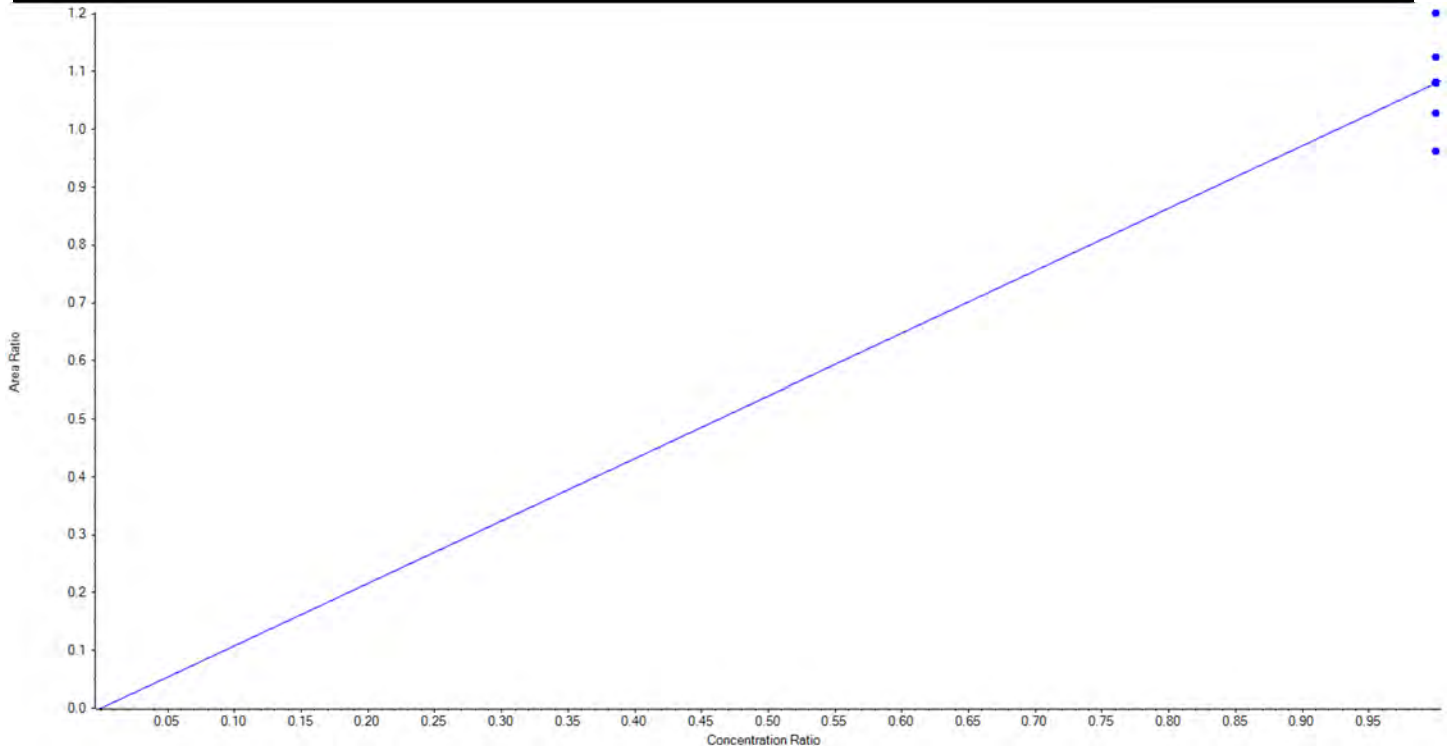
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Analyte Name	13C7-PFUnA	Data File	AC_11112020_5-369.wiff
MRM Transition	570.0 / 525.0	Result Table	20-1455_SIS
Internal Standard	13C2-PFDA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.07973 x$ (std. dev. = 0.08160) (weighting: None) r^2 : N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	1250.00	1302.85	104.2
3	LD75	L2	True	1250.00	1190.55	95.2
4	LD76	L3	True	1250.00	1113.95	89.1
5	LD77	L4	True	1250.00	1250.03	100.0
6	LD78	L5	True	1250.00	1390.63	111.3
7	LD79	L6	True	1250.00	1251.99	100.2





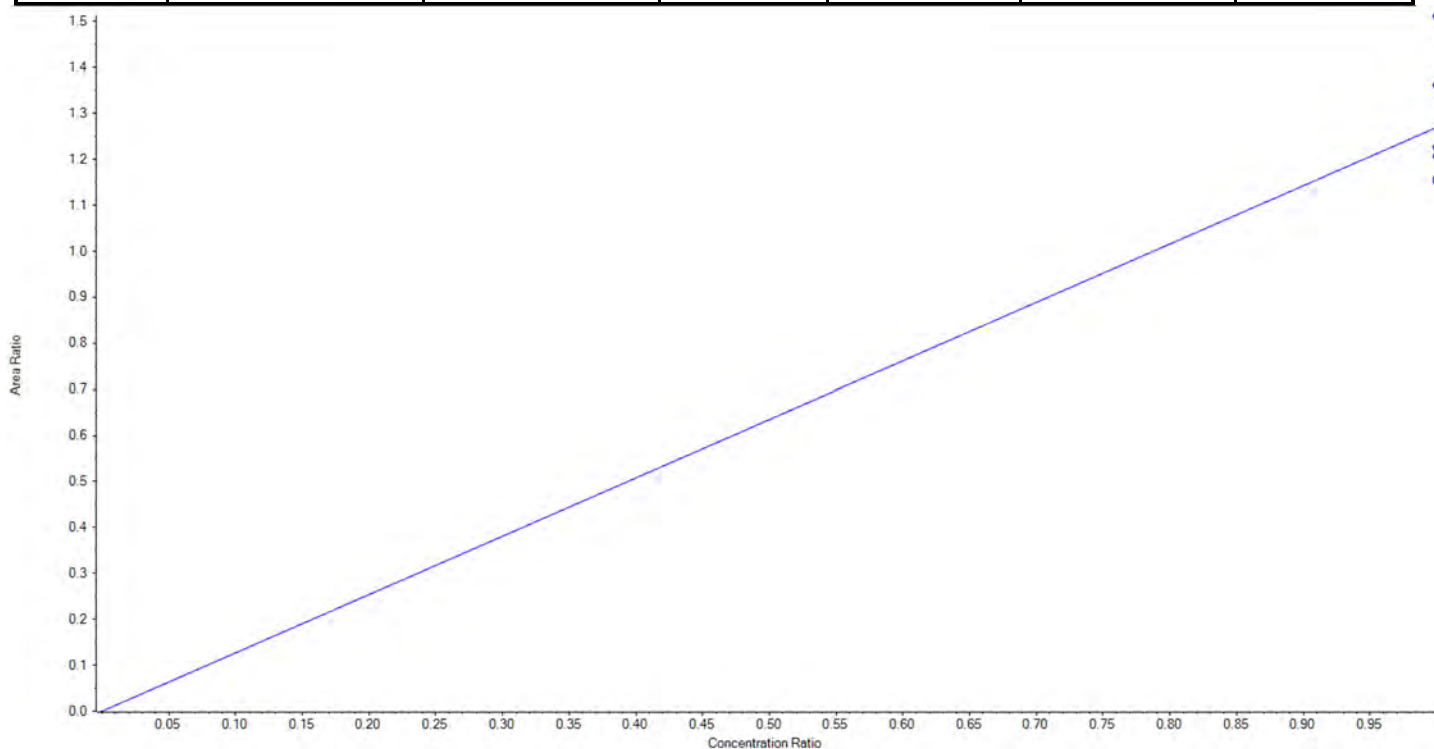
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Analyte Name	13C2-PFTeDA	Data File	AC_11112020_5-369.wiff
MRM Transition	715.0 / 670.0	Result Table	20-1455_SIS
Internal Standard	13C2-PFDA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.26934 x$ (std. dev. = 0.14103) (weighting: None) r^2 : N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	1250.00	1208.66	96.7
3	LD75	L2	True	1250.00	1139.61	91.2
4	LD76	L3	True	1250.00	1133.99	90.7
5	LD77	L4	True	1250.00	1187.98	95.0
6	LD78	L5	True	1250.00	1341.16	107.3
7	LD79	L6	True	1250.00	1488.59	119.1





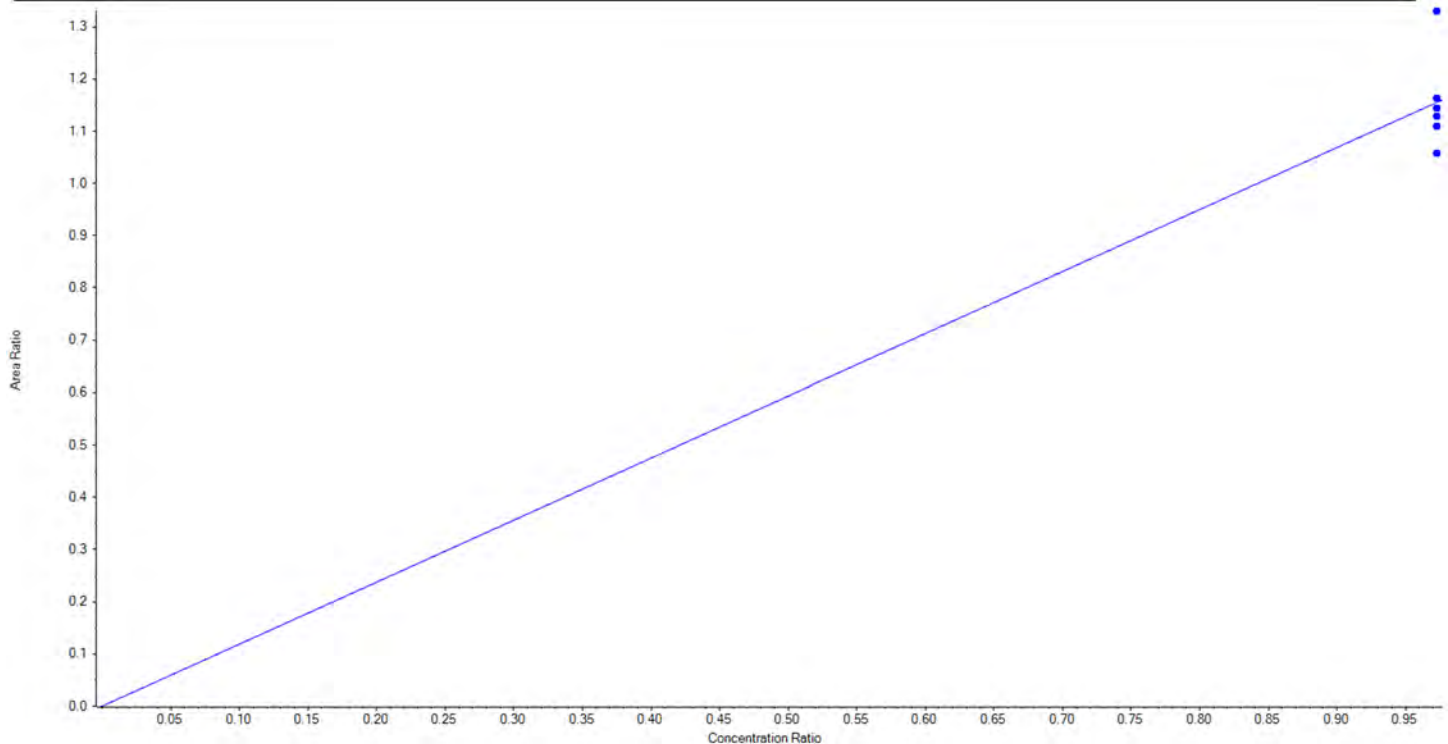
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Analyte Name	13C3-PFBS	Data File	AC_11112020_5-369.wiff
MRM Transition	302.0 / 99.0	Result Table	20-1455_SIS
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.18726 x$ (std. dev. = 0.09562) (weighting: None) r^2 :N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	1162.50	1170.48	100.7
3	LD75	L2	True	1162.50	1115.90	96.0
4	LD76	L3	True	1162.50	1063.78	91.5
5	LD77	L4	True	1162.50	1151.19	99.0
6	LD78	L5	True	1162.50	1135.16	97.7
7	LD79	L6	True	1162.50	1338.49	115.1





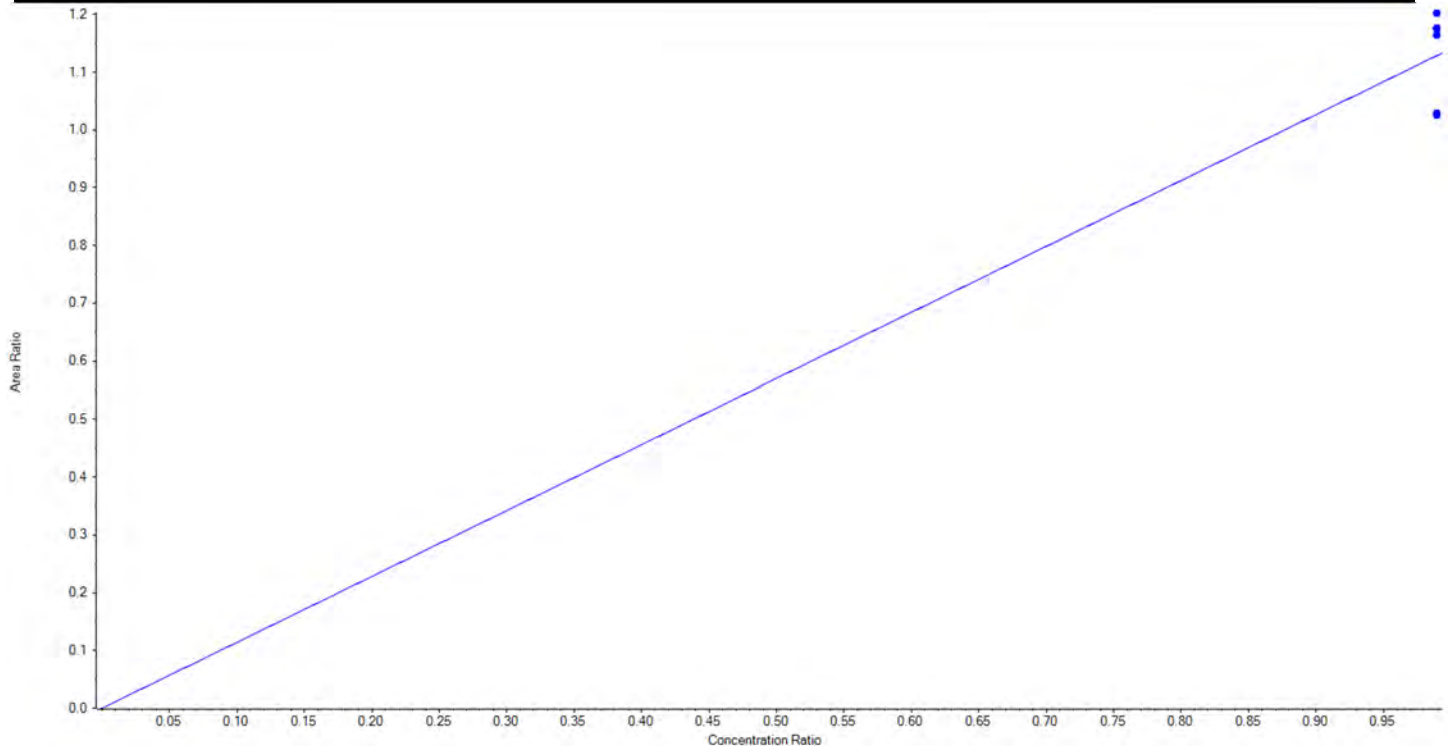
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Analyte Name	13C3-PFHxS	Data File	AC_11112020_5-369.wiff
MRM Transition	402.0 / 99.0	Result Table	20-1455_SIS
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.14045 x$ (std. dev. = 0.08056) (weighting: None) r^2 :N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	1182.50	1220.15	103.2
3	LD75	L2	True	1182.50	1077.30	91.1
4	LD76	L3	True	1182.50	1074.67	90.9
5	LD77	L4	True	1182.50	1259.62	106.5
6	LD78	L5	True	1182.50	1231.91	104.2
7	LD79	L6	True	1182.50	1231.36	104.1





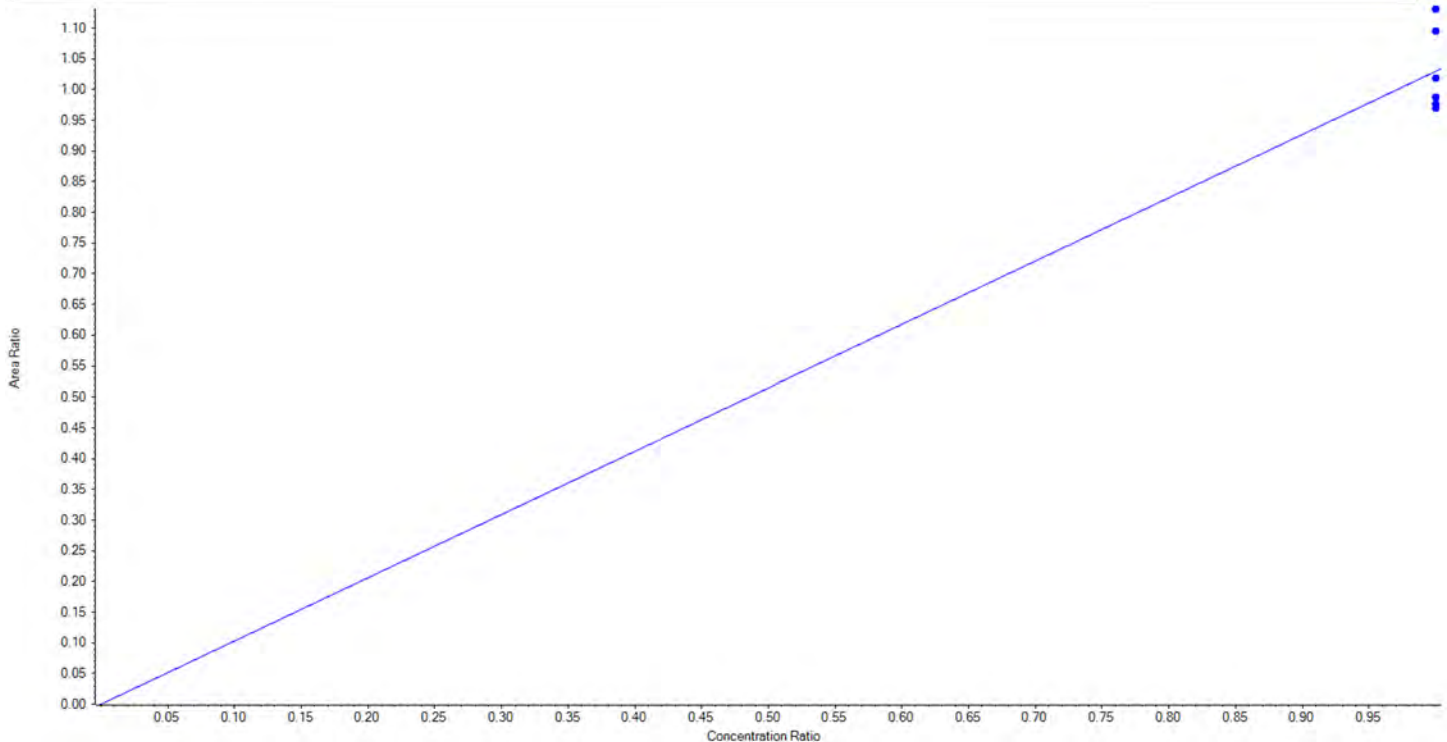
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Analyte Name	13C8-PFOS	Data File	AC_11112020_5-369.wiff
MRM Transition	507.0 / 99.0	Result Table	20-1455_SIS
Internal Standard	13C4-PFOS	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 1.02971 x$ (std. dev. = 0.06788) (weighting: None) r^2 : N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	1195.00	1132.51	94.8
3	LD75	L2	True	1195.00	1147.10	96.0
4	LD76	L3	True	1195.00	1124.76	94.1
5	LD77	L4	True	1195.00	1181.33	98.9
6	LD78	L5	True	1195.00	1271.69	106.4
7	LD79	L6	True	1195.00	1312.61	109.8





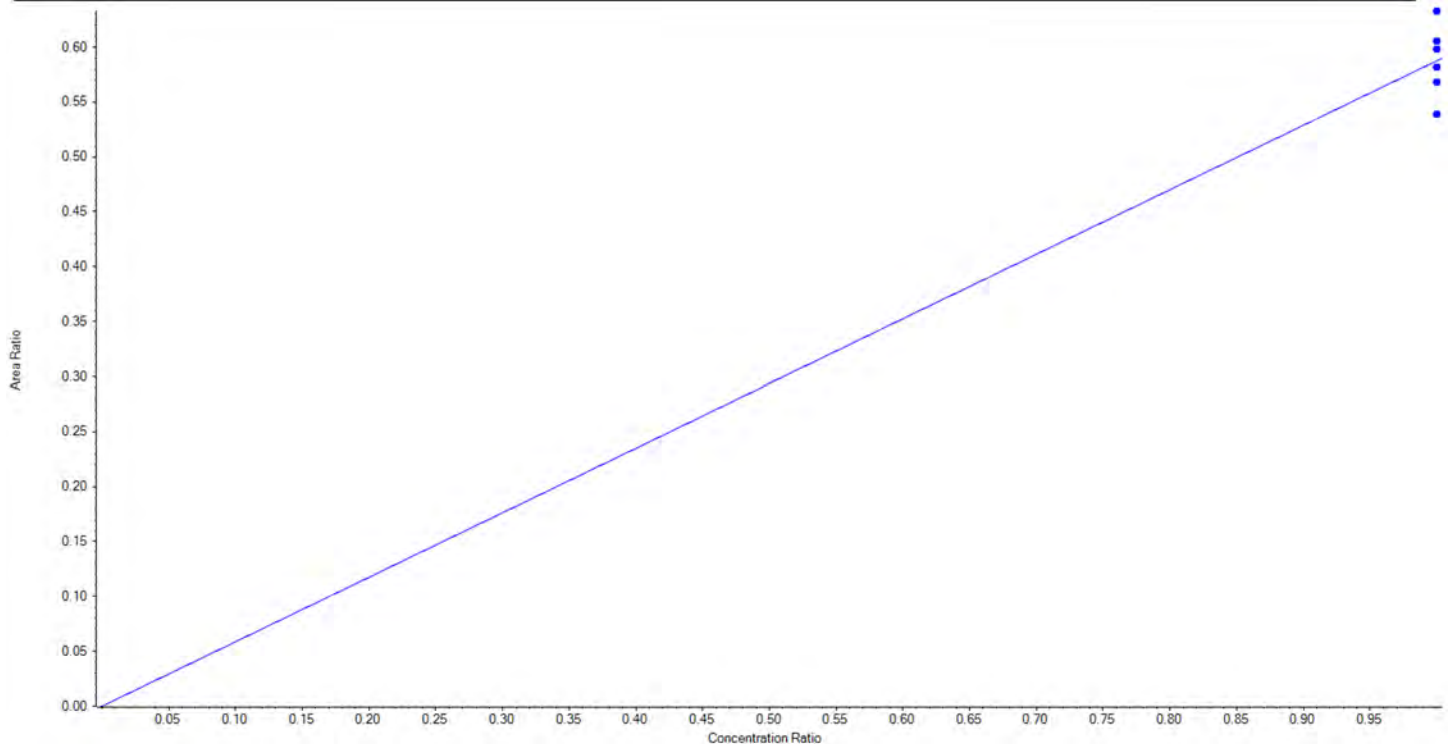
Calibration Summary Report

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Analyte Name	13C3-HFPO-DA	Data File	AC_11112020_5-369.wiff
MRM Transition	287.0 / 169.0	Result Table	20-1455_SIS
Internal Standard	13C2-PFOA	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Acquisition Method	5-0369.dam

Regression Equation: $y = 0.58752 x$ (std. dev. = 0.03249) (weighting: None) r^2 : N/A

Vial	Sample Name	Sample ID	Used for ICAL	Target Conc. (ng/L)	Calculated Conc. (ng/L)	Recovery (%)
2	LD74	L1	True	1250.00	1237.70	99.0
3	LD75	L2	True	1250.00	1272.79	101.8
4	LD76	L3	True	1250.00	1145.77	91.7
5	LD77	L4	True	1250.00	1209.54	96.8
6	LD78	L5	True	1250.00	1287.84	103.0
7	LD79	L6	True	1250.00	1346.36	107.7



Sample Name	LD74	Injection Vial	2
Sample ID	L1	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.56	86354.65	253.28	1371.7	False	13C3-PFBS	159053.72	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.56	25953.83	223.41	1415.6	False	13C3-PFBS	159053.72	1162.50	PFBS	0.301	0.325	✓
PFHxA_1	313.0 / 269.0	1.89	151853.91	267.05	289.2	False	13C5-PFHxA	703937.54	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.89	12526.91	265.30	156.2	False	13C5-PFHxA	703937.54	1250.00	PFHxA	0.082	0.077	✓
PFHpA_1	363.0 / 319.0	2.28	179013.66	262.18	512.9	False	13C4-PFHpA	810232.17	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.28	3421.09	238.24	171.8	False	13C4-PFHpA	810232.17	1250.00	PFHpA	0.019	0.020	✓
PFHxS_1	399.0 / 80.0	2.30	134479.45	254.14	665.3	False	13C3-PFHxS	159265.75	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	2.30	42644.96	250.16	497.7	False	13C3-PFHxS	159265.75	1182.50	PFHxS	0.317	0.289	✓
PFOA_1	413.0 / 369.0	2.67	191282.83	249.07	413.1	False	13C8-PFOA	746712.04	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.67	19850.69	298.43	218.8	False	13C8-PFOA	746712.04	1222.50	PFOA	0.104	0.075	✓
PFNA_1	463.0 / 419.0	3.04	176903.83	253.75	483.7	False	13C9-PFNA	786530.10	1250.00	PFNA			
PFNA_2	463.0 / 219.0	3.04	52848.92	250.85	610.5	False	13C9-PFNA	786530.10	1250.00	PFNA	0.299	0.298	✓
PFOS_1	499.0 / 80.0	3.04	155188.48	262.07	282.9	False	13C8-PFOS	133471.99	1195.00	PFOS			
PFOS_2	499.0 / 99.0	3.04	26690.91	259.20	1344.0	False	13C8-PFOS	133471.99	1195.00	PFOS	0.172	0.176	✓
PFDA_1	513.0 / 469.0	3.38	206096.13	260.93	590.7	False	13C6-PFDA	770481.58	1250.00	PFDA			
PFDA_2	513.0 / 219.0	3.38	7408.77	255.78	240.4	False	13C6-PFDA	770481.58	1250.00	PFDA	0.036	0.042	✓
PFUnA_1	563.0 / 519.0	3.68	176462.71	264.11	689.3	False	13C7-PFUnA	823357.04	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.68	7377.43	267.49	186.7	False	13C7-PFUnA	823357.04	1250.00	PFUnA	0.042	0.049	✓
PFDoA_1	613.0 / 569.0	3.95	169940.86	259.39	935.3	False	13C2-PFDoA	768448.73	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.95	23746.85	249.74	869.1	False	13C2-PFDoA	768448.73	1250.00	PFDoA	0.140	0.155	✓
PFTTrDA_1	663.0 / 619.0	4.19	160758.50	250.52	1455.5	False	13C2-PFTeDA	897970.43	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	4.19	12034.81	274.04	395.2	False	13C2-PFTeDA	897970.43	1250.00	PFTTrDA	0.075	0.069	✓
PFTeDA_1	713.0 / 669.0	4.40	201049.66	232.72	2418.8	False	13C2-PFTeDA	897970.43	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.40	12255.21	250.74	1097.3	False	13C2-PFTeDA	897970.43	1250.00	PFTeDA	0.061	0.056	✓
NMeFOSAA_1	570.0 / 419.0	3.53	33927.50	269.95	1075.2	False	d3-MeFOSAA	157466.54	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	23594.73	273.77	570.9	False	d3-MeFOSAA	157466.54	1250.00	NMeFOSAA	0.695	0.674	✓
NEiFOSAA_1	584.0 / 419.0	3.69	35973.64	266.28	4621923.4	False	d5-EiFOSAA	160402.97	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	3.68	2024.59	291.74	100.5	False	d5-EiFOSAA	160402.97	1250.00	NEiFOSAA	0.056	0.061	✓
HFPO-DA_1	285.0 / 169.0	1.99	102914.70	246.06	1572.0	False	13C3-HFPO-DA	470774.89	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	1.99	3101.99	244.14	728538.6	False	13C3-HFPO-DA	470774.89	1250.00	HFPO-DA	0.030	0.026	✓
ADONA_1	377.0 / 251.0	2.31	335094.92	216.49	1787.8	False	13C8-PFOA	746712.04	1222.50	ADONA			
ADONA_2	377.0 / 85.0	2.31	5511.84	221.19	9477768.2	False	13C8-PFOA	746712.04	1222.50	ADONA	0.016	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	3.22	309733.71	227.44	1551.0	False	13C8-PFOA	746712.04	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	3.22	2786.95	230.43	159.3	False	13C8-PFOA	746712.04	1222.50	9CI-PF3ONS	0.009	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.81	264666.06	237.32	1728.5	False	13C8-PFOA	746712.04	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.80	1335.86	308.40	316.7	False	13C8-PFOA	746712.04	1222.50	11Cl-PF3OUdS	0.005	0.004	✓

Sample Name	LD75	Injection Vial	3
Sample ID	L2	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:29:49 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.57	181203.50	523.34	3134.6	False	13C3-PFBS	155488.57	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.56	60161.34	529.18	2333.1	False	13C3-PFBS	155488.57	1162.50	PFBS	0.332	0.325	✓
PFHxA_1	313.0 / 269.0	1.89	302037.02	519.48	533.7	False	13C5-PFHxA	715659.11	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.89	25802.12	568.33	376.0	False	13C5-PFHxA	715659.11	1250.00	PFHxA	0.085	0.077	✓
PFHpA_1	363.0 / 319.0	2.29	342113.02	527.32	514.6	False	13C4-PFHpA	793737.63	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.29	6383.76	494.72	173.4	False	13C4-PFHpA	793737.63	1250.00	PFHpA	0.019	0.020	✓
PFHxS_1	399.0 / 80.0	2.31	289905.26	595.93	1010.2	False	13C3-PFHxS	144190.54	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	2.31	82175.58	573.82	872.5	False	13C3-PFHxS	144190.54	1182.50	PFHxS	0.283	0.289	✓
PFOA_1	413.0 / 369.0	2.68	334625.91	441.64	477.0	False	13C8-PFOA	791954.19	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.68	26723.89	425.06	236.0	False	13C8-PFOA	791954.19	1222.50	PFOA	0.080	0.075	✓
PFNA_1	463.0 / 419.0	3.05	322017.36	491.86	695.1	False	13C9-PFNA	756601.31	1250.00	PFNA			
PFNA_2	463.0 / 219.0	3.05	94924.46	484.06	977.5	False	13C9-PFNA	756601.31	1250.00	PFNA	0.295	0.298	✓
PFOS_1	499.0 / 80.0	3.05	309986.69	546.96	433.0	False	13C8-PFOS	138625.20	1195.00	PFOS			
PFOS_2	499.0 / 99.0	3.05	50011.11	500.59	644.5	False	13C8-PFOS	138625.20	1195.00	PFOS	0.161	0.176	✓
PFDA_1	513.0 / 469.0	3.39	368912.20	488.63	866.7	False	13C6-PFDA	787198.60	1250.00	PFDA			
PFDA_2	513.0 / 219.0	3.39	14185.14	471.20	511.7	False	13C6-PFDA	787198.60	1250.00	PFDA	0.038	0.042	✓
PFUnA_1	563.0 / 519.0	3.69	357443.10	535.08	1286.7	False	13C7-PFUnA	799768.32	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	17831.33	565.78	1329.9	False	13C7-PFUnA	799768.32	1250.00	PFUnA	0.050	0.049	✓
PFDoA_1	613.0 / 569.0	3.96	333749.86	533.30	1446.5	False	13C2-PFDoA	756714.57	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.96	49470.07	518.67	1329.2	False	13C2-PFDoA	756714.57	1250.00	PFDoA	0.148	0.155	✓
PFTTrDA_1	663.0 / 619.0	4.19	308671.90	511.07	1947.1	False	13C2-PFTTeDA	899990.98	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	4.19	20453.42	487.40	511.8	False	13C2-PFTTeDA	899990.98	1250.00	PFTTrDA	0.066	0.069	✓
PFTTeDA_1	713.0 / 669.0	4.40	410627.10	522.68	4368.8	False	13C2-PFTTeDA	899990.98	1250.00	PFTTeDA			
PFTTeDA_2	713.0 / 169.0	4.40	23103.43	521.57	1955.4	False	13C2-PFTTeDA	899990.98	1250.00	PFTTeDA	0.056	0.056	✓
NMeFOSAA_1	570.0 / 419.0	3.54	61605.43	492.20	31829.6	False	d3-MeFOSAA	153213.51	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.54	43327.63	505.05	1021.7	False	d3-MeFOSAA	153213.51	1250.00	NMeFOSAA	0.703	0.674	✓
NEtFOSAA_1	584.0 / 419.0	3.69	67425.35	479.90	5408.4	False	d5-EtFOSAA	176853.04	1250.00	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.68	3760.68	464.55	570.2	False	d5-EtFOSAA	176853.04	1250.00	NEtFOSAA	0.056	0.061	✓
HFPO-DA_1	285.0 / 169.0	2.00	206750.70	523.40	1812.0	False	13C3-HFPO-DA	454402.53	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	2.00	5219.47	478.77	870.1	False	13C3-HFPO-DA	454402.53	1250.00	HFPO-DA	0.025	0.026	✓
ADONA_1	377.0 / 251.0	2.32	716154.40	499.25	3044.4	False	13C8-PFOA	791954.19	1222.50	ADONA			
ADONA_2	377.0 / 85.0	2.32	11337.92	564.34	2371.7	False	13C8-PFOA	791954.19	1222.50	ADONA	0.016	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	3.23	645852.07	500.60	2415.3	False	13C8-PFOA	791954.19	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	3.22	6676.61	599.25	3998.6	True	13C8-PFOA	791954.19	1222.50	9CI-PF3ONS	0.010	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.82	535319.50	491.62	2276.2	False	13C8-PFOA	791954.19	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.82	1867.03	404.44	140.1	False	13C8-PFOA	791954.19	1222.50	11Cl-PF3OUdS	0.003	0.004	✓

Sample Name	LD76	Injection Vial	4
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:40:39 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.56	344596.37	936.45	4258.7	False	13C3-PFBS	162732.90	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.56	117663.92	988.54	5484.6	False	13C3-PFBS	162732.90	1162.50	PFBS	0.341	0.325	✓
PFHxA_1	313.0 / 269.0	1.89	575019.61	944.13	669.7	False	13C5-PFHxA	747633.81	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.88	40336.13	865.38	454.7	False	13C5-PFHxA	747633.81	1250.00	PFHxA	0.070	0.077	✓
PFHpA_1	363.0 / 319.0	2.28	595739.53	875.65	786.5	False	13C4-PFHpA	842635.29	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.28	13544.10	1033.90	288.0	False	13C4-PFHpA	842635.29	1250.00	PFHpA	0.023	0.020	✓
PFHxS_1	399.0 / 80.0	2.30	487282.97	911.03	1581.8	False	13C3-PFHxS	157916.94	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	2.30	139904.32	912.35	1348.6	False	13C3-PFHxS	157916.94	1182.50	PFHxS	0.287	0.289	✓
PFOA_1	413.0 / 369.0	2.67	692528.00	960.31	924.1	False	13C8-PFOA	795445.44	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.67	48396.93	904.32	450.1	False	13C8-PFOA	795445.44	1222.50	PFOA	0.070	0.075	✓
PFNA_1	463.0 / 419.0	3.05	640118.51	959.82	984.6	False	13C9-PFNA	780594.74	1250.00	PFNA			
PFNA_2	463.0 / 219.0	3.04	193009.54	971.53	1805.9	False	13C9-PFNA	780594.74	1250.00	PFNA	0.302	0.298	✓
PFOS_1	499.0 / 80.0	3.04	524250.89	885.85	594.0	False	13C8-PFOS	149229.16	1195.00	PFOS			
PFOS_2	499.0 / 99.0	3.04	103321.99	998.43	4552.2	False	13C8-PFOS	149229.16	1195.00	PFOS	0.197	0.176	✓
PFDA_1	513.0 / 469.0	3.38	680847.70	978.20	1284.0	False	13C6-PFDA	755566.33	1250.00	PFDA			
PFDA_2	513.0 / 219.0	3.38	30036.16	1028.27	1622.7	False	13C6-PFDA	755566.33	1250.00	PFDA	0.044	0.042	✓
PFUnA_1	563.0 / 519.0	3.69	656617.35	971.28	1286.2	False	13C7-PFUnA	799400.28	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	29336.53	887.94	1102.2	False	13C7-PFUnA	799400.28	1250.00	PFUnA	0.045	0.049	✓
PFDoA_1	613.0 / 569.0	3.96	590995.98	906.58	2333.6	False	13C2-PFDoA	797855.70	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.96	100197.02	988.36	3026.6	False	13C2-PFDoA	797855.70	1250.00	PFDoA	0.170	0.155	✓
PFTTrDA_1	663.0 / 619.0	4.19	586281.67	939.91	2247.2	False	13C2-PFTeDA	956693.34	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	4.19	39621.61	915.06	973.4	False	13C2-PFTeDA	956693.34	1250.00	PFTTrDA	0.068	0.069	✓
PFTeDA_1	713.0 / 669.0	4.40	753198.32	935.76	5268.4	False	13C2-PFTeDA	956693.34	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.40	40386.58	894.23	2255.0	False	13C2-PFTeDA	956693.34	1250.00	PFTeDA	0.054	0.056	✓
NMeFOSAA_1	570.0 / 419.0	3.53	125749.67	929.58	28496.9	False	d3-MeFOSAA	163731.57	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	81366.92	879.35	4334.8	False	d3-MeFOSAA	163731.57	1250.00	NMeFOSAA	0.647	0.674	✓
NEtFOSAA_1	584.0 / 419.0	3.69	133758.29	1011.88	3249.2	False	d5-EtFOSAA	172836.16	1250.00	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.68	8006.08	964.88	9919.0	False	d5-EtFOSAA	172836.16	1250.00	NEtFOSAA	0.060	0.061	✓
HFPO-DA_1	285.0 / 169.0	1.99	385598.94	937.00	2610.4	False	13C3-HFPO-DA	477510.02	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	1.99	11181.83	1050.36	1134.7	False	13C3-HFPO-DA	477510.02	1250.00	HFPO-DA	0.029	0.026	✓
ADONA_1	377.0 / 251.0	2.31	1344012.39	986.74	4423.1	False	13C8-PFOA	795445.44	1222.50	ADONA			
ADONA_2	377.0 / 85.0	2.31	16560.73	886.12	68388.4	False	13C8-PFOA	795445.44	1222.50	ADONA	0.012	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	3.22	1177036.25	953.37	2817.8	False	13C8-PFOA	795445.44	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	3.22	8223.55	749.01	550.9	False	13C8-PFOA	795445.44	1222.50	9CI-PF3ONS	0.007	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.81	1040252.59	991.37	3546.0	False	13C8-PFOA	795445.44	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.81	3752.22	803.03	177.7	False	13C8-PFOA	795445.44	1222.50	11Cl-PF3OUdS	0.004	0.004	✓

Sample Name	LD77	Injection Vial	5
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:51:31 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.56	870012.97	2403.76	7115.4	False	13C3-PFBS	158198.02	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.56	292192.03	2524.55	6002.8	False	13C3-PFBS	158198.02	1162.50	PFBS	0.336	0.325	✓
PFHxA_1	313.0 / 269.0	1.89	1436716.83	2405.75	1242.4	False	13C5-PFHxA	731615.04	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.89	103278.23	2312.82	1217.5	False	13C5-PFHxA	731615.04	1250.00	PFHxA	0.072	0.077	✓
PFHpA_1	363.0 / 319.0	2.29	1529447.77	2485.68	1540.2	False	13C4-PFHpA	771431.33	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.29	30178.01	2581.15	711.6	False	13C4-PFHpA	771431.33	1250.00	PFHpA	0.020	0.020	✓
PFHxS_1	399.0 / 80.0	2.30	1310102.21	2315.93	2768.5	False	13C3-PFHxS	166272.40	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	2.30	374928.45	2378.81	1934.4	False	13C3-PFHxS	166272.40	1182.50	PFHxS	0.286	0.289	✓
PFOA_1	413.0 / 369.0	2.68	1776364.83	2745.00	1407.9	False	13C8-PFOA	736336.77	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.68	111707.94	2511.33	825.4	False	13C8-PFOA	736336.77	1222.50	PFOA	0.063	0.075	✓
PFNA_1	463.0 / 419.0	3.05	1657929.62	2524.70	1356.2	False	13C9-PFNA	775080.62	1250.00	PFNA			
PFNA_2	463.0 / 219.0	3.05	512963.44	2630.71	2394.8	False	13C9-PFNA	775080.62	1250.00	PFNA	0.309	0.298	✓
PFOS_1	499.0 / 80.0	3.05	1340598.24	2480.50	963.3	False	13C8-PFOS	140795.95	1195.00	PFOS			
PFOS_2	499.0 / 99.0	3.05	238056.70	2497.35	2374.8	False	13C8-PFOS	140795.95	1195.00	PFOS	0.178	0.176	✓
PFDA_1	513.0 / 469.0	3.39	1709717.22	2506.86	1872.0	False	13C6-PFDA	759378.12	1250.00	PFDA			
PFDA_2	513.0 / 219.0	3.39	75166.39	2546.50	2173.6	False	13C6-PFDA	759378.12	1250.00	PFDA	0.044	0.042	✓
PFUnA_1	563.0 / 519.0	3.69	1545262.28	2243.71	1659.8	False	13C7-PFUnA	807480.43	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	80894.36	2307.95	1422.0	False	13C7-PFUnA	807480.43	1250.00	PFUnA	0.052	0.049	✓
PFDoA_1	613.0 / 569.0	3.96	1570605.49	2399.58	2723.5	False	13C2-PFDoA	809863.42	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.96	250120.61	2418.03	4276.3	False	13C2-PFDoA	809863.42	1250.00	PFDoA	0.159	0.155	✓
PFTTrDA_1	663.0 / 619.0	4.19	1406583.16	2443.75	3277.3	False	13C2-PFTTeDA	902164.84	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	4.19	98377.72	2462.66	1782.2	False	13C2-PFTTeDA	902164.84	1250.00	PFTTrDA	0.070	0.069	✓
PFTeDA_1	713.0 / 669.0	4.40	1946990.47	2646.35	10005.0	False	13C2-PFTeDA	902164.84	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.40	106975.96	2614.34	5242.5	False	13C2-PFTeDA	902164.84	1250.00	PFTeDA	0.055	0.056	✓
NMeFOSAA_1	570.0 / 419.0	3.53	305763.80	2491.76	15121.5	False	d3-MeFOSAA	148390.46	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.54	209824.33	2507.60	2809.2	False	d3-MeFOSAA	148390.46	1250.00	NMeFOSAA	0.686	0.674	✓
NEiFOSAA_1	584.0 / 419.0	3.69	302321.91	2371.06	3045.7	False	d5-EiFOSAA	169059.63	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	3.69	18859.75	2262.67	3361.0	False	d5-EiFOSAA	169059.63	1250.00	NEiFOSAA	0.062	0.061	✓
HFPO-DA_1	285.0 / 169.0	2.00	1002696.12	2566.03	5024.2	False	13C3-HFPO-DA	456602.69	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	1.99	24290.21	2477.15	6648.9	False	13C3-HFPO-DA	456602.69	1250.00	HFPO-DA	0.024	0.026	✓
ADONA_1	377.0 / 251.0	2.31	3291148.33	2712.38	5588.4	False	13C8-PFOA	736336.77	1222.50	ADONA			
ADONA_2	377.0 / 85.0	2.31	41666.64	2655.92	6332715.9	False	13C8-PFOA	736336.77	1222.50	ADONA	0.013	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	3.23	2936055.10	2662.76	3065.9	False	13C8-PFOA	736336.77	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	3.23	25718.66	2679.35	862.9	False	13C8-PFOA	736336.77	1222.50	9CI-PF3ONS	0.009	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.81	2479200.88	2620.11	4639.7	False	13C8-PFOA	736336.77	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.81	12929.98	2972.47	617.1	False	13C8-PFOA	736336.77	1222.50	11Cl-PF3OUdS	0.005	0.004	✓

Sample Name	LD78	Injection Vial	6
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:02:22 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.56	3429858.78	10615.61	17335.0	False	13C3-PFBS	140413.83	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.56	1113484.42	10837.71	15907.8	False	13C3-PFBS	140413.83	1162.50	PFBS	0.325	0.325	✓
PFHxA_1	313.0 / 269.0	1.89	5592705.43	10436.02	2836.7	False	13C5-PFHxA	655866.04	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.89	426925.31	10773.30	2520.5	False	13C5-PFHxA	655866.04	1250.00	PFHxA	0.076	0.077	✓
PFHpA_1	363.0 / 319.0	2.28	6354073.16	10379.27	3042.9	False	13C4-PFHpA	771439.32	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.28	114496.82	9919.33	1917.1	False	13C4-PFHpA	771439.32	1250.00	PFHpA	0.018	0.020	✓
PFHxS_1	399.0 / 80.0	2.30	4920753.64	9859.47	5601.9	False	13C3-PFHxS	146372.94	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	2.30	1432396.29	10446.12	4925.7	False	13C3-PFHxS	146372.94	1182.50	PFHxS	0.291	0.289	✓
PFOA_1	413.0 / 369.0	2.67	7005333.44	11133.01	2679.1	False	13C8-PFOA	725267.65	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.67	446417.01	10714.20	2321.8	False	13C8-PFOA	725267.65	1222.50	PFOA	0.064	0.075	✓
PFNA_1	463.0 / 419.0	3.04	6617333.44	10513.03	3003.0	False	13C9-PFNA	745851.49	1250.00	PFNA			
PFNA_2	463.0 / 219.0	3.04	1892242.53	10135.77	2948.5	False	13C9-PFNA	745851.49	1250.00	PFNA	0.286	0.298	✓
PFOS_1	499.0 / 80.0	3.04	5344986.52	10351.26	2071.8	False	13C8-PFOS	136428.61	1195.00	PFOS			
PFOS_2	499.0 / 99.0	3.04	926370.64	10152.99	16890.1	False	13C8-PFOS	136428.61	1195.00	PFOS	0.173	0.176	✓
PFDA_1	513.0 / 469.0	3.38	6269102.84	9957.65	3032.6	False	13C6-PFDA	709716.45	1250.00	PFDA			
PFDA_2	513.0 / 219.0	3.38	271861.45	9827.93	3551.4	False	13C6-PFDA	709716.45	1250.00	PFDA	0.043	0.042	✓
PFUnA_1	563.0 / 519.0	3.69	6412854.79	9920.24	3331.3	False	13C7-PFUnA	754143.81	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	322818.20	9642.05	2871.9	False	13C7-PFUnA	754143.81	1250.00	PFUnA	0.050	0.049	✓
PFDoA_1	613.0 / 569.0	3.96	6143321.56	10389.35	5333.1	False	13C2-PFDoA	735396.42	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.96	949921.86	10085.67	5496.5	False	13C2-PFDoA	735396.42	1250.00	PFDoA	0.155	0.155	✓
PFTTrDA_1	663.0 / 619.0	4.19	5884491.32	10902.99	6337.6	False	13C2-PFTeDA	855038.13	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	4.19	390130.16	10408.23	3666.1	False	13C2-PFTeDA	855038.13	1250.00	PFTTrDA	0.066	0.069	✓
PFTeDA_1	713.0 / 669.0	4.40	7260534.74	10549.36	18809.5	False	13C2-PFTeDA	855038.13	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.40	391330.98	10252.79	10533.3	False	13C2-PFTeDA	855038.13	1250.00	PFTeDA	0.054	0.056	✓
NMeFOSAA_1	570.0 / 419.0	3.53	1196194.52	10116.21	4824.4	False	d3-MeFOSAA	148708.33	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.53	803739.62	10156.37	3781.2	False	d3-MeFOSAA	148708.33	1250.00	NMeFOSAA	0.672	0.674	✓
NEtFOSAA_1	584.0 / 419.0	3.69	1191608.40	10165.97	4395.8	False	d5-EtFOSAA	150545.86	1250.00	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	79471.57	10388.67	186398.7	False	d5-EtFOSAA	150545.86	1250.00	NEtFOSAA	0.067	0.061	✓
HFPO-DA_1	285.0 / 169.0	1.99	3891704.30	10107.46	8578.8	False	13C3-HFPO-DA	451274.23	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	1.99	98739.12	10411.17	660675.7	False	13C3-HFPO-DA	451274.23	1250.00	HFPO-DA	0.025	0.026	✓
ADONA_1	377.0 / 251.0	2.31	13128036.73	11173.81	12879.5	False	13C8-PFOA	725267.65	1222.50	ADONA			
ADONA_2	377.0 / 85.0	2.31	158747.44	10686.52	87239.4	False	13C8-PFOA	725267.65	1222.50	ADONA	0.012	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	3.22	12016094.13	11238.45	5559.6	False	13C8-PFOA	725267.65	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	3.22	102104.22	10989.11	1734.4	False	13C8-PFOA	725267.65	1222.50	9CI-PF3ONS	0.008	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.81	9692708.07	10527.69	5478.0	False	13C8-PFOA	725267.65	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.81	41121.86	9583.94	1202.1	False	13C8-PFOA	725267.65	1222.50	11Cl-PF3OUdS	0.004	0.004	✓

Sample Name	LD79	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:13:13 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.56	9096982.61	24517.56	28966.9	False	13C3-PFBS	161096.90	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.56	2846356.74	24146.61	26617.8	False	13C3-PFBS	161096.90	1162.50	PFBS	0.313	0.325	✓
PFHxA_1	313.0 / 269.0	1.89	14792076.82	25070.07	4463.8	False	13C5-PFHxA	721981.62	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.89	1082640.37	24857.36	4448.6	False	13C5-PFHxA	721981.62	1250.00	PFHxA	0.073	0.077	✓
PFHpA_1	363.0 / 319.0	2.29	15120864.03	24719.89	6083.9	False	13C4-PFHpA	771527.24	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.29	287613.21	24982.66	2200.2	False	13C4-PFHpA	771527.24	1250.00	PFHpA	0.019	0.020	✓
PFHxS_1	399.0 / 80.0	2.31	12483034.06	25706.00	9802.8	True	13C3-PFHxS	142359.75	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	2.31	3338075.10	25081.24	3755.3	False	13C3-PFHxS	142359.75	1182.50	PFHxS	0.267	0.289	✓
PFOA_1	413.0 / 369.0	2.68	16515267.33	23720.98	3934.7	False	13C8-PFOA	804292.62	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.68	1117294.85	24396.65	3065.0	False	13C8-PFOA	804292.62	1222.50	PFOA	0.068	0.075	✓
PFNA_1	463.0 / 419.0	3.05	16215423.17	24506.84	3147.1	False	13C9-PFNA	784596.84	1250.00	PFNA			
PFNA_2	463.0 / 219.0	3.05	4860798.31	24777.09	3399.2	False	13C9-PFNA	784596.84	1250.00	PFNA	0.300	0.298	✓
PFOS_1	499.0 / 80.0	3.05	12990573.42	25115.87	3411.8	False	13C8-PFOS	137017.39	1195.00	PFOS			
PFOS_2	499.0 / 99.0	3.05	2306748.33	25233.93	3876.0	False	13C8-PFOS	137017.39	1195.00	PFOS	0.178	0.176	✓
PFDA_1	513.0 / 469.0	3.39	14588783.47	25057.72	2997.9	False	13C6-PFDA	657977.97	1250.00	PFDA			
PFDA_2	513.0 / 219.0	3.39	644595.92	25120.31	2881.6	False	13C6-PFDA	657977.97	1250.00	PFDA	0.044	0.042	✓
PFUnA_1	563.0 / 519.0	3.69	14984930.52	25315.58	3873.5	False	13C7-PFUnA	689933.33	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	786887.90	25578.79	3695.3	False	13C7-PFUnA	689933.33	1250.00	PFUnA	0.053	0.049	✓
PFDoA_1	613.0 / 569.0	3.96	15577495.62	24761.79	6222.4	False	13C2-PFDoA	783089.93	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.96	2507575.23	24989.54	6848.9	False	13C2-PFDoA	783089.93	1250.00	PFDoA	0.161	0.155	✓
PFTTrDA_1	663.0 / 619.0	4.20	14707186.99	24201.77	8187.5	False	13C2-PFTTeDA	964377.11	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	4.20	1042439.40	24702.62	5413.0	False	13C2-PFTTeDA	964377.11	1250.00	PFTTrDA	0.071	0.069	✓
PFTTeDA_1	713.0 / 669.0	4.41	18864764.38	24363.14	22711.5	False	13C2-PFTTeDA	964377.11	1250.00	PFTTeDA			
PFTTeDA_2	713.0 / 169.0	4.40	1060590.74	24716.32	15835.6	False	13C2-PFTTeDA	964377.11	1250.00	PFTTeDA	0.056	0.056	✓
NMeFOSAA_1	570.0 / 419.0	3.54	3118115.05	24947.88	4376.8	False	d3-MeFOSAA	171910.56	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.54	1999199.77	24920.04	3459.8	False	d3-MeFOSAA	171910.56	1250.00	NMeFOSAA	0.641	0.674	✓
NEtFOSAA_1	584.0 / 419.0	3.69	2823150.12	24952.71	4041.2	False	d5-EtFOSAA	134518.75	1250.00	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	175390.10	24876.37	13994.7	False	d5-EtFOSAA	134518.75	1250.00	NEtFOSAA	0.062	0.061	✓
HFPO-DA_1	285.0 / 169.0	1.99	10320853.13	24870.05	16148.1	False	13C3-HFPO-DA	486684.35	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	1.99	250503.79	24588.39	7428.8	False	13C3-HFPO-DA	486684.35	1250.00	HFPO-DA	0.024	0.026	✓
ADONA_1	377.0 / 251.0	2.32	30738702.58	23661.33	15396.2	False	13C8-PFOA	804292.62	1222.50	ADONA			
ADONA_2	377.0 / 85.0	2.31	396281.60	24235.91	22629.1	False	13C8-PFOA	804292.62	1222.50	ADONA	0.013	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	3.23	27990076.60	23667.36	4632.9	False	13C8-PFOA	804292.62	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	3.23	246561.12	24002.84	9277.3	False	13C8-PFOA	804292.62	1222.50	9CI-PF3ONS	0.009	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.82	24836467.17	24381.89	6751.5	False	13C8-PFOA	804292.62	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.82	119849.07	25177.72	3168.8	False	13C8-PFOA	804292.62	1222.50	11Cl-PF3OUdS	0.005	0.004	✓

Sample Name	LD74	Injection Vial	2
Sample ID	L1	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.95	768448.73	1222.19	4758.0	False	13C2-PFDA	731625.33	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.52	157270.69	1238.21	2145.7	False	13C4-PFOS	136773.35	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.68	161869.22	1242.65	2262.9	False	13C4-PFOS	136773.35	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.88	703937.54	1211.59	6075.6	False	13C2-PFOA	809261.13	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.27	810232.17	1252.57	6187.5	False	13C2-PFOA	809261.13	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.66	746712.04	1167.35	4041.6	False	13C2-PFOA	809261.13	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.03	786530.10	1249.47	1300227.6	False	13C2-PFOA	809261.13	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.37	770481.58	1283.86	4967.8	False	13C2-PFDA	731625.33	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.67	823357.04	1302.85	4355.3	False	13C2-PFDA	731625.33	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.39	897970.43	1208.66	14656.7	False	13C2-PFDA	731625.33	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.55	159053.72	1170.48	7235.9	False	13C4-PFOS	136773.35	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.29	159265.75	1220.15	12775.8	False	13C4-PFOS	136773.35	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.02	133471.99	1132.51	1235.3	False	13C4-PFOS	136773.35	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.99	470774.89	1237.70	3351.1	False	13C2-PFOA	809261.13	1250.00		N/A	N/A	✓

Sample Name	LD75	Injection Vial	3
Sample ID	L2	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:29:49 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.95	756714.57	1132.22	4980.0	False	13C2-PFDA	777702.63	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.53	153877.39	1181.49	1948.5	False	13C4-PFOS	140247.18	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.68	177295.92	1327.37	2149.7	False	13C4-PFOS	140247.18	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.88	715659.11	1312.32	5325.3	False	13C2-PFOA	759580.97	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.28	793737.63	1307.33	17730.6	False	13C2-PFOA	759580.97	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.66	791954.19	1319.06	28529.6	False	13C2-PFOA	759580.97	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.04	756601.31	1280.54	4022.1	False	13C2-PFOA	759580.97	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.38	787198.60	1234.00	5987.3	False	13C2-PFDA	777702.63	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.68	799768.32	1190.55	5456.1	False	13C2-PFDA	777702.63	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.39	899990.98	1139.61	18903.0	False	13C2-PFDA	777702.63	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.55	155488.57	1115.90	4435.7	False	13C4-PFOS	140247.18	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.29	144190.54	1077.30	5910.7	False	13C4-PFOS	140247.18	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.03	138625.20	1147.10	1418.2	False	13C4-PFOS	140247.18	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	2.00	454402.53	1272.79	3236.2	False	13C2-PFOA	759580.97	1250.00		N/A	N/A	✓

Sample Name	LD76	Injection Vial	4
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:40:39 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.95	797855.70	1117.49	6539.1	False	13C2-PFDA	830799.62	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.53	163138.87	1140.93	2347.7	False	13C4-PFOS	153973.84	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.68	172971.20	1179.54	2267.5	False	13C4-PFOS	153973.84	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.88	747633.81	1174.42	5036.8	False	13C2-PFOA	886696.16	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.27	842635.29	1188.90	6011.6	False	13C2-PFOA	886696.16	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.66	795445.44	1134.94	2122.3	False	13C2-PFOA	886696.16	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.03	780594.74	1131.75	5806.8	False	13C2-PFOA	886696.16	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.37	755566.33	1108.72	5218.5	False	13C2-PFDA	830799.62	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.67	799400.28	1113.95	4255.5	False	13C2-PFDA	830799.62	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.40	956693.34	1133.99	18461.8	False	13C2-PFDA	830799.62	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.55	162732.90	1063.78	4780.7	False	13C4-PFOS	153973.84	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.28	157916.94	1074.67	21654.8	False	13C4-PFOS	153973.84	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.02	149229.16	1124.76	1791.8	False	13C4-PFOS	153973.84	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.99	477510.02	1145.77	3464.8	False	13C2-PFOA	886696.16	1250.00		N/A	N/A	✓

Sample Name	LD77	Injection Vial	5
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:51:31 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.95	808360.70	1257.80	5345.1	True	13C2-PFDA	747837.34	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.53	147253.89	1146.41	1949.5	False	13C4-PFOS	138316.66	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.68	169530.49	1286.95	1659.1	False	13C4-PFOS	138316.66	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.88	731615.04	1268.78	6069.7	False	13C2-PFOA	803167.86	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.27	771431.33	1201.63	7085.2	False	13C2-PFOA	803167.86	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.66	736336.77	1159.86	6824.1	False	13C2-PFOA	803167.86	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.03	775080.62	1240.62	13662.9	False	13C2-PFOA	803167.86	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.37	759378.12	1237.93	13873.5	False	13C2-PFDA	747837.34	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.68	807480.43	1250.03	5779.0	False	13C2-PFDA	747837.34	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.40	902164.84	1187.98	18523.6	False	13C2-PFDA	747837.34	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.55	158198.02	1151.19	12300.5	False	13C4-PFOS	138316.66	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.29	166272.40	1259.62	6817.3	False	13C4-PFOS	138316.66	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.03	140795.95	1181.33	1333.8	False	13C4-PFOS	138316.66	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.99	456602.69	1209.54	4447.6	False	13C2-PFOA	803167.86	1250.00		N/A	N/A	✓

Sample Name	LD78	Injection Vial	6
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:02:22 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.95	732000.63	1356.71	4928.9	True	13C2-PFDA	627823.70	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.53	148072.69	1280.70	1896.1	False	13C4-PFOS	124502.05	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.68	150687.38	1270.83	1791.2	False	13C4-PFOS	124502.05	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.88	655866.04	1225.34	5592.1	False	13C2-PFOA	745533.86	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.27	771439.32	1294.54	5735.9	False	13C2-PFOA	745533.86	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.66	725267.65	1230.74	6116.8	False	13C2-PFOA	745533.86	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.03	745851.49	1286.13	4558.1	False	13C2-PFOA	745533.86	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.37	709716.45	1378.14	8336.9	False	13C2-PFDA	627823.70	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.67	754143.81	1390.63	4710.2	False	13C2-PFDA	627823.70	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.39	855038.13	1341.16	16227.7	False	13C2-PFDA	627823.70	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.55	140413.83	1135.16	7310.0	False	13C4-PFOS	124502.05	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.29	146372.94	1231.91	31279.4	False	13C4-PFOS	124502.05	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.02	136428.61	1271.69	1830.6	False	13C4-PFOS	124502.05	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.99	451274.23	1287.84	3742.8	False	13C2-PFOA	745533.86	1250.00		N/A	N/A	✓

Sample Name	LD79	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:13:13 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.96	775016.52	1413.58	6647.2	True	13C2-PFDA	637973.77	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.54	170127.04	1512.26	1555.1	False	13C4-PFOS	121142.16	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.69	137600.69	1192.65	1975.7	False	13C4-PFOS	121142.16	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.88	721981.62	1307.55	4879.0	False	13C2-PFOA	769089.45	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.27	771527.24	1255.03	71587.7	False	13C2-PFOA	769089.45	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.67	804292.62	1323.04	4400.7	False	13C2-PFOA	769089.45	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.04	784596.84	1311.50	6724.3	False	13C2-PFOA	769089.45	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.38	657977.97	1257.34	3607.2	False	13C2-PFDA	637973.77	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.68	689933.33	1251.99	4504.8	False	13C2-PFDA	637973.77	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.40	964377.11	1488.59	13153.6	False	13C2-PFDA	637973.77	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.55	161096.90	1338.49	27824.4	False	13C4-PFOS	121142.16	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.29	142359.75	1231.36	4465.7	False	13C4-PFOS	121142.16	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.03	137017.39	1312.61	1432.3	False	13C4-PFOS	121142.16	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.99	486684.35	1346.36	4229.3	False	13C2-PFOA	769089.45	1250.00		N/A	N/A	✓

Sample Name	LD81 ICC	Injection Vial	9
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:34:56 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.57	2372.01	2500.00	94.88
PFBS_2	298.9 / 99.0	1.57	2426.98	2500.00	97.08
PFHxA_1	313.0 / 269.0	1.89	2345.57	2525.00	92.89
PFHxA_2	313.0 / 119.0	1.89	2427.20	2525.00	96.13
PFHpA_1	363.0 / 319.0	2.29	2503.93	2500.00	100.16
PFHpA_2	363.0 / 169.0	2.29	2243.70	2500.00	89.75
PFHxS_1	399.0 / 80.0	2.31	2521.57	2525.00	99.86
PFHxS_2	399.0 / 99.0	2.31	2877.26	2525.00	113.95
PFOA_1	413.0 / 369.0	2.68	2414.67	2500.00	96.59
PFOA_2	413.0 / 169.0	2.68	2237.59	2500.00	89.50
PFNA_1	463.0 / 419.0	3.05	2750.82	2500.00	110.03
PFNA_2	463.0 / 219.0	3.06	2478.03	2500.00	99.12
PFOS_1	499.0 / 80.0	3.05	2668.97	2525.00	105.70
PFOS_2	499.0 / 99.0	3.05	3106.83	2525.00	123.04
PFDA_1	513.0 / 469.0	3.39	2455.17	2500.00	98.21
PFDA_2	513.0 / 219.0	3.39	2675.95	2500.00	107.04
PFUnA_1	563.0 / 519.0	3.69	2180.64	2500.00	87.23
PFUnA_2	563.0 / 269.0	3.69	1932.53	2500.00	77.30
PFDoA_1	613.0 / 569.0	3.96	2606.20	2500.00	104.25
PFDoA_2	613.0 / 319.0	3.96	2615.79	2500.00	104.63
PFTrDA_1	663.0 / 619.0	4.20	2637.84	2500.00	105.51
PFTrDA_2	663.0 / 169.0	4.20	2592.62	2500.00	103.70
PFTeDA_1	713.0 / 669.0	4.41	2727.42	2500.00	109.10
PFTeDA_2	713.0 / 169.0	4.40	2634.36	2500.00	105.37
NMeFOSAA_1	570.0 / 419.0	3.54	2308.66	2500.00	92.35
NMeFOSAA_2	570.0 / 512.0	3.54	2239.26	2500.00	89.57
NEtFOSAA_1	584.0 / 419.0	3.69	2405.56	2500.00	96.22
NEtFOSAA_2	584.0 / 483.0	3.69	2137.42	2500.00	85.50
HFPO-DA_1	285.0 / 169.0	2.00	2608.14	2500.00	104.33
HFPO-DA_2	285.0 / 118.8	2.00	2576.26	2500.00	103.05
ADONA_1	377.0 / 251.0	2.32	2548.64	2500.00	101.95
ADONA_2	377.0 / 85.0	2.32	2475.14	2500.00	99.01
9Cl-PF3ONS_1	531.0 / 351.0	3.23	2474.94	2500.00	99.00
9Cl-PF3ONS_2	531.0 / 83.0	3.23	2846.29	2500.00	113.85
11Cl-pf3OUdS_1	631.0 / 451.0	3.82	2485.46	2500.00	99.42
11Cl-pf3OUdS_2	631.0 / 83.0	3.81	2681.20	2500.00	107.25

Sample Name	LD76 CCV	Injection Vial	2
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 9:32:55 AM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.57	946.80	1000.00	94.68
PFBS_2	298.9 / 99.0	1.57	930.30	1000.00	93.03
PFHxA_1	313.0 / 269.0	1.90	902.67	1010.00	89.37
PFHxA_2	313.0 / 119.0	1.90	836.21	1010.00	82.79
PFHpA_1	363.0 / 319.0	2.29	932.85	1000.00	93.28
PFHpA_2	363.0 / 169.0	2.29	850.64	1000.00	85.06
PFHxS_1	399.0 / 80.0	2.31	913.22	1010.00	90.42
PFHxS_2	399.0 / 99.0	2.31	1086.46	1010.00	107.57
PFOA_1	413.0 / 369.0	2.68	938.71	1000.00	93.87
PFOA_2	413.0 / 169.0	2.68	897.85	1000.00	89.78
PFNA_1	463.0 / 419.0	3.05	958.96	1000.00	95.90
PFNA_2	463.0 / 219.0	3.05	928.51	1000.00	92.85
PFOS_1	499.0 / 80.0	3.05	919.46	1010.00	91.04
PFOS_2	499.0 / 99.0	3.05	964.42	1010.00	95.49
PFDA_1	513.0 / 469.0	3.39	1034.78	1000.00	103.48
PFDA_2	513.0 / 219.0	3.39	940.60	1000.00	94.06
PFUnA_1	563.0 / 519.0	3.69	856.16	1000.00	85.62
PFUnA_2	563.0 / 269.0	3.69	918.09	1000.00	91.81
PFDoA_1	613.0 / 569.0	3.96	982.99	1000.00	98.30
PFDoA_2	613.0 / 319.0	3.96	924.41	1000.00	92.44
PFTrDA_1	663.0 / 619.0	4.20	898.11	1000.00	89.81
PFTrDA_2	663.0 / 169.0	4.20	857.77	1000.00	85.78
PFTeDA_1	713.0 / 669.0	4.40	938.10	1000.00	93.81
PFTeDA_2	713.0 / 169.0	4.40	930.15	1000.00	93.01
NMeFOSAA_1	570.0 / 419.0	3.54	964.05	1000.00	96.40
NMeFOSAA_2	570.0 / 512.0	3.54	897.17	1000.00	89.72
NEtFOSAA_1	584.0 / 419.0	3.69	960.49	1000.00	96.05
NEtFOSAA_2	584.0 / 483.0	3.69	982.15	1000.00	98.21
HFPO-DA_1	285.0 / 169.0	2.00	963.92	1000.00	96.39
HFPO-DA_2	285.0 / 118.8	2.00	1029.47	1000.00	102.95
ADONA_1	377.0 / 251.0	2.32	907.96	1000.00	90.80
ADONA_2	377.0 / 85.0	2.32	635.09	1000.00	63.51
9Cl-PF3ONS_1	531.0 / 351.0	3.23	866.21	1000.00	86.62
9Cl-PF3ONS_2	531.0 / 83.0	3.24	1107.23	1000.00	110.72
11Cl-pf3OUdS_1	631.0 / 451.0	3.81	934.92	1000.00	93.49
11Cl-pf3OUdS_2	631.0 / 83.0	3.81	1011.05	1000.00	101.11

Sample Name	LD78 CCV	Injection Vial	21
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 1:22:15 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.57	9967.42	10000.00	99.67
PFBS_2	298.9 / 99.0	1.57	10359.01	10000.00	103.59
PFHxA_1	313.0 / 269.0	1.90	10691.22	10100.00	105.85
PFHxA_2	313.0 / 119.0	1.90	10310.40	10100.00	102.08
PFHpA_1	363.0 / 319.0	2.29	10109.36	10000.00	101.09
PFHpA_2	363.0 / 169.0	2.29	9912.70	10000.00	99.13
PFHxS_1	399.0 / 80.0	2.31	9626.89	10100.00	95.32
PFHxS_2	399.0 / 99.0	2.31	10147.81	10100.00	100.47
PFOA_1	413.0 / 369.0	2.68	10734.44	10000.00	107.34
PFOA_2	413.0 / 169.0	2.68	10532.17	10000.00	105.32
PFNA_1	463.0 / 419.0	3.05	10888.27	10000.00	108.88
PFNA_2	463.0 / 219.0	3.05	10006.99	10000.00	100.07
PFOS_1	499.0 / 80.0	3.05	11689.10	10100.00	115.73
PFOS_2	499.0 / 99.0	3.05	11811.36	10100.00	116.94
PFDA_1	513.0 / 469.0	3.39	10114.81	10000.00	101.15
PFDA_2	513.0 / 219.0	3.39	9040.04	10000.00	90.40
PFUnA_1	563.0 / 519.0	3.69	9761.72	10000.00	97.62
PFUnA_2	563.0 / 269.0	3.69	9267.91	10000.00	92.68
PFDoA_1	613.0 / 569.0	3.96	10678.91	10000.00	106.79
PFDoA_2	613.0 / 319.0	3.96	10242.25	10000.00	102.42
PFTrDA_1	663.0 / 619.0	4.19	10406.22	10000.00	104.06
PFTrDA_2	663.0 / 169.0	4.19	10194.64	10000.00	101.95
PFTeDA_1	713.0 / 669.0	4.40	10636.94	10000.00	106.37
PFTeDA_2	713.0 / 169.0	4.40	10521.48	10000.00	105.21
NMeFOSAA_1	570.0 / 419.0	3.54	9716.37	10000.00	97.16
NMeFOSAA_2	570.0 / 512.0	3.54	9655.51	10000.00	96.56
NEtFOSAA_1	584.0 / 419.0	3.69	10075.35	10000.00	100.75
NEtFOSAA_2	584.0 / 483.0	3.69	9235.95	10000.00	92.36
HFPO-DA_1	285.0 / 169.0	2.00	10373.35	10000.00	103.73
HFPO-DA_2	285.0 / 118.8	2.00	10420.77	10000.00	104.21
ADONA_1	377.0 / 251.0	2.32	10703.65	10000.00	107.04
ADONA_2	377.0 / 85.0	2.32	10990.36	10000.00	109.90
9Cl-PF3ONS_1	531.0 / 351.0	3.23	11328.84	10000.00	113.29
9Cl-PF3ONS_2	531.0 / 83.0	3.23	10873.36	10000.00	108.73
11Cl-pf3OUdS_1	631.0 / 451.0	3.81	11251.46	10000.00	112.51
11Cl-pf3OUdS_2	631.0 / 83.0	3.81	11113.17	10000.00	111.13

Sample Name	LD77 CCV	Injection Vial	30
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 3:00:38 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
PFBS_1	298.9 / 80.0	1.58	2358.33	2500.00	94.33
PFBS_2	298.9 / 99.0	1.58	2375.05	2500.00	95.00
PFHxA_1	313.0 / 269.0	1.91	2377.97	2525.00	94.18
PFHxA_2	313.0 / 119.0	1.91	2391.34	2525.00	94.71
PFHpA_1	363.0 / 319.0	2.30	2255.18	2500.00	90.21
PFHpA_2	363.0 / 169.0	2.30	2214.68	2500.00	88.59
PFHxS_1	399.0 / 80.0	2.32	2661.57	2525.00	105.41
PFHxS_2	399.0 / 99.0	2.32	2810.81	2525.00	111.32
PFOA_1	413.0 / 369.0	2.69	2402.61	2500.00	96.10
PFOA_2	413.0 / 169.0	2.70	2366.34	2500.00	94.65
PFNA_1	463.0 / 419.0	3.07	2773.47	2500.00	110.94
PFNA_2	463.0 / 219.0	3.07	2668.88	2500.00	106.76
PFOS_1	499.0 / 80.0	3.06	2561.57	2525.00	101.45
PFOS_2	499.0 / 99.0	3.06	2697.83	2525.00	106.84
PFDA_1	513.0 / 469.0	3.40	2466.82	2500.00	98.67
PFDA_2	513.0 / 219.0	3.40	2204.35	2500.00	88.17
PFUnA_1	563.0 / 519.0	3.70	2327.75	2500.00	93.11
PFUnA_2	563.0 / 269.0	3.70	2468.40	2500.00	98.74
PFDoA_1	613.0 / 569.0	3.97	2531.91	2500.00	101.28
PFDoA_2	613.0 / 319.0	3.97	2497.01	2500.00	99.88
PFTrDA_1	663.0 / 619.0	4.21	2561.68	2500.00	102.47
PFTrDA_2	663.0 / 169.0	4.21	2358.21	2500.00	94.33
PFTeDA_1	713.0 / 669.0	4.42	2604.74	2500.00	104.19
PFTeDA_2	713.0 / 169.0	4.41	2552.84	2500.00	102.11
NMeFOSAA_1	570.0 / 419.0	3.55	2432.54	2500.00	97.30
NMeFOSAA_2	570.0 / 512.0	3.55	2157.61	2500.00	86.30
NEtFOSAA_1	584.0 / 419.0	3.70	2696.15	2500.00	107.85
NEtFOSAA_2	584.0 / 483.0	3.71	2385.02	2500.00	95.40
HFPO-DA_1	285.0 / 169.0	2.01	2442.80	2500.00	97.71
HFPO-DA_2	285.0 / 118.8	2.01	2487.43	2500.00	99.50
ADONA_1	377.0 / 251.0	2.33	2442.73	2500.00	97.71
ADONA_2	377.0 / 85.0	2.33	2587.13	2500.00	103.49
9Cl-PF3ONS_1	531.0 / 351.0	3.24	2397.78	2500.00	95.91
9Cl-PF3ONS_2	531.0 / 83.0	3.24	2234.30	2500.00	89.37
11Cl-pf3OUdS_1	631.0 / 451.0	3.83	2484.95	2500.00	99.40
11Cl-pf3OUdS_2	631.0 / 83.0	3.83	2405.57	2500.00	96.22

Sample Name	LD81 ICC	Injection Vial	9
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:34:56 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
13C2-PFDoA	615.0 / 570.0	3.96	1207.13	1250.00	96.57
d3-MeFOSAA	573.0 / 419.0	3.53	1365.87	1250.00	109.27
d5-EtFOSAA	589.0 / 419.0	3.69	1453.49	1250.00	116.28
13C5-PFHxA	318.0 / 273.0	1.88	1303.78	1250.00	104.30
13C4-PFHpA	367.0 / 322.0	2.28	1241.89	1250.00	99.35
13C8-PFOA	421.0 / 376.0	2.67	1340.35	1222.50	109.64
13C9-PFNA	472.0 / 427.0	3.04	1307.82	1250.00	104.63
13C6-PFDA	519.0 / 474.0	3.38	1245.40	1250.00	99.63
13C7-PFUnA	570.0 / 525.0	3.68	1274.69	1250.00	101.98
13C2-PFTeDA	715.0 / 670.0	4.40	1146.14	1250.00	91.69
13C3-PFBS	302.0 / 99.0	1.56	1280.23	1162.50	110.13
13C3-PFHxS	402.0 / 99.0	2.30	1295.53	1182.50	109.56
13C8-PFOS	507.0 / 99.0	3.03	1170.75	1195.00	97.97
13C3-HFPO-DA	287.0 / 169.0	2.00	1256.93	1250.00	100.55

Sample Name	LD76 CCV	Injection Vial	2
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 9:32:55 AM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
13C2-PFDoA	615.0 / 570.0	3.95	1136.35	1250.00	90.91
d3-MeFOSAA	573.0 / 419.0	3.53	1273.32	1250.00	101.87
d5-EtFOSAA	589.0 / 419.0	3.68	1298.06	1250.00	103.84
13C5-PFHxA	318.0 / 273.0	1.89	1300.30	1250.00	104.02
13C4-PFHpA	367.0 / 322.0	2.28	1258.56	1250.00	100.68
13C8-PFOA	421.0 / 376.0	2.67	1292.65	1222.50	105.74
13C9-PFNA	472.0 / 427.0	3.04	1311.82	1250.00	104.95
13C6-PFDA	519.0 / 474.0	3.38	1127.67	1250.00	90.21
13C7-PFUnA	570.0 / 525.0	3.68	1325.21	1250.00	106.02
13C2-PFTeDA	715.0 / 670.0	4.40	1201.57	1250.00	96.13
13C3-PFBS	302.0 / 99.0	1.56	1223.62	1162.50	105.26
13C3-PFHxS	402.0 / 99.0	2.30	1217.98	1182.50	103.00
13C8-PFOS	507.0 / 99.0	3.03	1325.25	1195.00	110.90
13C3-HFPO-DA	287.0 / 169.0	2.00	1203.48	1250.00	96.28

Sample Name	LD78 CCV	Injection Vial	21
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 1:22:15 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
13C2-PFDoA	615.0 / 570.0	3.95	1311.61	1250.00	104.93
d3-MeFOSAA	573.0 / 419.0	3.53	1182.10	1250.00	94.57
d5-EtFOSAA	589.0 / 419.0	3.68	1130.60	1250.00	90.45
13C5-PFHxA	318.0 / 273.0	1.89	1264.59	1250.00	101.17
13C4-PFHpA	367.0 / 322.0	2.28	1253.45	1250.00	100.28
13C8-PFOA	421.0 / 376.0	2.67	1226.35	1222.50	100.31
13C9-PFNA	472.0 / 427.0	3.04	1270.51	1250.00	101.64
13C6-PFDA	519.0 / 474.0	3.38	1379.46	1250.00	110.36
13C7-PFUnA	570.0 / 525.0	3.68	1332.30	1250.00	106.58
13C2-PFTeDA	715.0 / 670.0	4.40	1320.18	1250.00	105.61
13C3-PFBS	302.0 / 99.0	1.56	1149.27	1162.50	98.86
13C3-PFHxS	402.0 / 99.0	2.30	1203.19	1182.50	101.75
13C8-PFOS	507.0 / 99.0	3.03	1081.73	1195.00	90.52
13C3-HFPO-DA	287.0 / 169.0	2.00	1236.67	1250.00	98.93

Sample Name	LD77 CCV	Injection Vial	30
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 3:00:38 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS
Sample Comment			

Results Summary

Analyte	MRM Transition	RT	Conc. (ng/L)	Target Conc. (ng/L)	Recovery (%)
13C2-PFDoA	615.0 / 570.0	3.97	1143.31	1250.00	91.46
d3-MeFOSAA	573.0 / 419.0	3.55	1230.02	1250.00	98.40
d5-EtFOSAA	589.0 / 419.0	3.69	1269.71	1250.00	101.58
13C5-PFHxA	318.0 / 273.0	1.90	1259.64	1250.00	100.77
13C4-PFHpA	367.0 / 322.0	2.29	1275.59	1250.00	102.05
13C8-PFOA	421.0 / 376.0	2.68	1239.90	1222.50	101.42
13C9-PFNA	472.0 / 427.0	3.05	1139.87	1250.00	91.19
13C6-PFDA	519.0 / 474.0	3.39	1233.06	1250.00	98.64
13C7-PFUnA	570.0 / 525.0	3.69	1245.84	1250.00	99.67
13C2-PFTeDA	715.0 / 670.0	4.41	1200.05	1250.00	96.00
13C3-PFBS	302.0 / 99.0	1.57	1209.78	1162.50	104.07
13C3-PFHxS	402.0 / 99.0	2.31	1123.88	1182.50	95.04
13C8-PFOS	507.0 / 99.0	3.05	1159.15	1195.00	97.00
13C3-HFPO-DA	287.0 / 169.0	2.01	1210.55	1250.00	96.84

Sample Name	LD81 ICC	Injection Vial	9
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:34:56 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.57	843021.12	2372.01	10627.6	False	13C3-PFBS	155357.23	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.57	275853.07	2426.98	7742.4	False	13C3-PFBS	155357.23	1162.50	PFBS	0.327	0.325	✓
PFHxA_1	313.0 / 269.0	1.89	1337333.06	2345.57	1304.0	False	13C5-PFHxA	698501.24	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.89	103417.22	2427.20	1052.5	False	13C5-PFHxA	698501.24	1250.00	PFHxA	0.077	0.077	✓
PFHpA_1	363.0 / 319.0	2.29	1479332.06	2503.93	1442.4	False	13C4-PFHpA	740750.91	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.29	25254.58	2243.70	766.9	False	13C4-PFHpA	740750.91	1250.00	PFHpA	0.017	0.020	✓
PFHxS_1	399.0 / 80.0	2.31	1295834.37	2521.57	2789.3	False	13C3-PFHxS	151014.34	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	2.31	410793.23	2877.26	2613.3	False	13C3-PFHxS	151014.34	1182.50	PFHxS	0.317	0.289	✓
PFOA_1	413.0 / 369.0	2.68	1681637.78	2414.67	1324.4	False	13C8-PFOA	790591.24	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.68	107701.64	2237.59	621.7	False	13C8-PFOA	790591.24	1222.50	PFOA	0.064	0.075	✓
PFNA_1	463.0 / 419.0	3.05	1768510.56	2750.82	1631.2	False	13C9-PFNA	759139.22	1250.00	PFNA			
PFNA_2	463.0 / 219.0	3.06	473453.12	2478.03	2641.2	False	13C9-PFNA	759139.22	1250.00	PFNA	0.268	0.298	✓
PFOS_1	499.0 / 80.0	3.05	1260732.25	2668.97	1044.1	False	13C8-PFOS	123218.28	1195.00	PFOS			
PFOS_2	499.0 / 99.0	3.05	258359.40	3106.83	1613.4	False	13C8-PFOS	123218.28	1195.00	PFOS	0.205	0.176	✓
PFDA_1	513.0 / 469.0	3.39	1664155.80	2455.17	1745.5	False	13C6-PFDA	754442.61	1250.00	PFDA			
PFDA_2	513.0 / 219.0	3.39	78487.97	2675.95	1721.8	False	13C6-PFDA	754442.61	1250.00	PFDA	0.047	0.042	✓
PFUnA_1	563.0 / 519.0	3.69	1512089.92	2180.64	2014.8	False	13C7-PFUnA	813151.24	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	67814.74	1932.53	1463.3	False	13C7-PFUnA	813151.24	1250.00	PFUnA	0.045	0.049	✓
PFDoA_1	613.0 / 569.0	3.96	1612878.95	2606.20	3079.5	False	13C2-PFDoA	766128.53	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.96	256035.24	2615.79	3159.2	False	13C2-PFDoA	766128.53	1250.00	PFDoA	0.159	0.155	✓
PFTTrDA_1	663.0 / 619.0	4.20	1445114.56	2637.84	5036.3	False	13C2-PFTeDA	859545.05	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	4.20	98611.74	2592.62	1833.6	False	13C2-PFTeDA	859545.05	1250.00	PFTTrDA	0.068	0.069	✓
PFTeDA_1	713.0 / 669.0	4.41	1910858.95	2727.42	10404.7	False	13C2-PFTeDA	859545.05	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.40	102686.20	2634.36	4858.2	False	13C2-PFTeDA	859545.05	1250.00	PFTeDA	0.054	0.056	✓
NMeFOSAA_1	570.0 / 419.0	3.54	297264.71	2308.66	83771.9	False	d3-MeFOSAA	155618.59	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.54	196779.75	2239.26	2360.2	False	d3-MeFOSAA	155618.59	1250.00	NMeFOSAA	0.662	0.674	✓
NEtFOSAA_1	584.0 / 419.0	3.69	308085.63	2405.56	3354.3	False	d5-EtFOSAA	169818.14	1250.00	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	17872.62	2137.42	173066.3	False	d5-EtFOSAA	169818.14	1250.00	NEtFOSAA	0.058	0.061	✓
HFPO-DA_1	285.0 / 169.0	2.00	983932.87	2608.14	5316.9	False	13C3-HFPO-DA	440852.75	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	2.00	24364.33	2576.26	3846.4	False	13C3-HFPO-DA	440852.75	1250.00	HFPO-DA	0.025	0.026	✓
ADONA_1	377.0 / 251.0	2.32	3325101.88	2548.64	7129.8	False	13C8-PFOA	790591.24	1222.50	ADONA			
ADONA_2	377.0 / 85.0	2.32	41848.27	2475.14	78460.3	False	13C8-PFOA	790591.24	1222.50	ADONA	0.013	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	3.23	2934553.31	2474.94	3898.0	False	13C8-PFOA	790591.24	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	3.23	29294.90	2846.29	1973.0	False	13C8-PFOA	790591.24	1222.50	9CI-PF3ONS	0.010	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.82	2527286.88	2485.46	4131.4	False	13C8-PFOA	790591.24	1222.50	11Cl-pf3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.81	12519.50	2681.20	933.4	False	13C8-PFOA	790591.24	1222.50	11Cl-pf3OUdS	0.005	0.004	✓

Sample Name	LD76 CCV	Injection Vial	2
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 9:32:55 AM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.57	304084.62	946.80	4792.1	False	13C3-PFBS	142001.87	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.57	96622.15	930.30	2673.8	False	13C3-PFBS	142001.87	1162.50	PFBS	0.318	0.325	✓
PFHxA_1	313.0 / 269.0	1.90	501705.33	902.67	769.3	False	13C5-PFHxA	682371.06	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.90	35615.76	836.21	480.5	False	13C5-PFHxA	682371.06	1250.00	PFHxA	0.071	0.077	✓
PFHpA_1	363.0 / 319.0	2.29	553188.20	932.85	930.2	False	13C4-PFHpA	735320.62	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.29	9812.09	850.64	260.6	False	13C4-PFHpA	735320.62	1250.00	PFHpA	0.018	0.020	✓
PFHxS_1	399.0 / 80.0	2.31	419973.02	913.22	2658.4	False	13C3-PFHxS	135774.19	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	2.31	142355.74	1086.46	2725.3	False	13C3-PFHxS	135774.19	1182.50	PFHxS	0.339	0.289	✓
PFOA_1	413.0 / 369.0	2.68	636279.34	938.71	854.5	False	13C8-PFOA	746844.01	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.68	45166.57	897.85	420.7	False	13C8-PFOA	746844.01	1222.50	PFOA	0.071	0.075	✓
PFNA_1	463.0 / 419.0	3.05	611100.16	958.96	699.1	False	13C9-PFNA	745862.71	1250.00	PFNA			
PFNA_2	463.0 / 219.0	3.05	176404.18	928.51	1174.8	False	13C9-PFNA	745862.71	1250.00	PFNA	0.289	0.298	✓
PFOS_1	499.0 / 80.0	3.05	485492.16	919.46	1033.6	False	13C8-PFOS	133387.63	1195.00	PFOS			
PFOS_2	499.0 / 99.0	3.05	89331.54	964.42	1505.0	False	13C8-PFOS	133387.63	1195.00	PFOS	0.184	0.176	✓
PFDA_1	513.0 / 469.0	3.39	627333.27	1034.78	1245.3	False	13C6-PFDA	659594.66	1250.00	PFDA			
PFDA_2	513.0 / 219.0	3.39	23964.83	940.60	4017.1	False	13C6-PFDA	659594.66	1250.00	PFDA	0.038	0.042	✓
PFUnA_1	563.0 / 519.0	3.69	589797.77	856.16	1215.5	False	13C7-PFUnA	816263.55	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	31055.62	918.09	807.2	False	13C7-PFUnA	816263.55	1250.00	PFUnA	0.053	0.049	✓
PFDoA_1	613.0 / 569.0	3.96	558538.93	982.99	2353.5	False	13C2-PFDoA	696371.16	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.96	81743.83	924.41	2493.6	False	13C2-PFDoA	696371.16	1250.00	PFDoA	0.146	0.155	✓
PFTTrDA_1	663.0 / 619.0	4.20	510320.07	898.11	2169.9	False	13C2-PFTTeDA	870083.06	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	4.20	33856.28	857.77	1096.1	False	13C2-PFTTeDA	870083.06	1250.00	PFTTrDA	0.066	0.069	✓
PFTTeDA_1	713.0 / 669.0	4.40	686641.58	938.10	4968.0	False	13C2-PFTTeDA	870083.06	1250.00	PFTTeDA			
PFTTeDA_2	713.0 / 169.0	4.40	38117.58	930.15	4087.9	False	13C2-PFTTeDA	870083.06	1250.00	PFTTeDA	0.056	0.056	✓
NMeFOSAA_1	570.0 / 419.0	3.54	110220.72	964.05	1018.0	False	d3-MeFOSAA	138331.79	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.54	70150.46	897.17	22709.1	False	d3-MeFOSAA	138331.79	1250.00	NMeFOSAA	0.636	0.674	✓
NEtFOSAA_1	584.0 / 419.0	3.69	105905.67	960.49	7816.5	False	d5-EtFOSAA	143921.17	1250.00	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	6791.28	982.15	39763.6	False	d5-EtFOSAA	143921.17	1250.00	NEtFOSAA	0.064	0.061	✓
HFPO-DA_1	285.0 / 169.0	2.00	343362.21	963.92	3157.9	False	13C3-HFPO-DA	413459.58	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	2.00	9501.65	1029.47	23362.5	False	13C3-HFPO-DA	413459.58	1250.00	HFPO-DA	0.028	0.026	✓
ADONA_1	377.0 / 251.0	2.32	1167104.40	907.96	3243.7	False	13C8-PFOA	746844.01	1222.50	ADONA			
ADONA_2	377.0 / 85.0	2.32	11760.02	635.09	3130.2	False	13C8-PFOA	746844.01	1222.50	ADONA	0.010	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	3.23	1009624.67	866.21	2129.4	False	13C8-PFOA	746844.01	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	3.24	11128.99	1107.23	4734.8	False	13C8-PFOA	746844.01	1222.50	9CI-PF3ONS	0.011	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.81	923396.81	934.92	3642.2	False	13C8-PFOA	746844.01	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.81	4442.66	1011.05	3281.0	False	13C8-PFOA	746844.01	1222.50	11Cl-PF3OUdS	0.005	0.004	✓

Sample Name	LD78 CCV	Injection Vial	21
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 1:22:15 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.57	3288857.90	9967.42	32272.5	False	13C3-PFBS	143412.94	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.57	1087033.35	10359.01	16580.6	False	13C3-PFBS	143412.94	1162.50	PFBS	0.331	0.325	✓
PFHxA_1	313.0 / 269.0	1.90	5621631.75	10691.22	3522.2	False	13C5-PFHxA	643517.18	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.90	400938.36	10310.40	2547.4	False	13C5-PFHxA	643517.18	1250.00	PFHxA	0.071	0.077	✓
PFHpA_1	363.0 / 319.0	2.29	5697331.52	10109.36	2798.6	False	13C4-PFHpA	710142.62	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.29	105329.12	9912.70	2894.7	False	13C4-PFHpA	710142.62	1250.00	PFHpA	0.018	0.020	✓
PFHxS_1	399.0 / 80.0	2.31	4734001.02	9626.89	8052.4	False	13C3-PFHxS	144222.17	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	2.31	1371185.25	10147.81	3747.8	False	13C3-PFHxS	144222.17	1182.50	PFHxS	0.290	0.289	✓
PFOA_1	413.0 / 369.0	2.68	6399721.31	10734.44	2523.6	False	13C8-PFOA	687060.91	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.68	415828.40	10532.17	1605.8	False	13C8-PFOA	687060.91	1222.50	PFOA	0.065	0.075	✓
PFNA_1	463.0 / 419.0	3.05	6436370.70	10888.27	2446.4	False	13C9-PFNA	700483.63	1250.00	PFNA			
PFNA_2	463.0 / 219.0	3.05	1754604.11	10006.99	2958.7	False	13C9-PFNA	700483.63	1250.00	PFNA	0.273	0.298	✓
PFOS_1	499.0 / 80.0	3.05	5176779.67	11689.10	2779.8	False	13C8-PFOS	117072.00	1195.00	PFOS			
PFOS_2	499.0 / 99.0	3.05	924257.28	11811.36	4261.7	False	13C8-PFOS	117072.00	1195.00	PFOS	0.179	0.176	✓
PFDA_1	513.0 / 469.0	3.39	6275730.94	10114.81	2988.7	False	13C6-PFDA	699473.71	1250.00	PFDA			
PFDA_2	513.0 / 219.0	3.39	246437.18	9040.04	3867.9	False	13C6-PFDA	699473.71	1250.00	PFDA	0.039	0.042	✓
PFUnA_1	563.0 / 519.0	3.69	5952575.87	9761.72	3070.0	False	13C7-PFUnA	711400.06	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.69	292622.29	9267.91	3015.4	False	13C7-PFUnA	711400.06	1250.00	PFUnA	0.049	0.049	✓
PFDoA_1	613.0 / 569.0	3.96	5982722.99	10678.91	4383.2	False	13C2-PFDoA	696782.12	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.96	914028.21	10242.25	7148.9	False	13C2-PFDoA	696782.12	1250.00	PFDoA	0.153	0.155	✓
PFTTrDA_1	663.0 / 619.0	4.19	5444334.20	10406.22	5412.4	False	13C2-PFTeDA	828723.78	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	4.19	370388.44	10194.64	4956.8	False	13C2-PFTeDA	828723.78	1250.00	PFTTrDA	0.068	0.069	✓
PFTeDA_1	713.0 / 669.0	4.40	7095250.17	10636.94	18655.0	False	13C2-PFTeDA	828723.78	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.40	389172.66	10521.48	10213.7	False	13C2-PFTeDA	828723.78	1250.00	PFTeDA	0.055	0.056	✓
NMeFOSAA_1	570.0 / 419.0	3.54	1083086.09	9716.37	4056.7	False	d3-MeFOSAA	139869.97	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.54	721655.94	9655.51	2896.3	False	d3-MeFOSAA	139869.97	1250.00	NMeFOSAA	0.666	0.674	✓
NEtFOSAA_1	584.0 / 419.0	3.69	1051349.61	10075.35	3579.8	False	d5-EtFOSAA	134083.70	1250.00	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.69	62751.72	9235.95	1926.7	False	d5-EtFOSAA	134083.70	1250.00	NEtFOSAA	0.060	0.061	✓
HFPO-DA_1	285.0 / 169.0	2.00	3646257.67	10373.35	10010.8	False	13C3-HFPO-DA	411986.34	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	2.00	90225.40	10420.77	17869.4	False	13C3-HFPO-DA	411986.34	1250.00	HFPO-DA	0.025	0.026	✓
ADONA_1	377.0 / 251.0	2.32	11916065.54	10703.65	9095.5	False	13C8-PFOA	687060.91	1222.50	ADONA			
ADONA_2	377.0 / 85.0	2.32	154603.51	10990.36	261018.9	False	13C8-PFOA	687060.91	1222.50	ADONA	0.013	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	3.23	11474197.33	11328.84	5803.7	False	13C8-PFOA	687060.91	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	3.23	95712.35	10873.36	9675.4	False	13C8-PFOA	687060.91	1222.50	9CI-PF3ONS	0.008	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.81	9810793.45	11251.46	7591.9	False	13C8-PFOA	687060.91	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.81	45175.40	11113.17	6912.7	False	13C8-PFOA	687060.91	1222.50	11Cl-PF3OUdS	0.005	0.004	✓

Sample Name	LD77 CCV	Injection Vial	30
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 3:00:38 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.58	849908.12	2358.33	8861.1	False	13C3-PFBS	157541.57	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.58	273745.39	2375.05	5853.2	False	13C3-PFBS	157541.57	1162.50	PFBS	0.322	0.325	✓
PFHxA_1	313.0 / 269.0	1.91	1404465.58	2377.97	1098.5	False	13C5-PFHxA	723559.48	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.91	105564.00	2391.34	1063.5	False	13C5-PFHxA	723559.48	1250.00	PFHxA	0.075	0.077	✓
PFHpA_1	363.0 / 319.0	2.30	1468368.84	2255.18	1390.2	False	13C4-PFHpA	815768.80	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.30	27459.51	2214.68	703.8	False	13C4-PFHpA	815768.80	1250.00	PFHpA	0.019	0.020	✓
PFHxS_1	399.0 / 80.0	2.32	1273499.04	2661.57	2717.9	False	13C3-PFHxS	140584.94	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	2.32	373701.90	2810.81	2431.0	False	13C3-PFHxS	140584.94	1182.50	PFHxS	0.293	0.289	✓
PFOA_1	413.0 / 369.0	2.69	1659717.00	2402.61	1430.8	False	13C8-PFOA	784127.53	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.70	112529.77	2366.34	887.1	False	13C8-PFOA	784127.53	1222.50	PFOA	0.068	0.075	✓
PFNA_1	463.0 / 419.0	3.07	1666197.10	2773.47	1623.8	False	13C9-PFNA	709405.28	1250.00	PFNA			
PFNA_2	463.0 / 219.0	3.07	476264.90	2668.88	2997.9	False	13C9-PFNA	709405.28	1250.00	PFNA	0.286	0.298	✓
PFOS_1	499.0 / 80.0	3.06	1286527.70	2561.57	1517.7	False	13C8-PFOS	130917.45	1195.00	PFOS			
PFOS_2	499.0 / 99.0	3.06	238836.57	2697.83	9950.7	False	13C8-PFOS	130917.45	1195.00	PFOS	0.186	0.176	✓
PFDA_1	513.0 / 469.0	3.40	1687597.88	2466.82	1393.2	False	13C6-PFDA	761516.18	1250.00	PFDA			
PFDA_2	513.0 / 219.0	3.40	65212.91	2204.35	2745.6	False	13C6-PFDA	761516.18	1250.00	PFDA	0.039	0.042	✓
PFUnA_1	563.0 / 519.0	3.70	1608963.56	2327.75	2743.6	False	13C7-PFUnA	810225.28	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	86980.86	2468.40	2728.9	False	13C7-PFUnA	810225.28	1250.00	PFUnA	0.054	0.049	✓
PFDoA_1	613.0 / 569.0	3.97	1513244.30	2531.91	2723.0	False	13C2-PFDoA	739760.50	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.97	235959.72	2497.01	3766.7	False	13C2-PFDoA	739760.50	1250.00	PFDoA	0.156	0.155	✓
PFTTrDA_1	663.0 / 619.0	4.21	1498589.70	2561.68	5471.0	False	13C2-PFTTeDA	917505.46	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	4.21	95862.65	2358.21	2860.4	False	13C2-PFTTeDA	917505.46	1250.00	PFTTrDA	0.064	0.069	✓
PFTTeDA_1	713.0 / 669.0	4.42	1949508.41	2604.74	9826.4	False	13C2-PFTTeDA	917505.46	1250.00	PFTTeDA			
PFTTeDA_2	713.0 / 169.0	4.41	106289.72	2552.84	7266.1	False	13C2-PFTTeDA	917505.46	1250.00	PFTTeDA	0.055	0.056	✓
NMeFOSAA_1	570.0 / 419.0	3.55	306942.14	2432.54	15195.4	False	d3-MeFOSAA	152559.31	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.55	185951.95	2157.61	3227.1	False	d3-MeFOSAA	152559.31	1250.00	NMeFOSAA	0.606	0.674	✓
NEtFOSAA_1	584.0 / 419.0	3.70	320883.88	2696.15	6679.0	False	d5-EtFOSAA	157818.26	1250.00	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.71	18579.11	2385.02	734.9	False	d5-EtFOSAA	157818.26	1250.00	NEtFOSAA	0.058	0.061	✓
HFPO-DA_1	285.0 / 169.0	2.01	951869.87	2442.80	5177.5	False	13C3-HFPO-DA	455230.54	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	2.01	24314.89	2487.43	3769.2	False	13C3-HFPO-DA	455230.54	1250.00	HFPO-DA	0.026	0.026	✓
ADONA_1	377.0 / 251.0	2.33	3164133.46	2442.73	5796.5	False	13C8-PFOA	784127.53	1222.50	ADONA			
ADONA_2	377.0 / 85.0	2.33	43280.86	2587.13	54697.6	False	13C8-PFOA	784127.53	1222.50	ADONA	0.014	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	3.24	2821796.73	2397.78	3407.2	False	13C8-PFOA	784127.53	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	3.24	22942.39	2234.30	9856.1	False	13C8-PFOA	784127.53	1222.50	9CI-PF3ONS	0.008	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.83	2506123.42	2484.95	4649.6	False	13C8-PFOA	784127.53	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.83	11137.71	2405.57	5079.9	False	13C8-PFOA	784127.53	1222.50	11Cl-PF3OUdS	0.004	0.004	✓

Sample Name	LD81 ICC	Injection Vial	9
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:34:56 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.96	766128.53	1207.13	5439.7	False	13C2-PFDA	738518.73	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.53	154926.41	1365.87	2160.1	False	13C4-PFOS	122141.94	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.69	169078.85	1453.49	1982.0	False	13C4-PFOS	122141.94	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.88	698501.24	1303.78	4971.1	False	13C2-PFOA	746227.50	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.28	740750.91	1241.89	7706.6	False	13C2-PFOA	746227.50	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.67	790591.24	1340.35	6330.0	False	13C2-PFOA	746227.50	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.04	759139.22	1307.82	5686.5	False	13C2-PFOA	746227.50	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.38	754442.61	1245.40	4361.1	False	13C2-PFDA	738518.73	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.68	813151.24	1274.69	4522.1	False	13C2-PFDA	738518.73	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.40	859545.05	1146.14	16705.9	False	13C2-PFDA	738518.73	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.56	155357.23	1280.23	4139.5	False	13C4-PFOS	122141.94	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.30	151014.34	1295.53	4309.5	False	13C4-PFOS	122141.94	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.03	123218.28	1170.75	1135.5	False	13C4-PFOS	122141.94	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	2.00	440852.75	1256.93	3608.1	False	13C2-PFOA	746227.50	1250.00		N/A	N/A	✓

Sample Name	LD76 CCV	Injection Vial	2
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 9:32:55 AM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.95	696371.16	1136.35	8031.2	False	13C2-PFDA	713086.92	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.53	138121.21	1273.32	2390.7	False	13C4-PFOS	116807.33	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.68	144403.45	1298.06	1957.0	False	13C4-PFOS	116807.33	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.89	682371.06	1300.30	7992.1	False	13C2-PFOA	730944.99	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.28	735320.62	1258.56	4725.1	False	13C2-PFOA	730944.99	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.67	746844.01	1292.65	4420.6	False	13C2-PFOA	730944.99	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.04	745862.71	1311.82	4819.8	False	13C2-PFOA	730944.99	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.38	659594.66	1127.67	4382.0	False	13C2-PFDA	713086.92	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.68	816263.55	1325.21	6570.7	False	13C2-PFDA	713086.92	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.40	870083.06	1201.57	18557.8	False	13C2-PFDA	713086.92	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.56	142001.87	1223.62	178148.4	False	13C4-PFOS	116807.33	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.30	135774.19	1217.98	25049.9	False	13C4-PFOS	116807.33	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.03	133387.63	1325.25	1589.6	False	13C4-PFOS	116807.33	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	2.00	413459.58	1203.48	5357.3	False	13C2-PFOA	730944.99	1250.00		N/A	N/A	✓

Sample Name	LD78 CCV	Injection Vial	21
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 1:22:15 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.95	696782.12	1311.61	7297.7	False	13C2-PFDA	618169.52	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.53	137878.52	1182.10	2045.1	False	13C4-PFOS	125599.96	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.68	135242.10	1130.60	2012.6	False	13C4-PFOS	125599.96	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.89	643517.18	1264.59	6444.1	False	13C2-PFOA	708793.19	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.28	710142.62	1253.45	4179.2	False	13C2-PFOA	708793.19	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.67	687060.91	1226.35	7042.1	False	13C2-PFOA	708793.19	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.04	700483.63	1270.51	6510.3	False	13C2-PFOA	708793.19	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.38	699473.71	1379.46	4421.2	False	13C2-PFDA	618169.52	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.68	711400.06	1332.30	4584.9	False	13C2-PFDA	618169.52	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.40	828723.78	1320.18	17466.9	False	13C2-PFDA	618169.52	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.56	143412.94	1149.27	19396652.4	False	13C4-PFOS	125599.96	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.30	144222.17	1203.19	3271.5	False	13C4-PFOS	125599.96	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.03	117072.00	1081.73	1339.4	False	13C4-PFOS	125599.96	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	2.00	411986.34	1236.67	3550.7	False	13C2-PFOA	708793.19	1250.00		N/A	N/A	✓

Sample Name	LD77 CCV	Injection Vial	30
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 3:00:38 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.97	739760.50	1143.31	5076.1	False	13C2-PFDA	752904.91	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.55	149718.35	1230.02	2769.8	False	13C4-PFOS	131072.63	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.69	158499.70	1269.71	2040.4	False	13C4-PFOS	131072.63	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.90	723559.48	1259.64	6483.0	False	13C2-PFOA	800087.94	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.29	815768.80	1275.59	7363.1	False	13C2-PFOA	800087.94	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.68	784127.53	1239.90	6538.5	False	13C2-PFOA	800087.94	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.05	709405.28	1139.87	4914.7	False	13C2-PFOA	800087.94	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.39	761516.18	1233.06	4934.9	False	13C2-PFDA	752904.91	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.69	810225.28	1245.84	5104.8	False	13C2-PFDA	752904.91	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.41	917505.46	1200.05	19552.4	False	13C2-PFDA	752904.91	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.57	157541.57	1209.78	6127.8	False	13C4-PFOS	131072.63	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.31	140584.94	1123.88	4978.9	False	13C4-PFOS	131072.63	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.05	130917.45	1159.15	2801.1	False	13C4-PFOS	131072.63	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	2.01	455230.54	1210.55	3564.7	False	13C2-PFOA	800087.94	1250.00		N/A	N/A	✓

Raw Analytical Data

Sample Name	LD80 IB	Injection Vial	8
Sample ID	Instrument Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:24:05 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.57	722.81	19.88	35.9	False	13C3-PFBS	145052.67	1162.50	PFBS			
PFBS_2	298.9 / 99.0	N/A	N/A	N/A	N/A	True	13C3-PFBS	145052.67	1162.50	PFBS	N/A	0.325	
PFHxA_1	313.0 / 269.0	N/A	N/A	N/A	N/A	True	13C5-PFHxA	643182.52	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	N/A	N/A	N/A	True	13C5-PFHxA	643182.52	1250.00	PFHxA	N/A	0.077	✓
PFHpA_1	363.0 / 319.0	N/A	N/A	N/A	N/A	True	13C4-PFHpA	706580.81	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	N/A	N/A	N/A	True	13C4-PFHpA	706580.81	1250.00	PFHpA	N/A	0.020	✓
PFHxS_1	399.0 / 80.0	N/A	N/A	N/A	N/A	True	13C3-PFHxS	138589.04	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	N/A	N/A	N/A	True	13C3-PFHxS	138589.04	1182.50	PFHxS	N/A	0.289	✓
PFOA_1	413.0 / 369.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	711619.32	1222.50	PFOA			
PFOA_2	413.0 / 169.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	711619.32	1222.50	PFOA	N/A	0.075	✓
PFNA_1	463.0 / 419.0	3.07	2942.70	< 0	12.3	False	13C9-PFNA	740015.15	1250.00	PFNA			
PFNA_2	463.0 / 219.0	3.04	787.49	< 0	17.0	False	13C9-PFNA	740015.15	1250.00	PFNA	0.268	0.298	✓
PFOS_1	499.0 / 80.0	N/A	N/A	N/A	N/A	True	13C8-PFOS	134737.33	1195.00	PFOS			
PFOS_2	499.0 / 99.0	N/A	N/A	N/A	N/A	True	13C8-PFOS	134737.33	1195.00	PFOS	N/A	0.176	✓
PFDA_1	513.0 / 469.0	3.39	4934.05	< 0	19.0	False	13C6-PFDA	699505.30	1250.00	PFDA			
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	699505.30	1250.00	PFDA	N/A	0.042	
PFUnA_1	563.0 / 519.0	3.69	2693.33	18.40	23.8	False	13C7-PFUnA	792060.24	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.68	180.91	72.17	11.8	False	13C7-PFUnA	792060.24	1250.00	PFUnA	0.067	0.049	✓
PFDoA_1	613.0 / 569.0	3.97	3774.20	< 0	27.9	False	13C2-PFDoA	710746.02	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.96	537.07	14.55	22.3	False	13C2-PFDoA	710746.02	1250.00	PFDoA	0.142	0.155	✓
PFTTrDA_1	663.0 / 619.0	4.21	3766.24	< 0	56.8	False	13C2-PFTTeDA	873954.96	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	4.20	205.34	< 0	10.0	False	13C2-PFTTeDA	873954.96	1250.00	PFTTrDA	0.055	0.069	✓
PFTTeDA_1	713.0 / 669.0	4.42	13334.51	< 0	200.0	False	13C2-PFTTeDA	873954.96	1250.00	PFTTeDA			
PFTTeDA_2	713.0 / 169.0	4.40	766.96	< 0	78.3	False	13C2-PFTTeDA	873954.96	1250.00	PFTTeDA	0.058	0.056	✓
NMeFOSAA_1	570.0 / 419.0	3.54	2787.12	36.99	249.7	False	d3-MeFOSAA	144072.58	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	144072.58	1250.00	NMeFOSAA	N/A	0.674	
NEtFOSAA_1	584.0 / 419.0	3.70	2821.07	< 0	2690.9	False	d5-EtFOSAA	166039.76	1250.00	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	True	d5-EtFOSAA	166039.76	1250.00	NEtFOSAA	N/A	0.061	
HFPO-DA_1	285.0 / 169.0	2.03	1138.33	< 0	22.7	True	13C3-HFPO-DA	420793.18	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	2.02	148.13	< 0	46362.1	False	13C3-HFPO-DA	420793.18	1250.00	HFPO-DA	0.130	0.026	
ADONA_1	377.0 / 251.0	2.32	5776.14	< 0	58.2	False	13C8-PFOA	711619.32	1222.50	ADONA			
ADONA_2	377.0 / 85.0	2.34	115.44	< 0	12841.9	False	13C8-PFOA	711619.32	1222.50	ADONA	0.020	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	3.22	4243.05	< 0	31.0	False	13C8-PFOA	711619.32	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	711619.32	1222.50	9CI-PF3ONS	N/A	0.009	
11Cl-pf3OUdS_1	631.0 / 451.0	3.82	5095.25	< 0	72.5	False	13C8-PFOA	711619.32	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	711619.32	1222.50	11Cl-PF3OUdS	N/A	0.004	

Sample Name	LD80 IB	Injection Vial	4
Sample ID	IB	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 9:54:37 AM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.57	460.59	19.08	25.5	False	13C3-PFBS	146701.79	1162.50	PFBS			
PFBS_2	298.9 / 99.0	N/A	N/A	N/A	N/A	True	13C3-PFBS	146701.79	1162.50	PFBS	N/A	0.325	
PFHxA_1	313.0 / 269.0	N/A	N/A	N/A	N/A	True	13C5-PFHxA	654298.65	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	N/A	N/A	N/A	N/A	True	13C5-PFHxA	654298.65	1250.00	PFHxA	N/A	0.077	✓
PFHpA_1	363.0 / 319.0	N/A	N/A	N/A	N/A	True	13C4-PFHpA	765227.94	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	N/A	N/A	N/A	N/A	True	13C4-PFHpA	765227.94	1250.00	PFHpA	N/A	0.020	✓
PFHxS_1	399.0 / 80.0	N/A	N/A	N/A	N/A	True	13C3-PFHxS	142235.34	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	N/A	N/A	N/A	True	13C3-PFHxS	142235.34	1182.50	PFHxS	N/A	0.289	✓
PFOA_1	413.0 / 369.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	733430.30	1222.50	PFOA			
PFOA_2	413.0 / 169.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	733430.30	1222.50	PFOA	N/A	0.075	✓
PFNA_1	463.0 / 419.0	3.01	3976.43	< 0	17.1	False	13C9-PFNA	668828.18	1250.00	PFNA			
PFNA_2	463.0 / 219.0	N/A	N/A	N/A	N/A	True	13C9-PFNA	668828.18	1250.00	PFNA	N/A	0.298	
PFOS_1	499.0 / 80.0	2.91	4236.26	< 0	13.3	False	13C8-PFOS	129774.49	1195.00	PFOS			
PFOS_2	499.0 / 99.0	N/A	N/A	N/A	N/A	True	13C8-PFOS	129774.49	1195.00	PFOS	N/A	0.176	
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	706734.77	1250.00	PFDA			
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	706734.77	1250.00	PFDA	N/A	0.042	✓
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	805682.84	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	805682.84	1250.00	PFUnA	N/A	0.049	✓
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	739383.12	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	739383.12	1250.00	PFDoA	N/A	0.155	✓
PFTTrDA_1	663.0 / 619.0	4.17	2124.35	< 0	33.3	False	13C2-PFTTeDA	840174.65	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTTeDA	840174.65	1250.00	PFTTrDA	N/A	0.069	
PFTTeDA_1	713.0 / 669.0	4.43	8080.32	< 0	193.7	False	13C2-PFTTeDA	840174.65	1250.00	PFTTeDA			
PFTTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTTeDA	840174.65	1250.00	PFTTeDA	N/A	0.056	
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	141155.25	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	141155.25	1250.00	NMeFOSAA	N/A	0.674	✓
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	True	d5-EtFOSAA	139531.48	1250.00	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	True	d5-EtFOSAA	139531.48	1250.00	NEtFOSAA	N/A	0.061	✓
HFPO-DA_1	285.0 / 169.0	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	422437.55	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	422437.55	1250.00	HFPO-DA	N/A	0.026	✓
ADONA_1	377.0 / 251.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	733430.30	1222.50	ADONA			
ADONA_2	377.0 / 85.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	733430.30	1222.50	ADONA	N/A	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	733430.30	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	733430.30	1222.50	9CI-PF3ONS	N/A	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	733430.30	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	733430.30	1222.50	11Cl-PF3OUdS	N/A	0.004	✓

Sample Name	DB332PB-FS(0)	Injection Vial	23
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 1:44:00 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.58	4347.61	29.83	98.1	False	13C3-PFBS	155701.87	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.58	2132.35	19.13	116.8	False	13C3-PFBS	155701.87	1162.50	PFBS	0.490	0.325	
PFHxA_1	313.0 / 269.0	1.91	45520.62	81.72	113.3	True	13C5-PFHxA	708596.22	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.91	3612.69	54.57	71.2	False	13C5-PFHxA	708596.22	1250.00	PFHxA	0.079	0.077	✓
PFHpA_1	363.0 / 319.0	2.30	12351.25	2.50	33.4	False	13C4-PFHpA	812323.36	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.28	417.03	< 0	12.8	False	13C4-PFHpA	812323.36	1250.00	PFHpA	0.034	0.020	
PFHxS_1	399.0 / 80.0	2.34	3123.15	12.84	13.8	True	13C3-PFHxS	148238.12	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	N/A	N/A	N/A	N/A	True	13C3-PFHxS	148238.12	1182.50	PFHxS	N/A	0.289	
PFOA_1	413.0 / 369.0	2.68	5493.77	< 0	19.0	False	13C8-PFOA	817493.98	1222.50	PFOA			
PFOA_2	413.0 / 169.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	817493.98	1222.50	PFOA	N/A	0.075	
PFNA_1	463.0 / 419.0	3.05	8409.56	< 0	29.5	False	13C9-PFNA	803855.15	1250.00	PFNA			
PFNA_2	463.0 / 219.0	N/A	N/A	N/A	N/A	True	13C9-PFNA	803855.15	1250.00	PFNA	N/A	0.298	
PFOS_1	499.0 / 80.0	N/A	N/A	N/A	N/A	True	13C8-PFOS	131629.52	1195.00	PFOS			
PFOS_2	499.0 / 99.0	N/A	N/A	N/A	N/A	True	13C8-PFOS	131629.52	1195.00	PFOS	N/A	0.176	✓
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	781339.29	1250.00	PFDA			
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	781339.29	1250.00	PFDA	N/A	0.042	✓
PFUnA_1	563.0 / 519.0	3.69	3596.96	19.24	18.3	False	13C7-PFUnA	872659.01	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.68	270.09	73.99	17.1	False	13C7-PFUnA	872659.01	1250.00	PFUnA	0.075	0.049	
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	744583.90	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	744583.90	1250.00	PFDoA	N/A	0.155	✓
PFTTrDA_1	663.0 / 619.0	4.19	1406.17	< 0	17.5	False	13C2-PFTTeDA	911883.86	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTTeDA	911883.86	1250.00	PFTTrDA	N/A	0.069	
PFTTeDA_1	713.0 / 669.0	4.44	11667.96	< 0	172.3	False	13C2-PFTTeDA	911883.86	1250.00	PFTTeDA			
PFTTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTTeDA	911883.86	1250.00	PFTTeDA	N/A	0.056	
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	202966.57	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	202966.57	1250.00	NMeFOSAA	N/A	0.674	✓
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	True	d5-EtFOSAA	223388.70	1250.00	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	True	d5-EtFOSAA	223388.70	1250.00	NEtFOSAA	N/A	0.061	✓
HFPO-DA_1	285.0 / 169.0	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	412043.20	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	412043.20	1250.00	HFPO-DA	N/A	0.026	✓
ADONA_1	377.0 / 251.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	817493.98	1222.50	ADONA			
ADONA_2	377.0 / 85.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	817493.98	1222.50	ADONA	N/A	0.014	✓
9Cl-PF3ONS_1	531.0 / 351.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	817493.98	1222.50	9Cl-PF3ONS			
9Cl-PF3ONS_2	531.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	817493.98	1222.50	9Cl-PF3ONS	N/A	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	817493.98	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	817493.98	1222.50	11Cl-PF3OUdS	N/A	0.004	✓

Sample Name	DB333LCS-FS(0)	Injection Vial	24
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 1:54:52 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.58	2959796.05	10417.59	20558.6	False	13C3-PFBS	123477.31	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.58	927281.43	10263.33	16906.4	False	13C3-PFBS	123477.31	1162.50	PFBS	0.313	0.325	✓
PFHxA_1	313.0 / 269.0	1.91	4936296.90	10399.20	3549.3	False	13C5-PFHxA	580938.61	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.91	358998.78	10226.11	2796.9	False	13C5-PFHxA	580938.61	1250.00	PFHxA	0.073	0.077	✓
PFHpA_1	363.0 / 319.0	2.30	5015718.92	9757.78	2942.4	False	13C4-PFHpA	647670.61	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.30	93245.30	9620.60	1581.5	False	13C4-PFHpA	647670.61	1250.00	PFHpA	0.019	0.020	✓
PFHxS_1	399.0 / 80.0	2.32	4483405.87	11570.53	5380.8	False	13C3-PFHxS	113630.28	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	2.32	1264670.05	11885.57	4434.1	False	13C3-PFHxS	113630.28	1182.50	PFHxS	0.282	0.289	✓
PFOA_1	413.0 / 369.0	2.69	5895561.31	10762.66	2605.9	False	13C8-PFOA	631282.97	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.69	368920.79	10163.78	1454.1	False	13C8-PFOA	631282.97	1222.50	PFOA	0.063	0.075	✓
PFNA_1	463.0 / 419.0	3.06	5582970.76	10268.70	2803.3	False	13C9-PFNA	644220.15	1250.00	PFNA			
PFNA_2	463.0 / 219.0	3.06	1639741.70	10168.94	3204.1	False	13C9-PFNA	644220.15	1250.00	PFNA	0.294	0.298	✓
PFOS_1	499.0 / 80.0	3.06	4199790.45	10080.47	2463.9	False	13C8-PFOS	110064.31	1195.00	PFOS			
PFOS_2	499.0 / 99.0	3.06	805865.63	10951.11	6548.7	False	13C8-PFOS	110064.31	1195.00	PFOS	0.192	0.176	✓
PFDA_1	513.0 / 469.0	3.40	5634909.75	10325.68	2194.1	False	13C6-PFDA	615275.15	1250.00	PFDA			
PFDA_2	513.0 / 219.0	3.40	234217.64	9766.80	2271.3	False	13C6-PFDA	615275.15	1250.00	PFDA	0.042	0.042	✓
PFUnA_1	563.0 / 519.0	3.70	5290172.00	9041.76	4294.6	False	13C7-PFUnA	682658.49	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	3.70	276107.66	9114.16	3309.1	False	13C7-PFUnA	682658.49	1250.00	PFUnA	0.052	0.049	✓
PFDoA_1	613.0 / 569.0	3.97	5038426.81	9887.36	4141.2	False	13C2-PFDoA	633705.36	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	3.97	871864.49	10741.80	5809.8	False	13C2-PFDoA	633705.36	1250.00	PFDoA	0.173	0.155	✓
PFTTrDA_1	663.0 / 619.0	4.21	4916898.89	10630.78	8284.6	False	13C2-PFTeDA	732679.17	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	4.20	323014.01	10055.71	4745.4	False	13C2-PFTeDA	732679.17	1250.00	PFTTrDA	0.066	0.069	✓
PFTeDA_1	713.0 / 669.0	4.41	6351838.59	10771.30	19011.9	False	13C2-PFTeDA	732679.17	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	4.41	345771.61	10573.81	16167.2	False	13C2-PFTeDA	732679.17	1250.00	PFTeDA	0.054	0.056	✓
NMeFOSAA_1	570.0 / 419.0	3.55	1103863.25	9765.61	13635.2	False	d3-MeFOSAA	141873.92	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	3.55	718376.51	9460.77	3035.5	False	d3-MeFOSAA	141873.92	1250.00	NMeFOSAA	0.651	0.674	✓
NEtFOSAA_1	584.0 / 419.0	3.70	1066964.17	9734.05	4148.8	False	d5-EtFOSAA	141096.38	1250.00	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	3.70	70385.74	9830.33	2041.8	False	d5-EtFOSAA	141096.38	1250.00	NEtFOSAA	0.066	0.061	✓
HFPO-DA_1	285.0 / 169.0	2.01	3218706.73	9787.22	7784.5	False	13C3-HFPO-DA	385434.27	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	2.01	82543.56	10188.71	11581.8	False	13C3-HFPO-DA	385434.27	1250.00	HFPO-DA	0.026	0.026	✓
ADONA_1	377.0 / 251.0	2.33	10735304.90	10493.84	12012.8	False	13C8-PFOA	631282.97	1222.50	ADONA			
ADONA_2	377.0 / 85.0	2.33	142763.79	11046.13	88675.4	False	13C8-PFOA	631282.97	1222.50	ADONA	0.013	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	3.24	10051408.10	10798.36	5627.6	False	13C8-PFOA	631282.97	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	3.24	83168.90	10279.79	3408.9	False	13C8-PFOA	631282.97	1222.50	9CI-PF3ONS	0.008	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	3.83	8145204.21	10162.50	6022.5	False	13C8-PFOA	631282.97	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	3.83	40093.83	10734.78	2963.8	False	13C8-PFOA	631282.97	1222.50	11Cl-PF3OUdS	0.005	0.004	✓

Sample Name	G1707-FS1(0)	Injection Vial	25
Sample ID	CBD-AOA-MW15-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 2:05:44 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.59	2470388.12	8677.00	2327.0	False	13C3-PFBS	123775.97	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.59	778858.70	8599.83	1924.5	False	13C3-PFBS	123775.97	1162.50	PFBS	0.315	0.325	✓
PFHxA_1	313.0 / 269.0	1.91	23205170.47	52055.37	1224.2	False	13C5-PFHxA	545435.82	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.92	1536266.26	46715.95	1542.2	False	13C5-PFHxA	545435.82	1250.00	PFHxA	0.066	0.077	✓
PFHpA_1	363.0 / 319.0	2.31	13249905.00	29651.05	1691.5	False	13C4-PFHpA	563692.98	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.31	246340.12	29294.71	1442.1	False	13C4-PFHpA	563692.98	1250.00	PFHpA	0.019	0.020	✓
PFHxS_1	399.0 / 80.0	2.33	88056859.46	234911.89	4591.4	False	13C3-PFHxS	109865.02	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	2.33	28187382.68	274797.05	4792.9	False	13C3-PFHxS	109865.02	1182.50	PFHxS	0.320	0.289	✓
PFOA_1	413.0 / 369.0	2.70	57511826.37	110118.52	2329.4	False	13C8-PFOA	604280.66	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.70	4164199.69	121703.57	2130.1	True	13C8-PFOA	604280.66	1222.50	PFOA	0.072	0.075	✓
PFNA_1	463.0 / 419.0	3.06	6918792.28	13082.48	1806.4	False	13C9-PFNA	626820.75	1250.00	PFNA			
PFNA_2	463.0 / 219.0	3.06	2022988.04	12898.75	3058.3	False	13C9-PFNA	626820.75	1250.00	PFNA	0.292	0.298	✓
PFOS_1	499.0 / 80.0	2.94	4673813.29	10675.83	1406.0	False	13C8-PFOS	115685.96	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.95	487732.14	6288.44	1848.7	False	13C8-PFOS	115685.96	1195.00	PFOS	0.104	0.176	✓
PFDA_1	513.0 / 469.0	3.39	9839.95	< 0	31.7	False	13C6-PFDA	624250.17	1250.00	PFDA			
PFDA_2	513.0 / 219.0	3.37	492.07	29.51	19.4	True	13C6-PFDA	624250.17	1250.00	PFDA	0.050	0.042	✓
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	554455.87	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	554455.87	1250.00	PFUnA	N/A	0.049	✓
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	454241.65	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	454241.65	1250.00	PFDoA	N/A	0.155	✓
PFTeDA_1	663.0 / 619.0	4.21	1659.84	< 0	29.0	False	13C2-PFTeDA	363470.88	1250.00	PFTeDA			
PFTeDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	363470.88	1250.00	PFTeDA	N/A	0.069	
PFTeDA_1	713.0 / 669.0	4.45	11507.53	< 0	164.6	False	13C2-PFTeDA	363470.88	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	363470.88	1250.00	PFTeDA	N/A	0.056	
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	116148.99	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	116148.99	1250.00	NMeFOSAA	N/A	0.674	✓
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	True	d5-EtFOSAA	121071.36	1250.00	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	True	d5-EtFOSAA	121071.36	1250.00	NEtFOSAA	N/A	0.061	✓
HFPO-DA_1	285.0 / 169.0	2.02	11302.48	28.51	152.4	False	13C3-HFPO-DA	340635.62	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	2.00	636.24	17.95	33.3	False	13C3-HFPO-DA	340635.62	1250.00	HFPO-DA	0.056	0.026	
ADONA_1	377.0 / 251.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	604280.66	1222.50	ADONA			
ADONA_2	377.0 / 85.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	604280.66	1222.50	ADONA	N/A	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	604280.66	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	604280.66	1222.50	9CI-PF3ONS	N/A	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	604280.66	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	604280.66	1222.50	11Cl-PF3OUdS	N/A	0.004	✓

Sample Name	G1707-FS1-D(3)	Injection Vial	26
Sample ID	CBD-AOA-MW15-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 2:16:36 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.58	619447.96	1614.48	2243.8	False	13C3-PFBS	168313.07	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.58	199729.11	1622.11	1399.5	False	13C3-PFBS	168313.07	1162.50	PFBS	0.322	0.325	✓
PFHxA_1	313.0 / 269.0	1.90	6306978.10	10212.08	1258.4	False	13C5-PFHxA	755854.60	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.90	393443.63	8609.00	1103.1	False	13C5-PFHxA	755854.60	1250.00	PFHxA	0.062	0.077	✓
PFHpA_1	363.0 / 319.0	2.30	3519966.07	5737.32	976.9	False	13C4-PFHpA	772115.80	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.30	70320.06	6069.30	874.6	False	13C4-PFHpA	772115.80	1250.00	PFHpA	0.020	0.020	✓
PFHxS_1	399.0 / 80.0	2.32	27965425.08	53570.09	3932.6	False	13C3-PFHxS	153017.82	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	2.32	7616590.61	53283.72	3901.9	False	13C3-PFHxS	153017.82	1182.50	PFHxS	0.272	0.289	✓
PFOA_1	413.0 / 369.0	2.69	17514994.27	25672.79	1916.5	False	13C8-PFOA	788250.00	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.69	1006705.71	22415.42	1122.5	True	13C8-PFOA	788250.00	1222.50	PFOA	0.057	0.075	✓
PFNA_1	463.0 / 419.0	3.06	1626988.13	2355.25	1161.1	False	13C9-PFNA	815035.72	1250.00	PFNA			
PFNA_2	463.0 / 219.0	3.06	494399.80	2409.70	1655.1	False	13C9-PFNA	815035.72	1250.00	PFNA	0.304	0.298	✓
PFOS_1	499.0 / 80.0	2.94	1135063.49	1968.87	893.8	False	13C8-PFOS	149472.82	1195.00	PFOS			
PFOS_2	499.0 / 99.0	2.94	122597.33	1190.34	1032.3	False	13C8-PFOS	149472.82	1195.00	PFOS	0.108	0.176	✓
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	828575.47	1250.00	PFDA			
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	828575.47	1250.00	PFDA	N/A	0.042	✓
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	864863.78	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	864863.78	1250.00	PFUnA	N/A	0.049	✓
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	824394.91	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	824394.91	1250.00	PFDoA	N/A	0.155	✓
PFTTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	True	13C2-PFTTeDA	826953.74	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTTeDA	826953.74	1250.00	PFTTrDA	N/A	0.069	✓
PFTTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	True	13C2-PFTTeDA	826953.74	1250.00	PFTTeDA			
PFTTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTTeDA	826953.74	1250.00	PFTTeDA	N/A	0.056	✓
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	216848.47	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	216848.47	1250.00	NMeFOSAA	N/A	0.674	✓
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	True	d5-EtFOSAA	246473.68	1250.00	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	True	d5-EtFOSAA	246473.68	1250.00	NEtFOSAA	N/A	0.061	✓
HFPO-DA_1	285.0 / 169.0	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	436404.78	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	436404.78	1250.00	HFPO-DA	N/A	0.026	✓
ADONA_1	377.0 / 251.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	788250.00	1222.50	ADONA			
ADONA_2	377.0 / 85.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	788250.00	1222.50	ADONA	N/A	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	788250.00	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	788250.00	1222.50	9CI-PF3ONS	N/A	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	788250.00	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	788250.00	1222.50	11Cl-PF3OUdS	N/A	0.004	✓

Sample Name	G1707-FS1-D(5)	Injection Vial	27
Sample ID	CBD-AOA-MW15-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 2:27:29 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	169542.46	1162.50	PFBS			
PFBS_2	298.9 / 99.0	N/A	N/A	N/A	N/A	True	13C3-PFBS	169542.46	1162.50	PFBS	N/A	0.325	✓
PFHxA_1	313.0 / 269.0	1.90	2315164.84	3869.92	1003.5	False	13C5-PFHxA	732535.97	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.90	149893.30	3366.01	822.3	False	13C5-PFHxA	732535.97	1250.00	PFHxA	0.065	0.077	✓
PFHpA_1	363.0 / 319.0	2.30	1380473.97	2344.17	756.6	False	13C4-PFHpA	738029.33	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.30	26099.98	2329.05	640.1	False	13C4-PFHpA	738029.33	1250.00	PFHpA	0.019	0.020	✓
PFHxS_1	399.0 / 80.0	2.32	10716022.72	22142.72	3312.8	False	13C3-PFHxS	141880.37	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	2.32	3100864.56	23375.15	3857.8	False	13C3-PFHxS	141880.37	1182.50	PFHxS	0.289	0.289	✓
PFOA_1	413.0 / 369.0	2.69	7172904.10	10570.65	1410.3	False	13C8-PFOA	781947.01	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.69	459305.33	10216.63	1159.3	True	13C8-PFOA	781947.01	1222.50	PFOA	0.064	0.075	✓
PFNA_1	463.0 / 419.0	N/A	N/A	N/A	N/A	True	13C9-PFNA	757564.45	1250.00	PFNA			
PFNA_2	463.0 / 219.0	N/A	N/A	N/A	N/A	True	13C9-PFNA	757564.45	1250.00	PFNA	N/A	0.298	✓
PFOS_1	499.0 / 80.0	N/A	N/A	N/A	N/A	True	13C8-PFOS	144815.50	1195.00	PFOS			
PFOS_2	499.0 / 99.0	N/A	N/A	N/A	N/A	True	13C8-PFOS	144815.50	1195.00	PFOS	N/A	0.176	✓
PFDA_1	513.0 / 469.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	826506.55	1250.00	PFDA			
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	826506.55	1250.00	PFDA	N/A	0.042	✓
PFUnA_1	563.0 / 519.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	884123.14	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	884123.14	1250.00	PFUnA	N/A	0.049	✓
PFDoA_1	613.0 / 569.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	829657.22	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	829657.22	1250.00	PFDoA	N/A	0.155	✓
PFTTrDA_1	663.0 / 619.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1006312.13	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1006312.13	1250.00	PFTTrDA	N/A	0.069	✓
PFTeDA_1	713.0 / 669.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1006312.13	1250.00	PFTeDA			
PFTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTeDA	1006312.13	1250.00	PFTeDA	N/A	0.056	✓
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	183523.17	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	183523.17	1250.00	NMeFOSAA	N/A	0.674	✓
NEiFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	True	d5-EiFOSAA	195621.72	1250.00	NEiFOSAA			
NEiFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	True	d5-EiFOSAA	195621.72	1250.00	NEiFOSAA	N/A	0.061	✓
HFPO-DA_1	285.0 / 169.0	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	448603.04	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	N/A	N/A	N/A	N/A	True	13C3-HFPO-DA	448603.04	1250.00	HFPO-DA	N/A	0.026	✓
ADONA_1	377.0 / 251.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	781947.01	1222.50	ADONA			
ADONA_2	377.0 / 85.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	781947.01	1222.50	ADONA	N/A	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	781947.01	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	781947.01	1222.50	9CI-PF3ONS	N/A	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	781947.01	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	781947.01	1222.50	11Cl-PF3OUdS	N/A	0.004	✓

Sample Name	G1708-FS1(0)	Injection Vial	28
Sample ID	CBD-AOA-MW16-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 2:38:21 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455
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	1.58	819299.90	2576.32	865.6	True	13C3-PFBS	138929.29	1162.50	PFBS			
PFBS_2	298.9 / 99.0	1.58	226044.18	2223.96	1080.8	False	13C3-PFBS	138929.29	1162.50	PFBS	0.276	0.325	✓
PFHxA_1	313.0 / 269.0	1.91	3537202.96	7710.59	482.9	False	13C5-PFHxA	561496.10	1250.00	PFHxA			
PFHxA_2	313.0 / 119.0	1.91	219138.86	6447.26	591.5	False	13C5-PFHxA	561496.10	1250.00	PFHxA	0.062	0.077	✓
PFHpA_1	363.0 / 319.0	2.30	1227913.33	2205.63	278.2	False	13C4-PFHpA	697390.72	1250.00	PFHpA			
PFHpA_2	363.0 / 169.0	2.30	36243.28	3443.90	455.7	False	13C4-PFHpA	697390.72	1250.00	PFHpA	0.030	0.020	
PFHxS_1	399.0 / 80.0	2.32	12361160.44	27347.63	963.9	True	13C3-PFHxS	132505.64	1182.50	PFHxS			
PFHxS_2	399.0 / 99.0	2.32	3517920.29	28403.11	1744.7	True	13C3-PFHxS	132505.64	1182.50	PFHxS	0.285	0.289	✓
PFOA_1	413.0 / 369.0	2.69	3080340.72	5155.59	574.6	False	13C8-PFOA	685284.70	1222.50	PFOA			
PFOA_2	413.0 / 169.0	2.69	180254.56	4480.26	324.6	True	13C8-PFOA	685284.70	1222.50	PFOA	0.059	0.075	✓
PFNA_1	463.0 / 419.0	3.06	1074501.69	1716.89	828.0	False	13C9-PFNA	736889.72	1250.00	PFNA			
PFNA_2	463.0 / 219.0	3.06	354095.19	1905.12	985.6	False	13C9-PFNA	736889.72	1250.00	PFNA	0.330	0.298	✓
PFOS_1	499.0 / 80.0	2.99	11635157.86	22274.76	937.2	False	13C8-PFOS	138341.49	1195.00	PFOS			
PFOS_2	499.0 / 99.0	3.06	1755478.65	19009.59	2808.4	False	13C8-PFOS	138341.49	1195.00	PFOS	0.151	0.176	✓
PFDA_1	513.0 / 469.0	3.39	5128.52	< 0	17.5	False	13C6-PFDA	726834.79	1250.00	PFDA			
PFDA_2	513.0 / 219.0	N/A	N/A	N/A	N/A	True	13C6-PFDA	726834.79	1250.00	PFDA	N/A	0.042	
PFUnA_1	563.0 / 519.0	3.65	1955.97	17.39	11.7	False	13C7-PFUnA	773344.01	1250.00	PFUnA			
PFUnA_2	563.0 / 269.0	N/A	N/A	N/A	N/A	True	13C7-PFUnA	773344.01	1250.00	PFUnA	N/A	0.049	
PFDoA_1	613.0 / 569.0	3.95	1033.32	< 0	11.2	False	13C2-PFDoA	734557.86	1250.00	PFDoA			
PFDoA_2	613.0 / 319.0	N/A	N/A	N/A	N/A	True	13C2-PFDoA	734557.86	1250.00	PFDoA	N/A	0.155	
PFTTrDA_1	663.0 / 619.0	4.21	835.38	< 0	19.2	False	13C2-PFTTeDA	779588.20	1250.00	PFTTrDA			
PFTTrDA_2	663.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTTeDA	779588.20	1250.00	PFTTrDA	N/A	0.069	
PFTTeDA_1	713.0 / 669.0	4.44	7712.39	< 0	80.4	False	13C2-PFTTeDA	779588.20	1250.00	PFTTeDA			
PFTTeDA_2	713.0 / 169.0	N/A	N/A	N/A	N/A	True	13C2-PFTTeDA	779588.20	1250.00	PFTTeDA	N/A	0.056	
NMeFOSAA_1	570.0 / 419.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	164743.62	1250.00	NMeFOSAA			
NMeFOSAA_2	570.0 / 512.0	N/A	N/A	N/A	N/A	True	d3-MeFOSAA	164743.62	1250.00	NMeFOSAA	N/A	0.674	✓
NEtFOSAA_1	584.0 / 419.0	N/A	N/A	N/A	N/A	True	d5-EtFOSAA	168352.84	1250.00	NEtFOSAA			
NEtFOSAA_2	584.0 / 483.0	N/A	N/A	N/A	N/A	True	d5-EtFOSAA	168352.84	1250.00	NEtFOSAA	N/A	0.061	✓
HFPO-DA_1	285.0 / 169.0	2.02	5349.90	7.23	51.7	False	13C3-HFPO-DA	355622.47	1250.00	HFPO-DA			
HFPO-DA_2	285.0 / 118.8	1.98	1092.51	75.64	21.3	False	13C3-HFPO-DA	355622.47	1250.00	HFPO-DA	0.204	0.026	
ADONA_1	377.0 / 251.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	685284.70	1222.50	ADONA			
ADONA_2	377.0 / 85.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	685284.70	1222.50	ADONA	N/A	0.014	✓
9CI-PF3ONS_1	531.0 / 351.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	685284.70	1222.50	9CI-PF3ONS			
9CI-PF3ONS_2	531.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	685284.70	1222.50	9CI-PF3ONS	N/A	0.009	✓
11Cl-pf3OUdS_1	631.0 / 451.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	685284.70	1222.50	11Cl-PF3OUdS			
11Cl-pf3OUdS_2	631.0 / 83.0	N/A	N/A	N/A	N/A	True	13C8-PFOA	685284.70	1222.50	11Cl-PF3OUdS	N/A	0.004	✓

Sample Name	LD80 IB	Injection Vial	8
Sample ID	IB	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:24:05 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.96	710746.02	1209.67	6900.7	False	13C2-PFDA	683695.51	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.54	143094.35	1276.14	2289.9	False	13C4-PFOS	120745.84	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.69	166986.76	1452.10	1853.0	False	13C4-PFOS	120745.84	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.89	643182.52	1261.08	7706.5	False	13C2-PFOA	710395.09	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.28	706580.81	1244.35	6494.9	False	13C2-PFOA	710395.09	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.67	711619.32	1267.32	8046.5	False	13C2-PFOA	710395.09	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.04	740015.15	1339.18	4503.4	False	13C2-PFOA	710395.09	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.38	699505.30	1247.31	4710.3	False	13C2-PFDA	683695.51	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.68	792060.24	1341.19	5609.3	False	13C2-PFDA	683695.51	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.40	873954.96	1258.81	20530.3	False	13C2-PFDA	683695.51	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.56	145052.67	1209.14	16327.3	False	13C4-PFOS	120745.84	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.30	138589.04	1202.68	6671.6	False	13C4-PFOS	120745.84	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.04	134737.33	1295.00	1750.6	False	13C4-PFOS	120745.84	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	2.00	420793.18	1260.26	3040.5	False	13C2-PFOA	710395.09	1250.00		N/A	N/A	✓

Sample Name	LD80 IB	Injection Vial	4
Sample ID	IB	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 9:54:37 AM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.95	739383.12	1180.83	6265.2	False	13C2-PFDA	728612.88	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.53	140697.63	1110.01	2572.2	False	13C4-PFOS	136492.15	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.68	139976.47	1076.80	1847.4	False	13C4-PFOS	136492.15	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.88	654298.65	1284.04	5360.2	False	13C2-PFOA	709752.92	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.27	765227.94	1348.85	6291.7	False	13C2-PFOA	709752.92	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.66	733430.30	1307.34	13194.1	False	13C2-PFOA	709752.92	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.03	668828.18	1211.45	27296.5	False	13C2-PFOA	709752.92	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.37	706734.77	1182.51	4356.1	False	13C2-PFDA	728612.88	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.67	805682.84	1280.16	4787.9	False	13C2-PFDA	728612.88	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.39	840174.65	1135.55	18841.6	False	13C2-PFDA	728612.88	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.55	146701.79	1081.81	15859.5	False	13C4-PFOS	136492.15	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.29	142235.34	1091.92	7404.7	False	13C4-PFOS	136492.15	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.03	129774.49	1103.41	5185.7	False	13C4-PFOS	136492.15	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	1.99	422437.55	1266.32	3434.6	False	13C2-PFOA	709752.92	1250.00		N/A	N/A	✓

Sample Name	DB332PB-FS(0)	Injection Vial	23
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 1:44:00 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.96	744583.90	930.87	6768.3	False	13C2-PFDA	930763.91	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.54	202127.29	1496.33	2369.2	False	13C4-PFOS	145460.56	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.69	224286.66	1619.00	2332.3	False	13C4-PFOS	145460.56	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.89	708596.22	1162.80	4663.6	False	13C2-PFOA	848792.09	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.29	812323.36	1197.31	5630.8	False	13C2-PFOA	848792.09	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.68	817493.98	1218.49	5788.0	False	13C2-PFOA	848792.09	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.05	803855.15	1217.52	6466.6	False	13C2-PFOA	848792.09	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.39	781339.29	1023.40	5128.6	False	13C2-PFDA	930763.91	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.69	872659.01	1085.43	4747.8	False	13C2-PFDA	930763.91	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.40	911883.86	964.79	15274.1	False	13C2-PFDA	930763.91	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.57	155701.87	1077.38	5427.2	False	13C4-PFOS	145460.56	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.31	148238.12	1067.84	3530.0	False	13C4-PFOS	145460.56	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.04	131629.52	1050.18	6080.7	False	13C4-PFOS	145460.56	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	2.01	412043.20	1032.84	4165.2	False	13C2-PFOA	848792.09	1250.00		N/A	N/A	✓

Sample Name	DB333LCS-FS(0)	Injection Vial	24
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 1:54:52 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.96	633705.36	1125.33	5600.4	False	13C2-PFDA	655272.26	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.55	142060.68	1224.89	2008.6	False	13C4-PFOS	124889.69	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.70	141514.01	1189.76	2350.8	False	13C4-PFOS	124889.69	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.90	580938.61	1134.81	4404.1	False	13C2-PFOA	713044.12	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.29	647670.61	1136.37	7994.8	False	13C2-PFOA	713044.12	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.68	631282.97	1120.07	5658.0	False	13C2-PFOA	713044.12	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.05	644220.15	1161.49	5889.1	False	13C2-PFOA	713044.12	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.38	615275.15	1144.70	7300.5	False	13C2-PFDA	655272.26	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.69	682658.49	1206.08	4116.4	False	13C2-PFDA	655272.26	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.41	732679.17	1101.09	18133.6	False	13C2-PFDA	655272.26	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.57	123477.31	995.14	6269.9	False	13C4-PFOS	124889.69	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.31	113630.28	953.37	8363.4	False	13C4-PFOS	124889.69	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.05	110064.31	1022.76	1805.0	False	13C4-PFOS	124889.69	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	2.01	385434.27	1150.07	3138.2	False	13C2-PFOA	713044.12	1250.00		N/A	N/A	✓

Sample Name	G1707-FS1(0)	Injection Vial	25
Sample ID	CBD-AOA-MW15-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 2:05:44 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.97	454241.65	625.23	6264.3	False	13C2-PFDA	845396.95	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.55	115266.97	757.97	1695.8	False	13C4-PFOS	163758.17	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.70	122053.89	782.59	1860.4	False	13C4-PFOS	163758.17	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.90	545435.82	893.60	2019.9	False	13C2-PFOA	850173.53	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.30	563692.98	829.50	1907.1	False	13C2-PFOA	850173.53	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.69	604280.66	899.22	3728.9	False	13C2-PFOA	850173.53	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.06	626820.75	947.84	2287.8	False	13C2-PFOA	850173.53	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.39	624250.17	900.21	3277.8	False	13C2-PFDA	845396.95	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.69	554455.87	759.28	3812.1	False	13C2-PFDA	845396.95	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.41	363470.88	423.39	15213.5	False	13C2-PFDA	845396.95	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.58	123775.97	760.77	2001.0	False	13C4-PFOS	163758.17	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.32	109865.02	702.99	1281.6	False	13C4-PFOS	163758.17	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.05	115685.96	819.84	848.9	False	13C4-PFOS	163758.17	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	2.02	340635.62	852.46	2791.7	False	13C2-PFOA	850173.53	1250.00		N/A	N/A	✓

Sample Name	G1707-FS1-D(3)	Injection Vial	26
Sample ID	CBD-AOA-MW15-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 2:16:36 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.97	824394.91	1106.22	6362.1	False	13C2-PFDA	867175.81	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.55	216288.57	1661.68	2949.6	False	13C4-PFOS	140163.08	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.70	246613.63	1847.44	3557.4	False	13C4-PFOS	140163.08	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.89	755854.60	1277.99	3001.0	False	13C2-PFOA	823795.73	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.29	772115.80	1172.58	4524.7	False	13C2-PFOA	823795.73	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.68	788250.00	1210.55	4776.7	False	13C2-PFOA	823795.73	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.05	815035.72	1271.91	3783.8	False	13C2-PFOA	823795.73	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.39	828575.47	1164.85	4067.2	False	13C2-PFDA	867175.81	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.69	864863.78	1154.61	4520.2	False	13C2-PFDA	867175.81	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.40	826953.74	939.09	20899.1	False	13C2-PFDA	867175.81	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.57	168313.07	1208.67	3339.2	False	13C4-PFOS	140163.08	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.31	153017.82	1143.93	2773.1	False	13C4-PFOS	140163.08	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.05	149472.82	1237.61	1876.1	False	13C4-PFOS	140163.08	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	2.01	436404.78	1127.09	2953.5	False	13C2-PFOA	823795.73	1250.00		N/A	N/A	✓

Sample Name	G1707-FS1-D(5)	Injection Vial	27
Sample ID	CBD-AOA-MW15-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 2:27:29 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.96	829657.22	1194.90	7678.5	False	13C2-PFDA	807943.00	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.54	182284.08	1269.36	2151.0	False	13C4-PFOS	154637.05	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.69	197083.82	1338.21	2810.7	False	13C4-PFOS	154637.05	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.89	732535.97	1217.03	3252.9	False	13C2-PFOA	838374.11	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.29	738029.33	1101.33	4938.5	False	13C2-PFOA	838374.11	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.67	781947.01	1179.99	4999.9	False	13C2-PFOA	838374.11	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.05	757564.45	1161.66	4339.7	False	13C2-PFOA	838374.11	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.39	826506.55	1247.13	6579.9	False	13C2-PFDA	807943.00	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.69	884123.14	1266.86	4899.5	False	13C2-PFDA	807943.00	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.40	1006312.13	1226.55	22417.7	False	13C2-PFDA	807943.00	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.57	169542.46	1103.54	3424.9	False	13C4-PFOS	154637.05	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.31	141880.37	961.39	2659.7	False	13C4-PFOS	154637.05	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.04	144815.50	1086.81	2110.3	False	13C4-PFOS	154637.05	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	2.01	448603.04	1138.45	3044.4	False	13C2-PFOA	838374.11	1250.00		N/A	N/A	✓

Sample Name	G1708-FS1(0)	Injection Vial	28
Sample ID	CBD-AOA-MW16-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 2:38:21 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_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	3.96	734557.86	1078.43	7202.1	False	13C2-PFDA	792587.30	1250.00				
d3-MeFOSAA	573.0 / 419.0	3.55	164491.45	1219.92	2063.9	False	13C4-PFOS	145198.07	1195.00		N/A	N/A	✓
d5-EtFOSAA	589.0 / 419.0	3.69	169574.94	1226.28	2075.7	False	13C4-PFOS	145198.07	1195.00		N/A	N/A	✓
13C5-PFHxA	318.0 / 273.0	1.90	561496.10	894.77	1351.4	False	13C2-PFOA	874062.83	1250.00		N/A	N/A	✓
13C4-PFHpA	367.0 / 322.0	2.29	697390.72	998.19	2214.2	False	13C2-PFOA	874062.83	1250.00		N/A	N/A	✓
13C8-PFOA	421.0 / 376.0	2.68	685284.70	991.89	2207.1	False	13C2-PFOA	874062.83	1250.00		N/A	N/A	✓
13C9-PFNA	472.0 / 427.0	3.05	736889.72	1083.82	3135.8	False	13C2-PFOA	874062.83	1250.00		N/A	N/A	✓
13C6-PFDA	519.0 / 474.0	3.39	726834.79	1117.98	4399.8	False	13C2-PFDA	792587.30	1250.00		N/A	N/A	✓
13C7-PFUnA	570.0 / 525.0	3.69	773344.01	1129.59	5761.2	False	13C2-PFDA	792587.30	1250.00		N/A	N/A	✓
13C2-PFTeDA	715.0 / 670.0	4.40	779588.20	968.61	19082.6	False	13C2-PFDA	792587.30	1250.00		N/A	N/A	✓
13C3-PFBS	302.0 / 99.0	1.57	138929.29	963.06	1915.9	False	13C4-PFOS	145198.07	1195.00		N/A	N/A	✓
13C3-PFHxS	402.0 / 99.0	2.31	132505.64	956.24	1426.9	False	13C4-PFOS	145198.07	1195.00		N/A	N/A	✓
13C8-PFOS	507.0 / 99.0	3.05	138341.49	1105.72	1311.8	False	13C4-PFOS	145198.07	1195.00		N/A	N/A	✓
13C3-HFPO-DA	287.0 / 169.0	2.01	355622.47	865.64	2525.4	False	13C2-PFOA	874062.83	1250.00		N/A	N/A	✓

Chromatograms



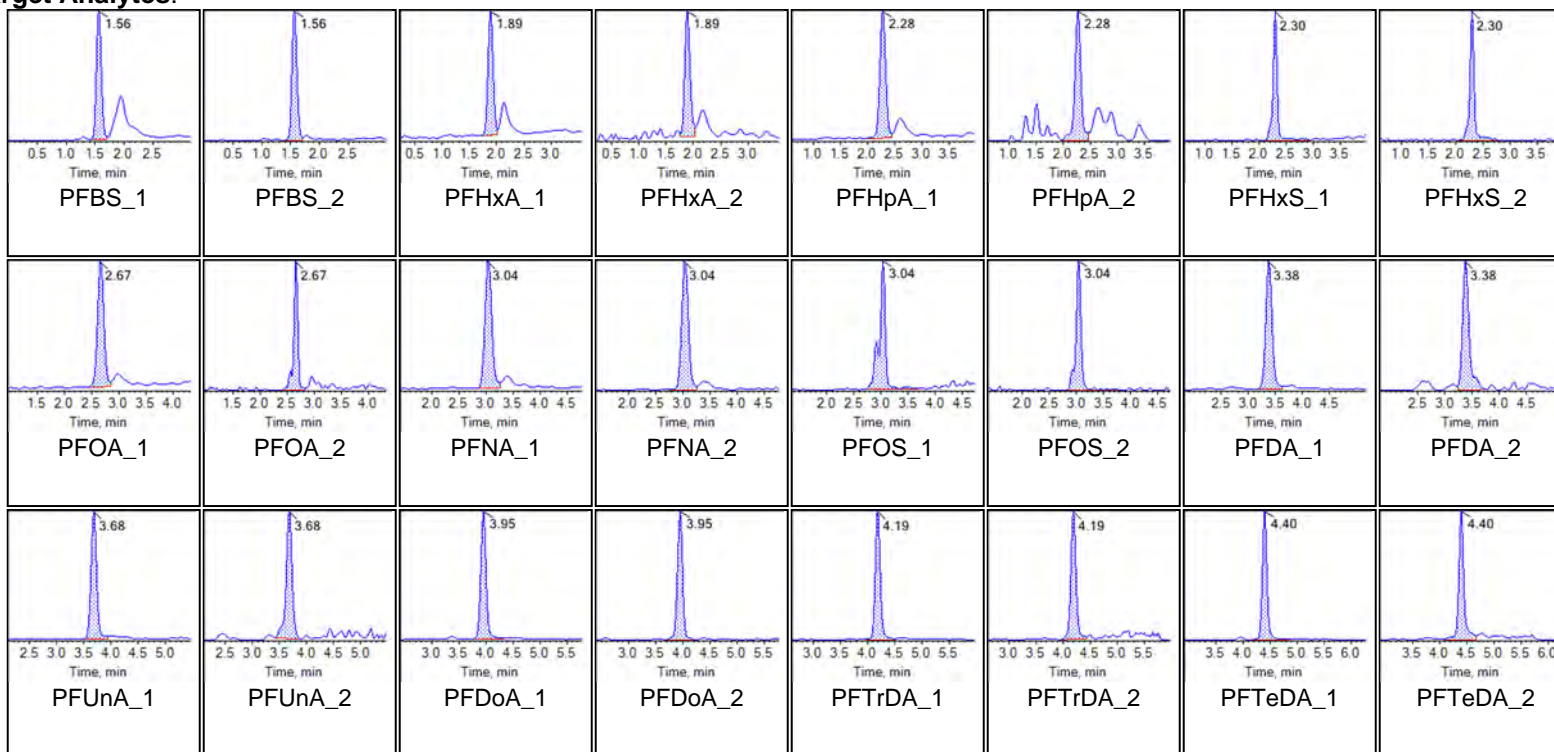
Chromatogram Report

Created with Analyst Reporter
Printed: 12/11/2020 4:03:03 PM

Sample Name	LD74	Injection Vial	2
Sample ID	L1	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455

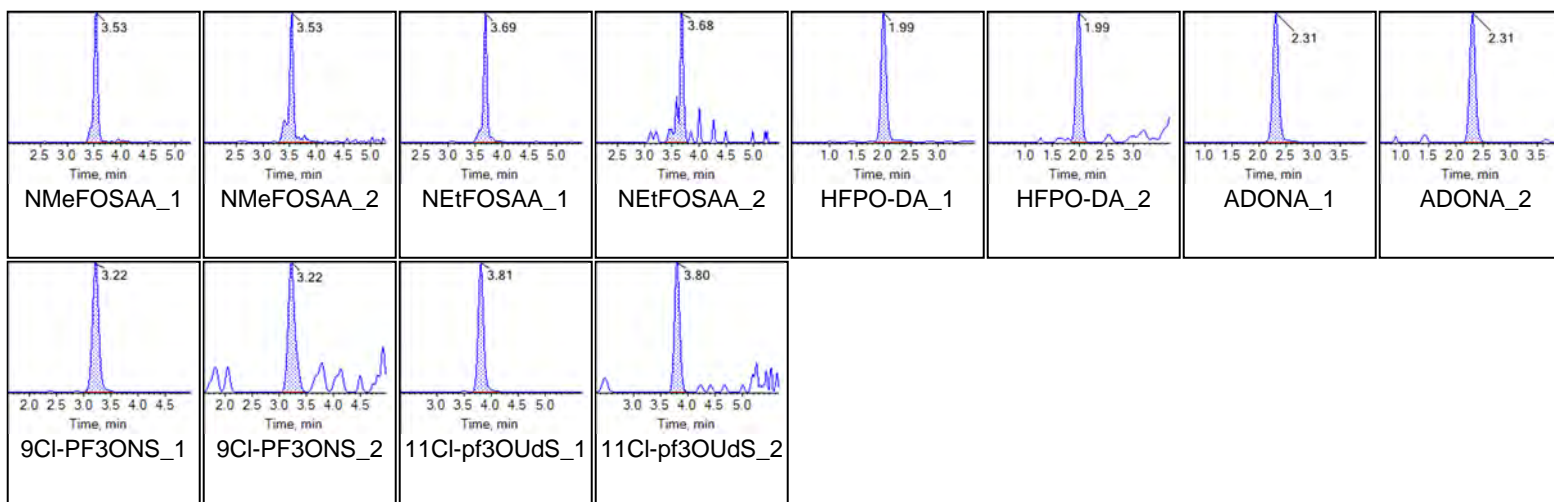
Chromatograms

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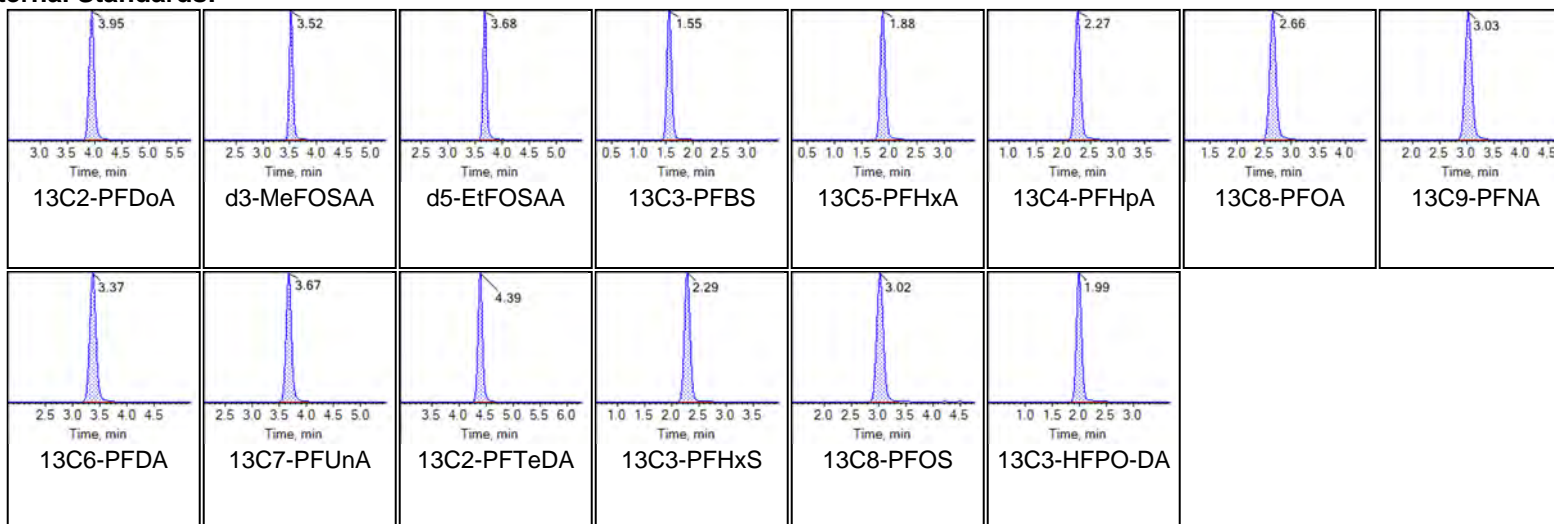




Chromatogram Report

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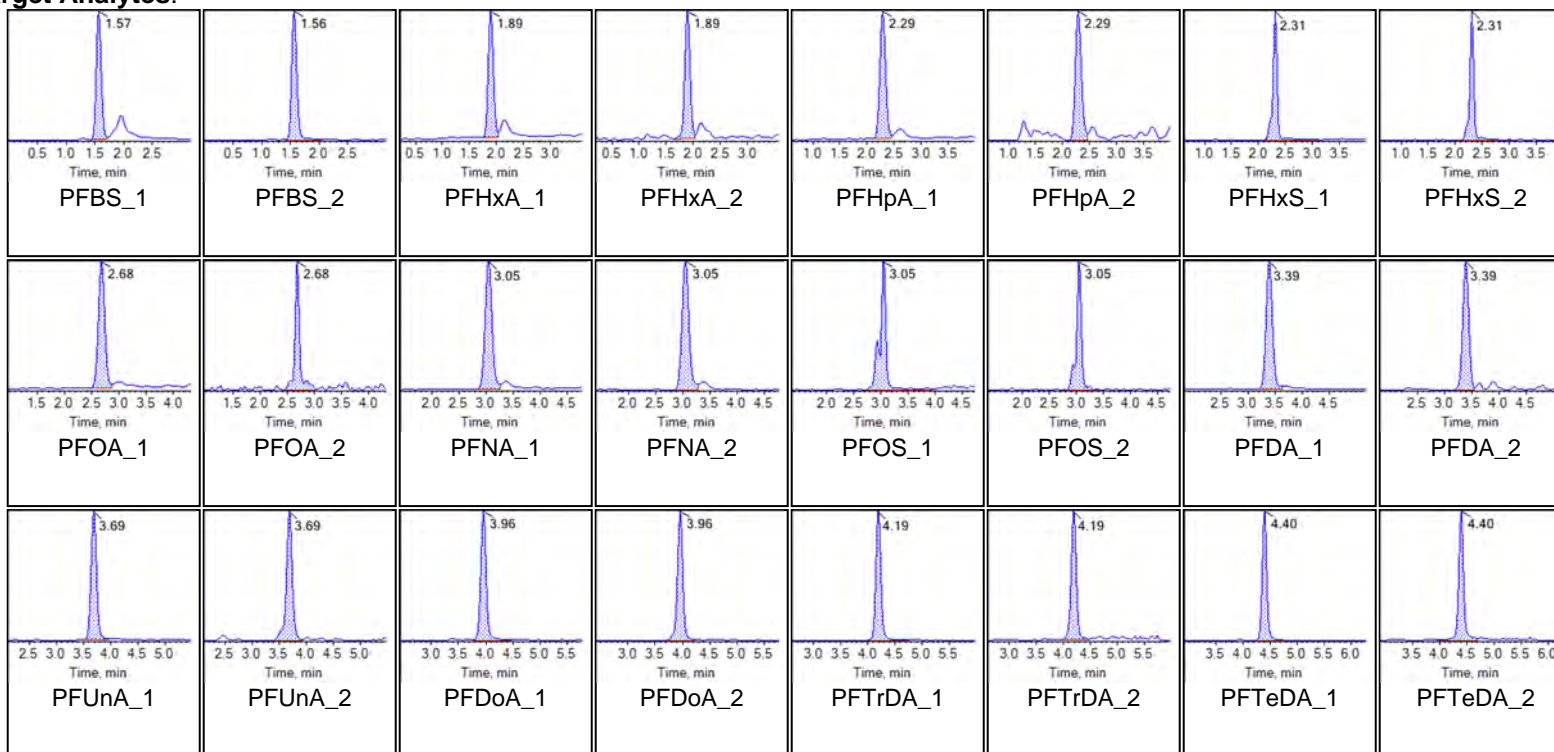
Internal Standards:



Sample Name	LD75	Injection Vial	3
Sample ID	L2	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:29:49 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455

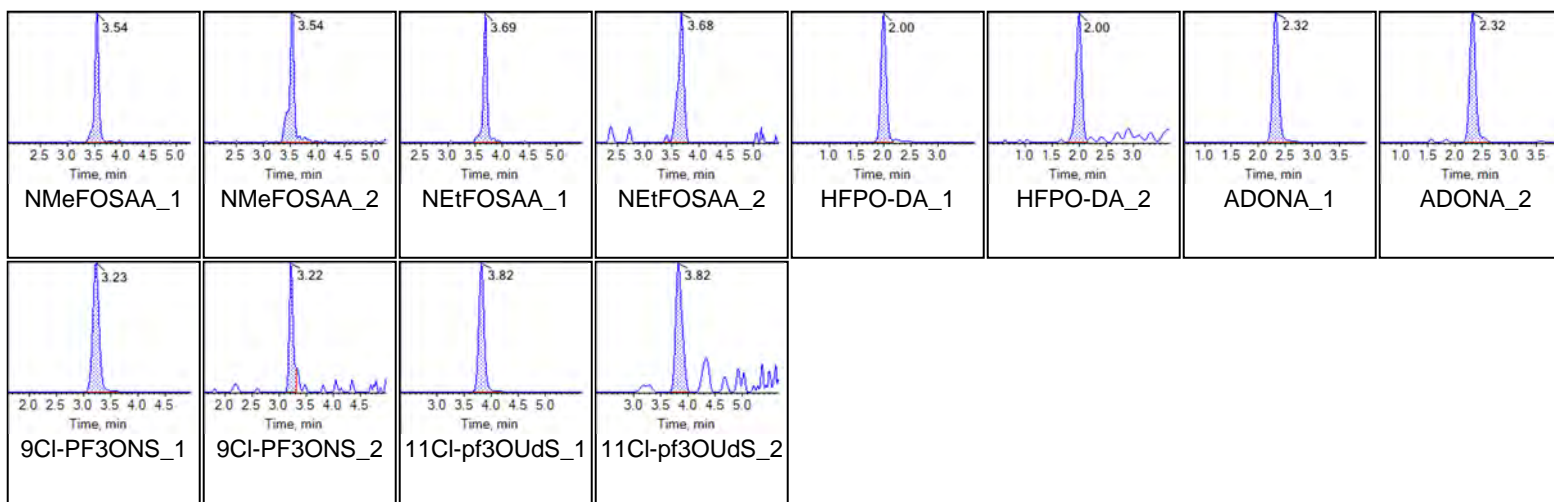
Chromatograms

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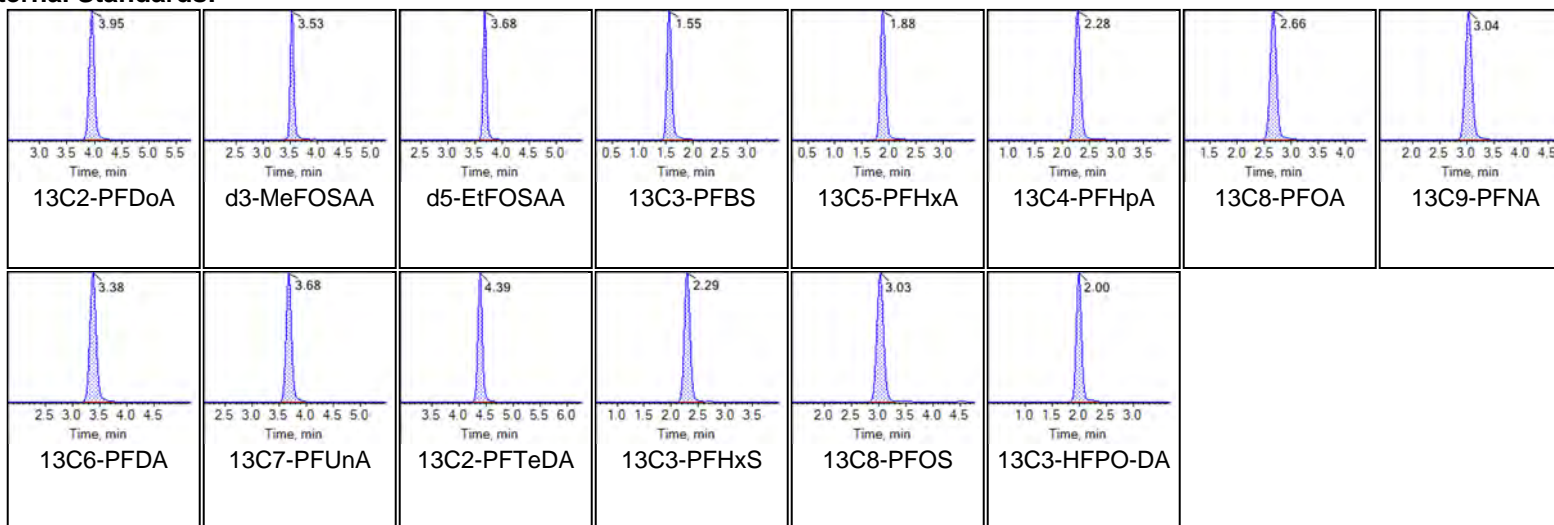




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Internal Standards:





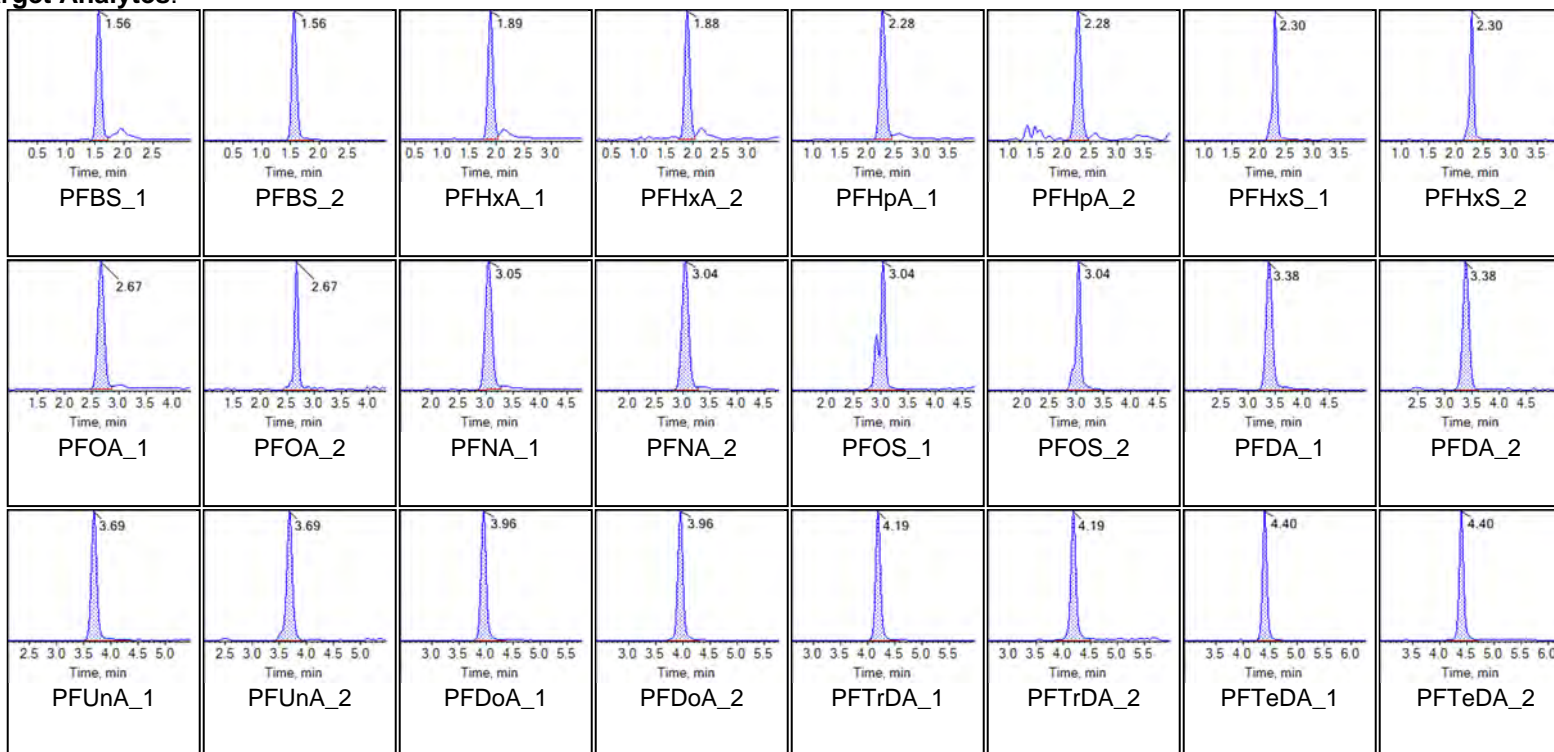
Chromatogram Report

Created with Analyst Reporter
Printed: 12/11/2020 4:03:03 PM

Sample Name	LD76	Injection Vial	4
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:40:39 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455

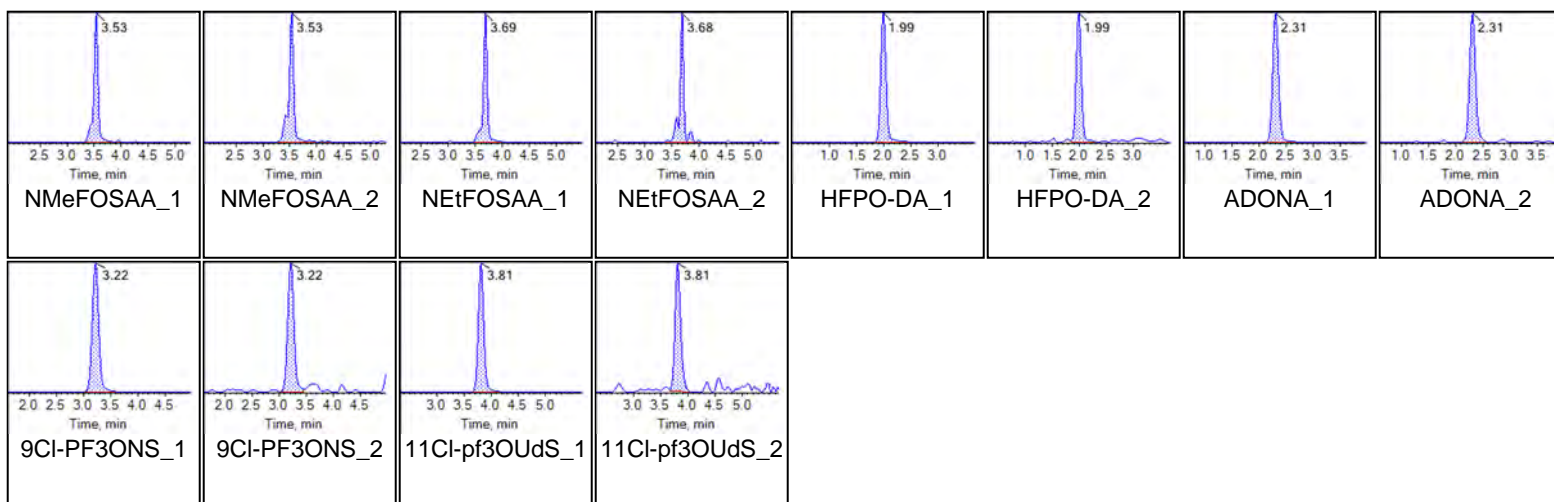
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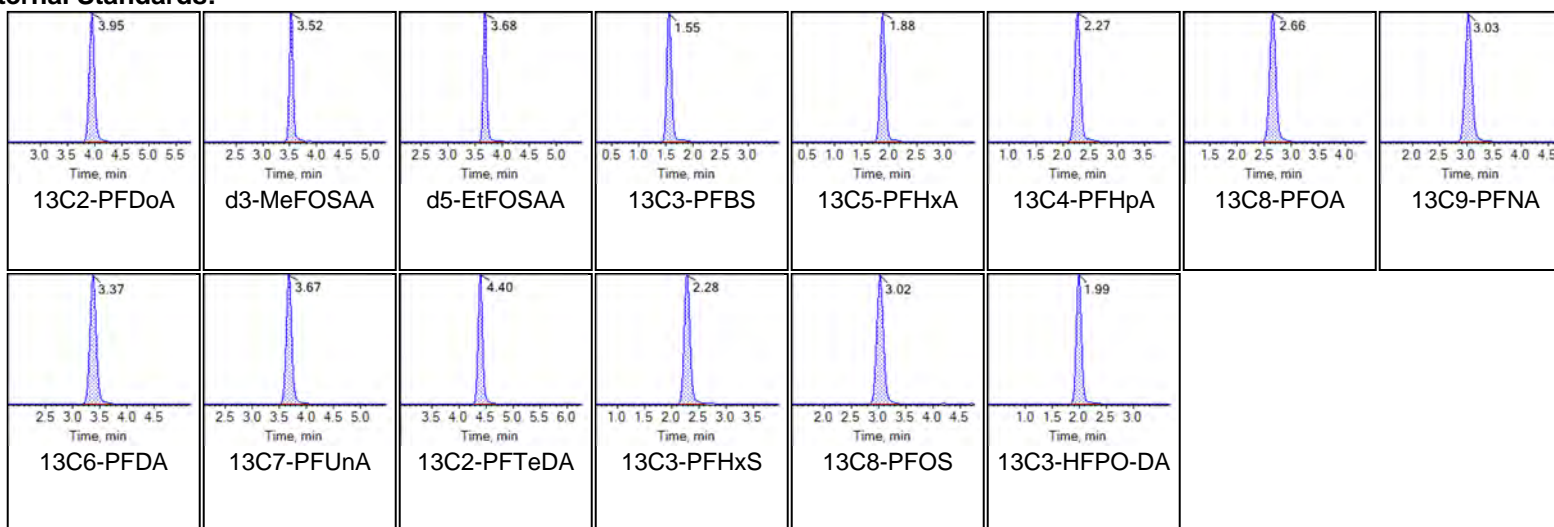




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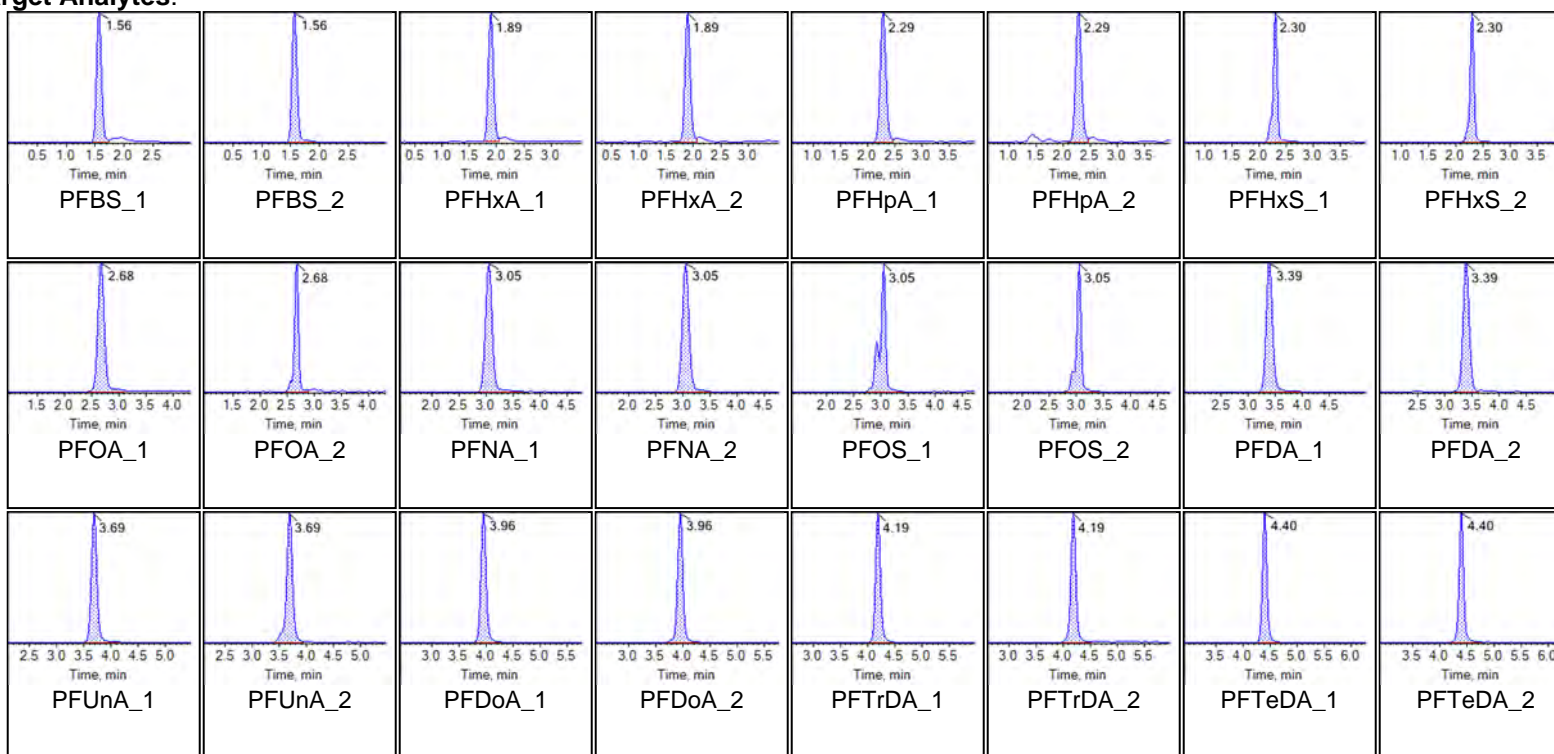
Chromatogram Report

Created with Analyst Reporter
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Sample Name	LD77	Injection Vial	5
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:51:31 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455

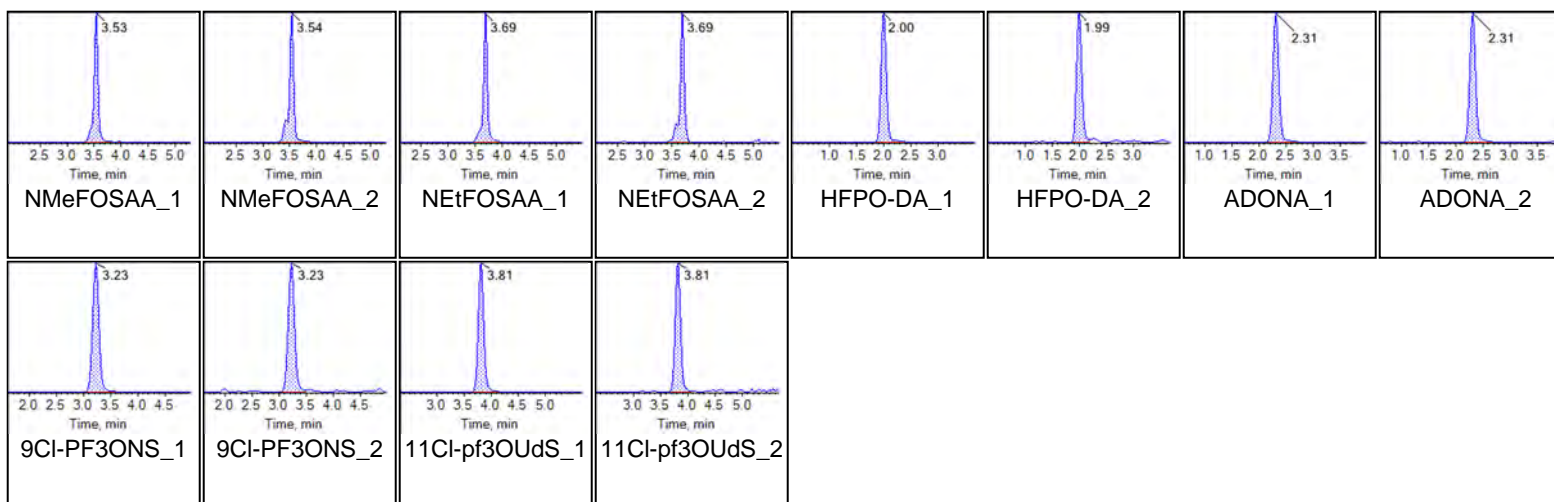
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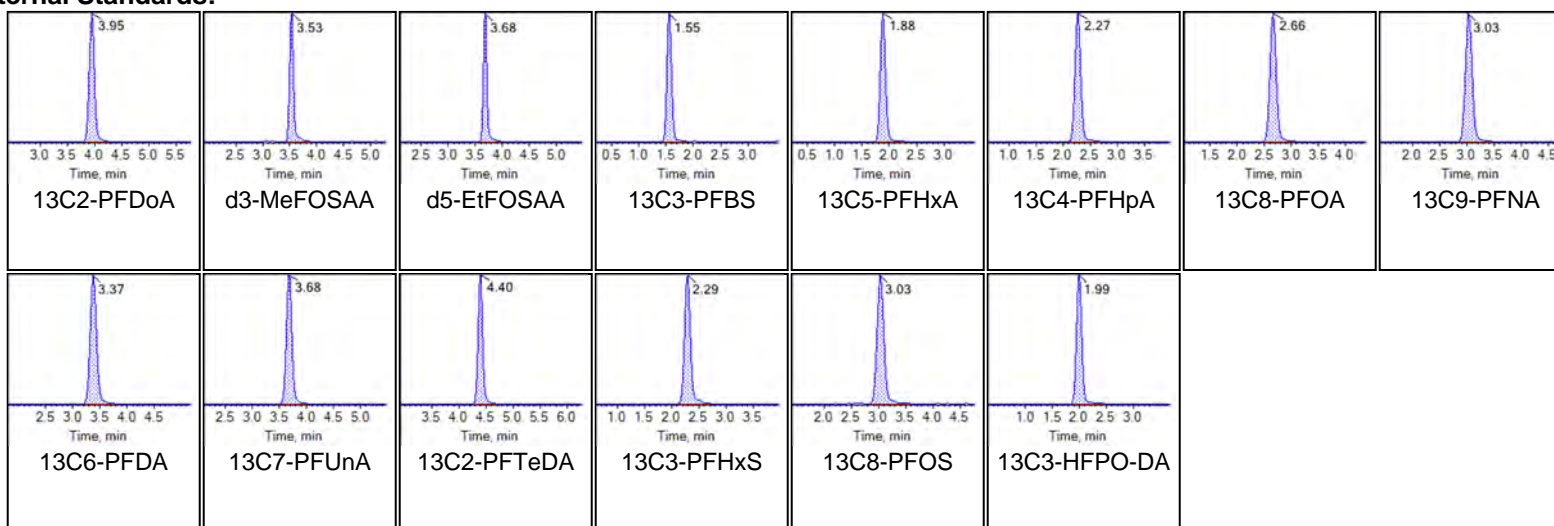




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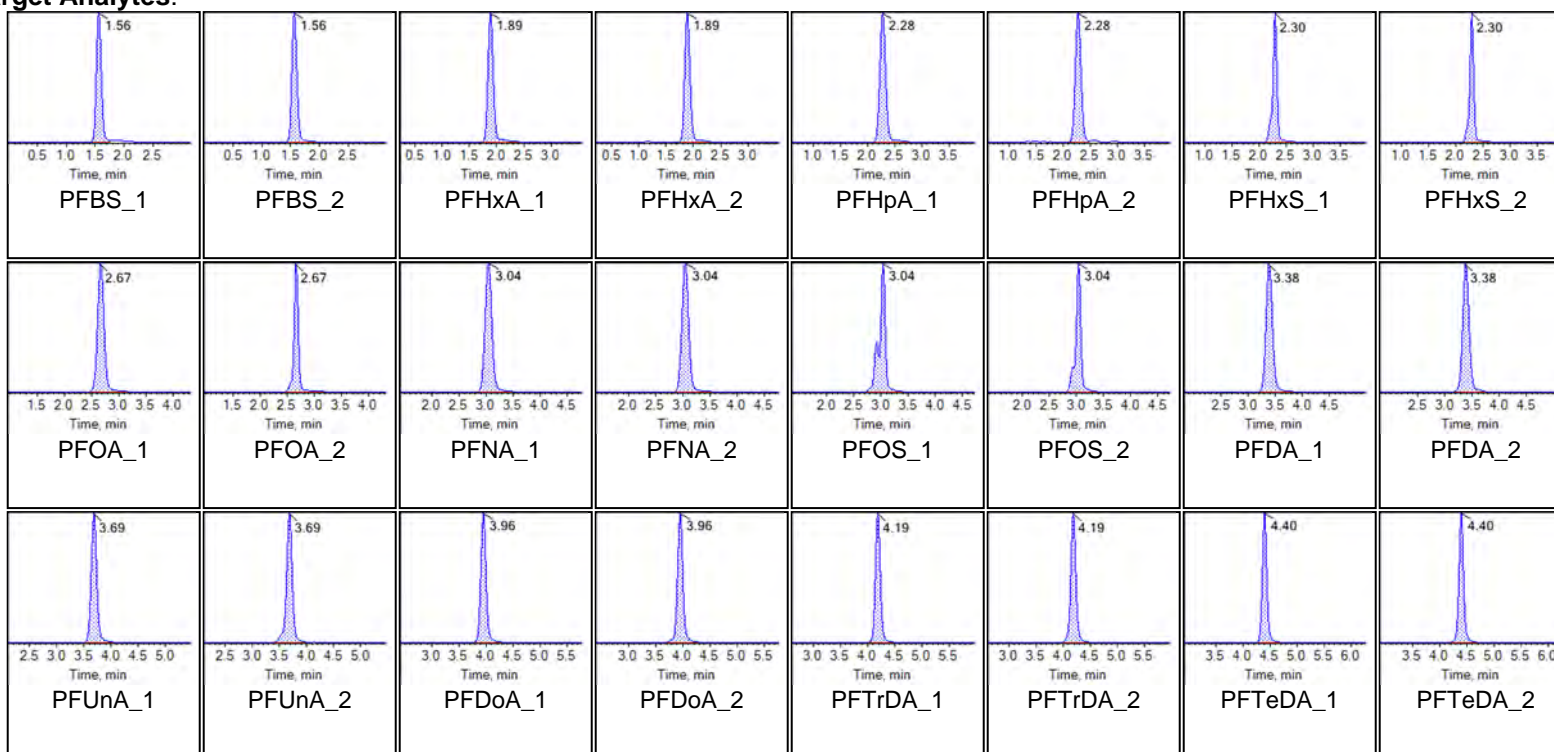
Chromatogram Report

Created with Analyst Reporter
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Sample Name	LD78	Injection Vial	6
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:02:22 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455

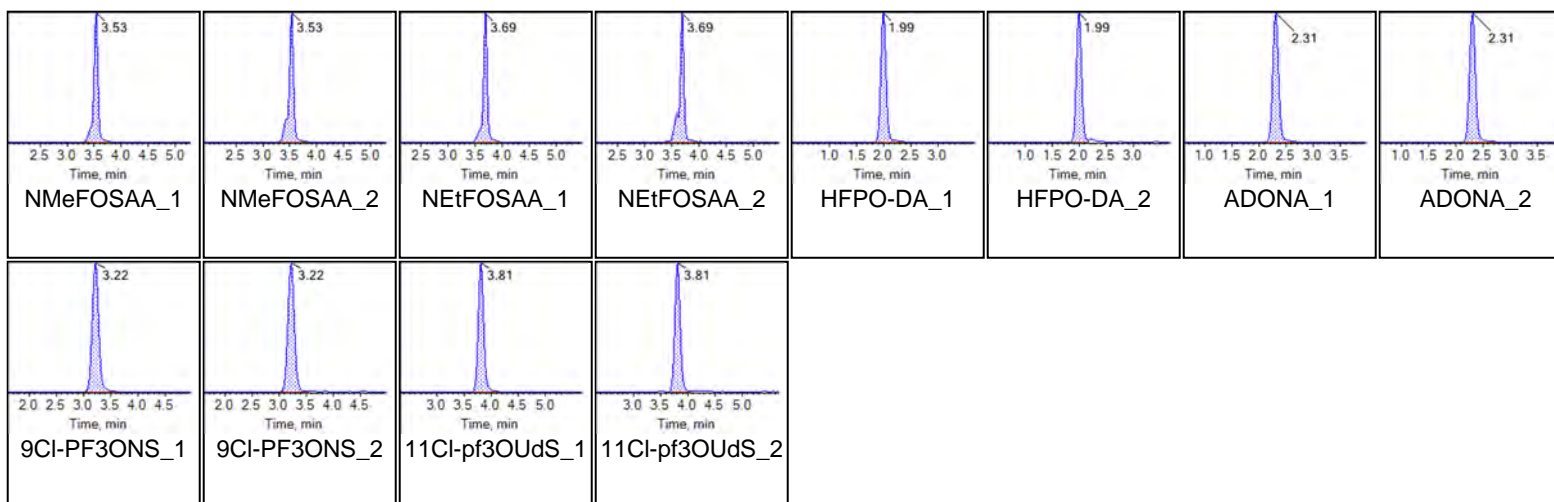
Chromatograms

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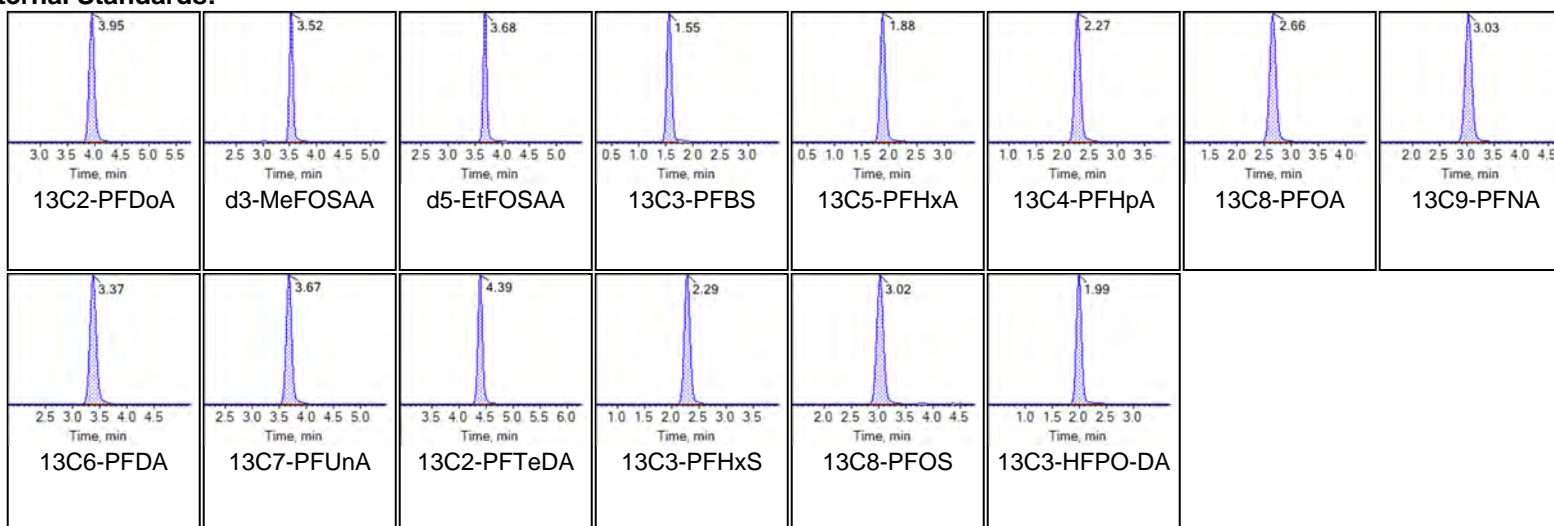




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Internal Standards:





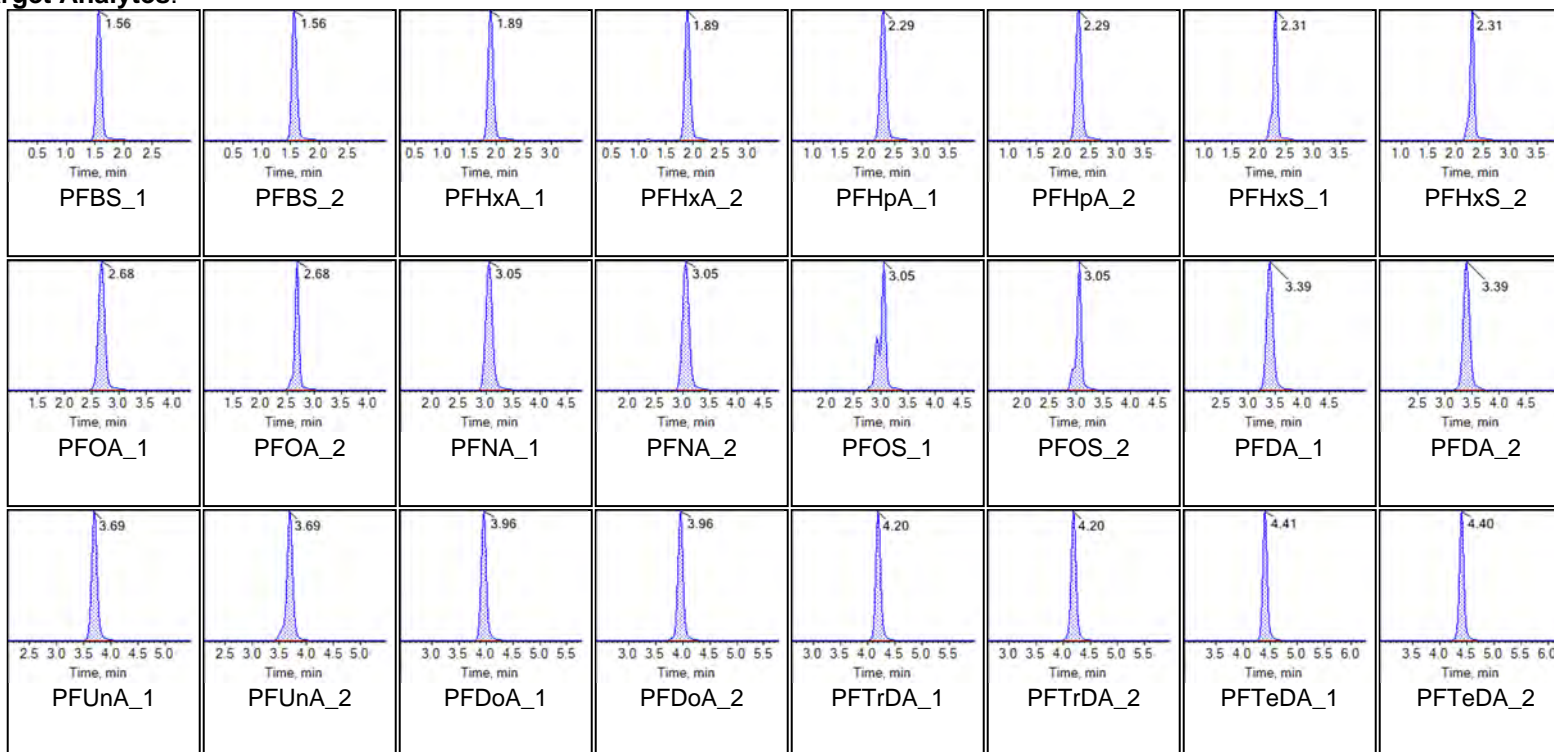
Chromatogram Report

Created with Analyst Reporter
Printed: 12/11/2020 4:03:03 PM

Sample Name	LD79	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:13:13 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455

Chromatograms

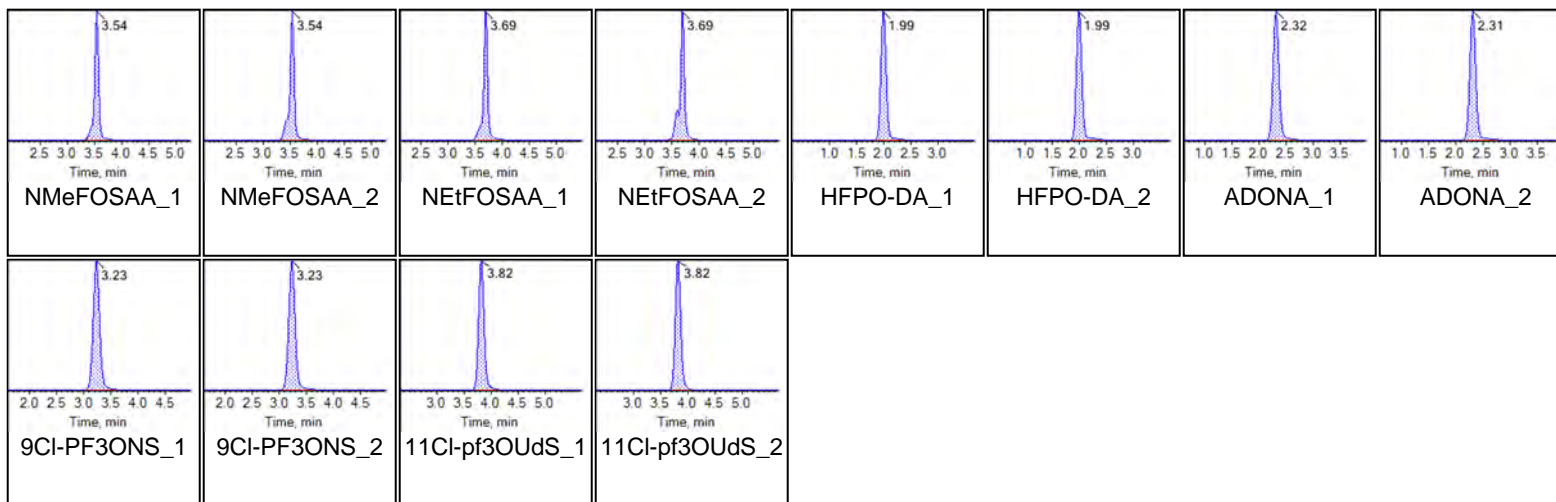
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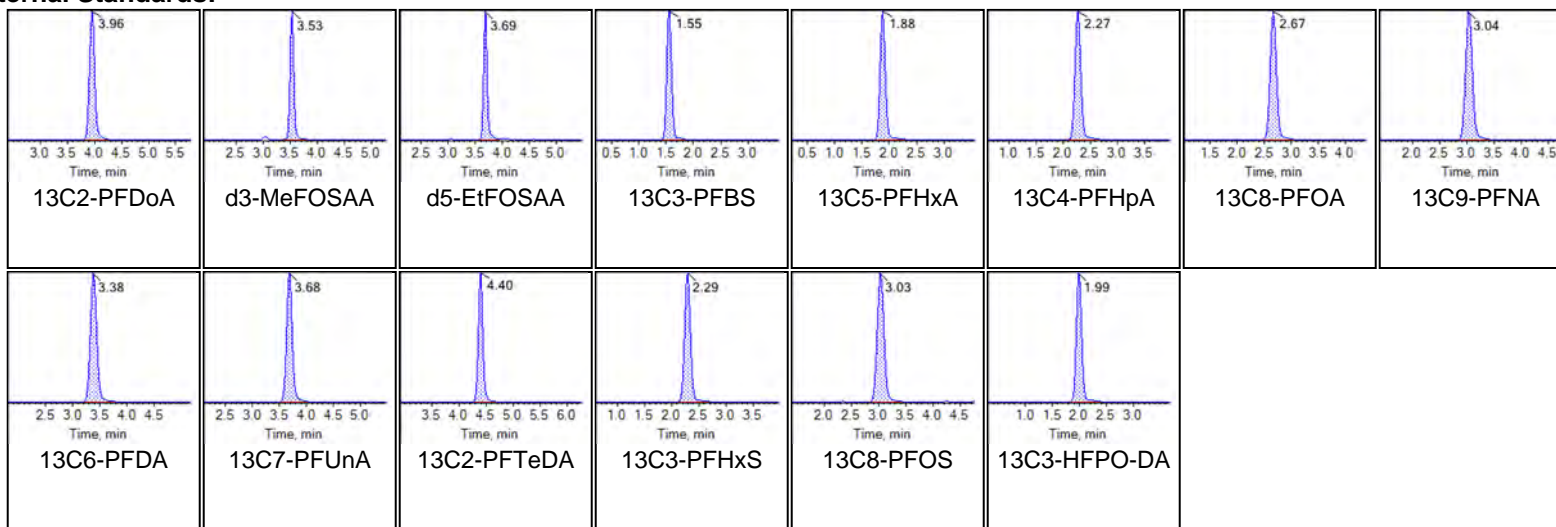


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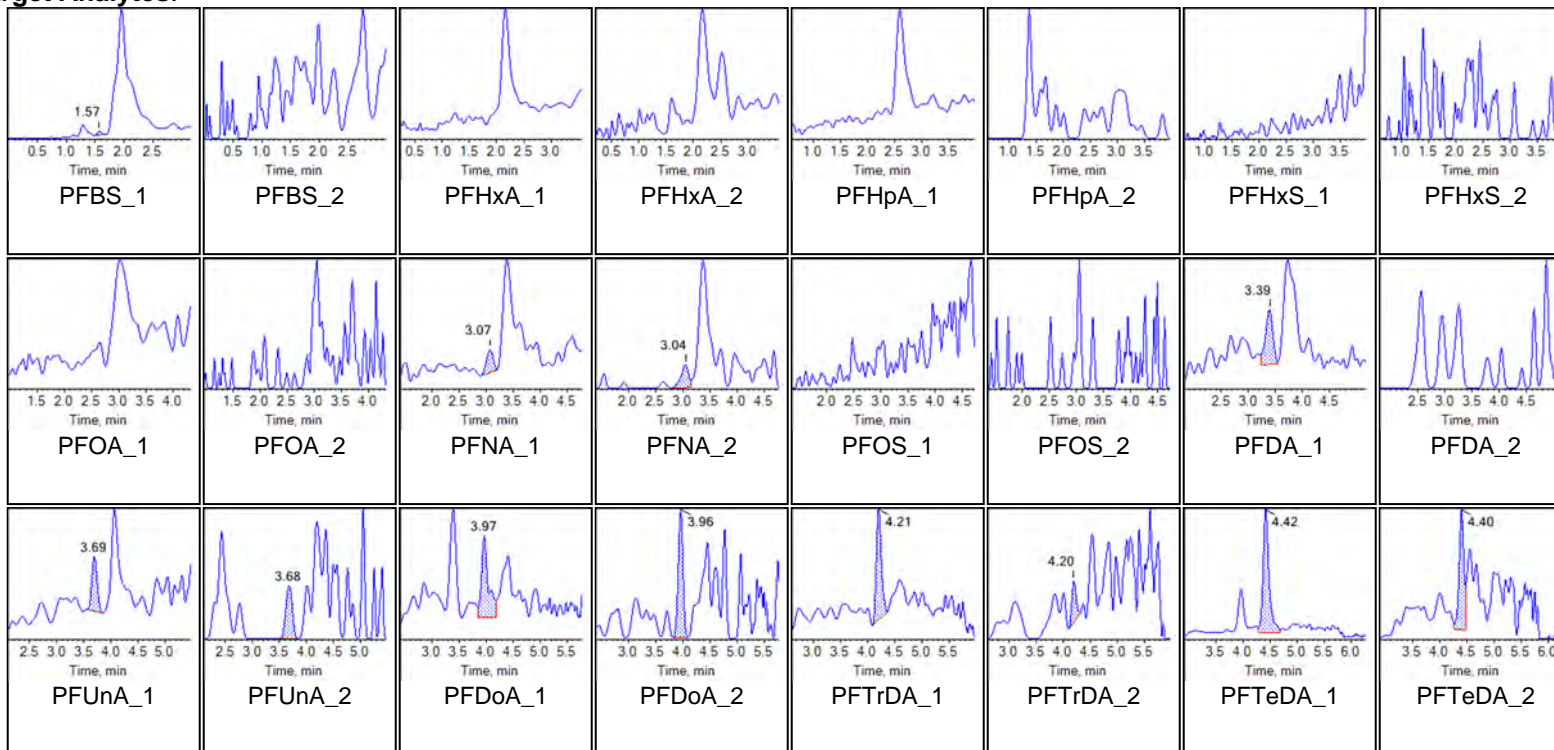
Chromatogram Report

Created with Analyst Reporter
 Printed: 12/11/2020 4:03:03 PM

Sample Name	LD80 IB	Injection Vial	8
Sample ID	Instrument Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:24:05 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455

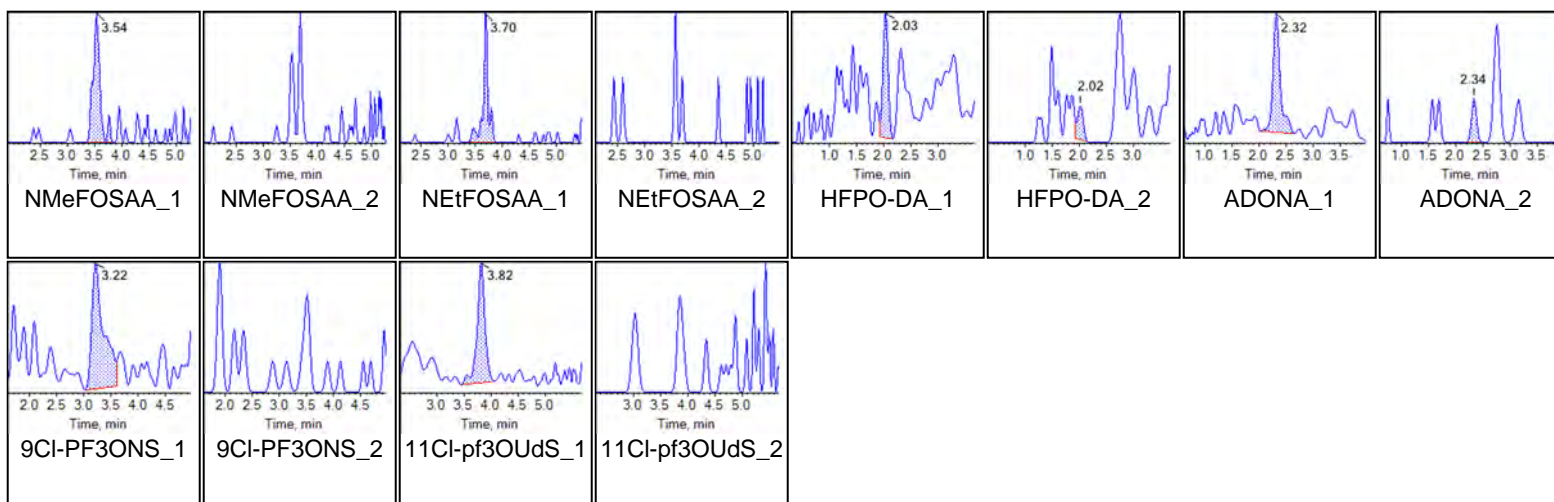
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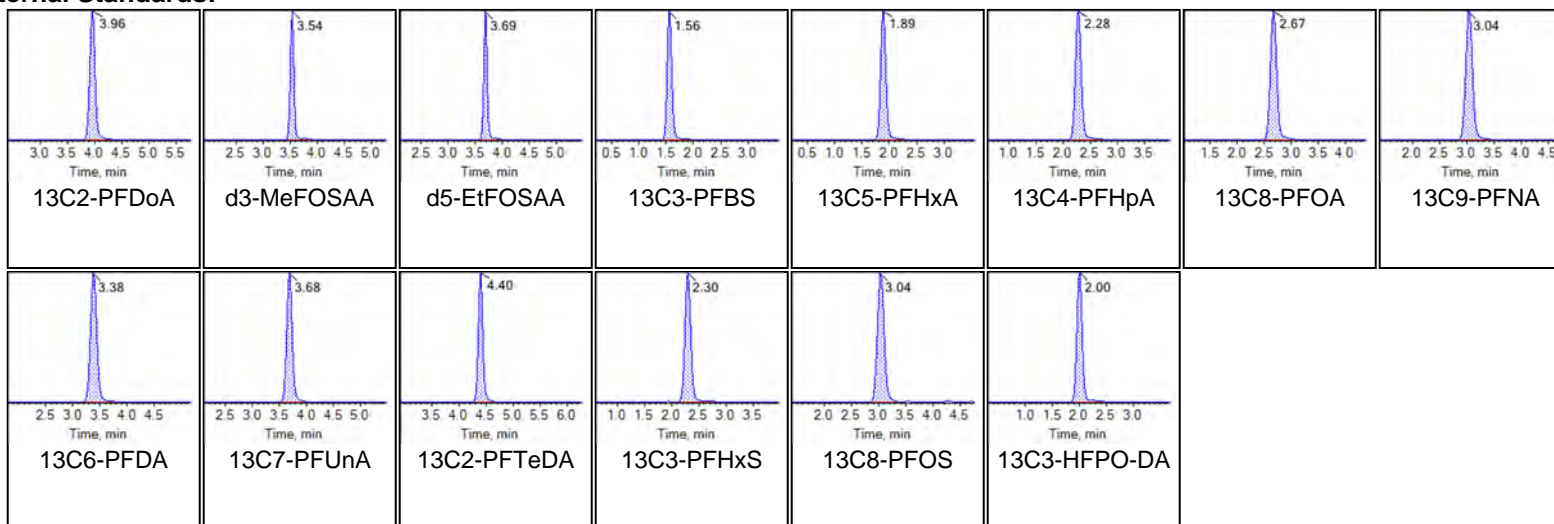




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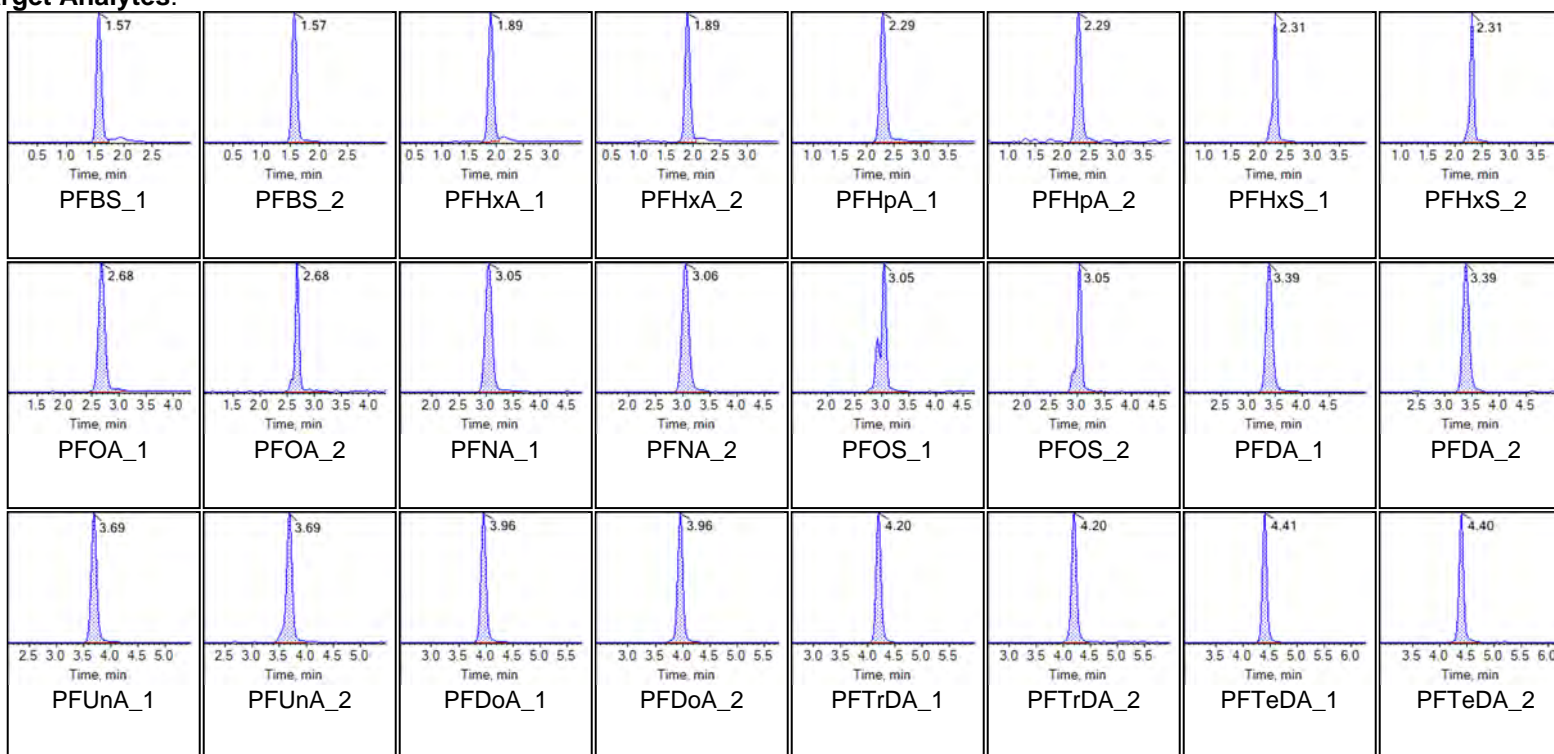
Chromatogram Report

Created with Analyst Reporter
Printed: 12/11/2020 4:03:03 PM

Sample Name	LD81 ICC	Injection Vial	9
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:34:56 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455

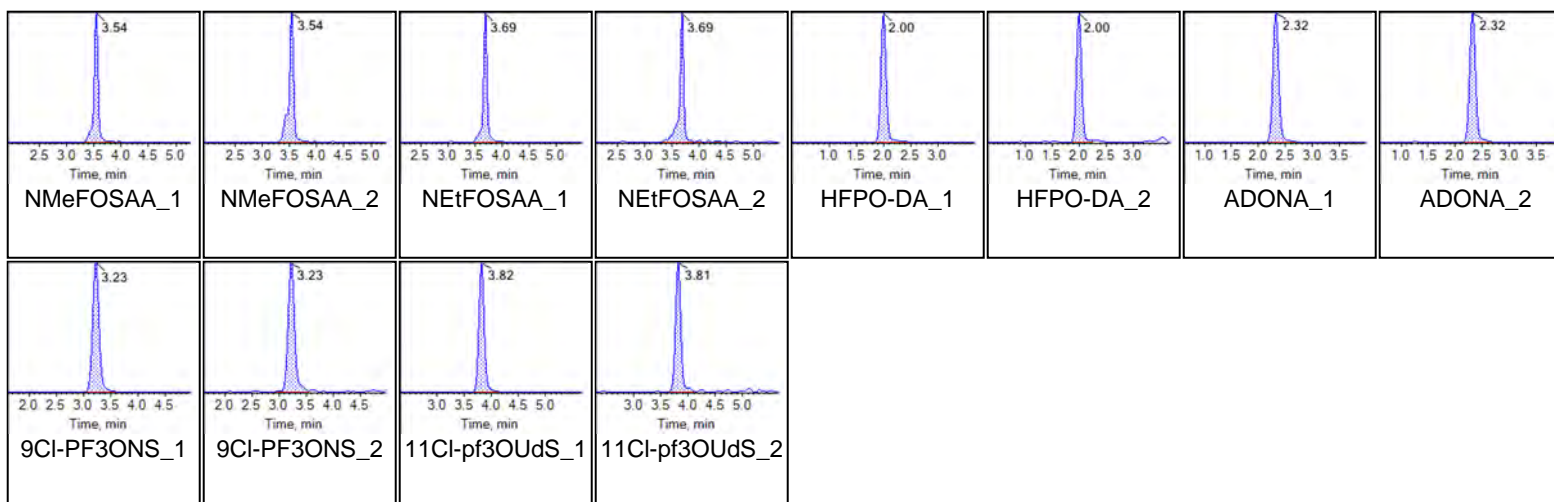
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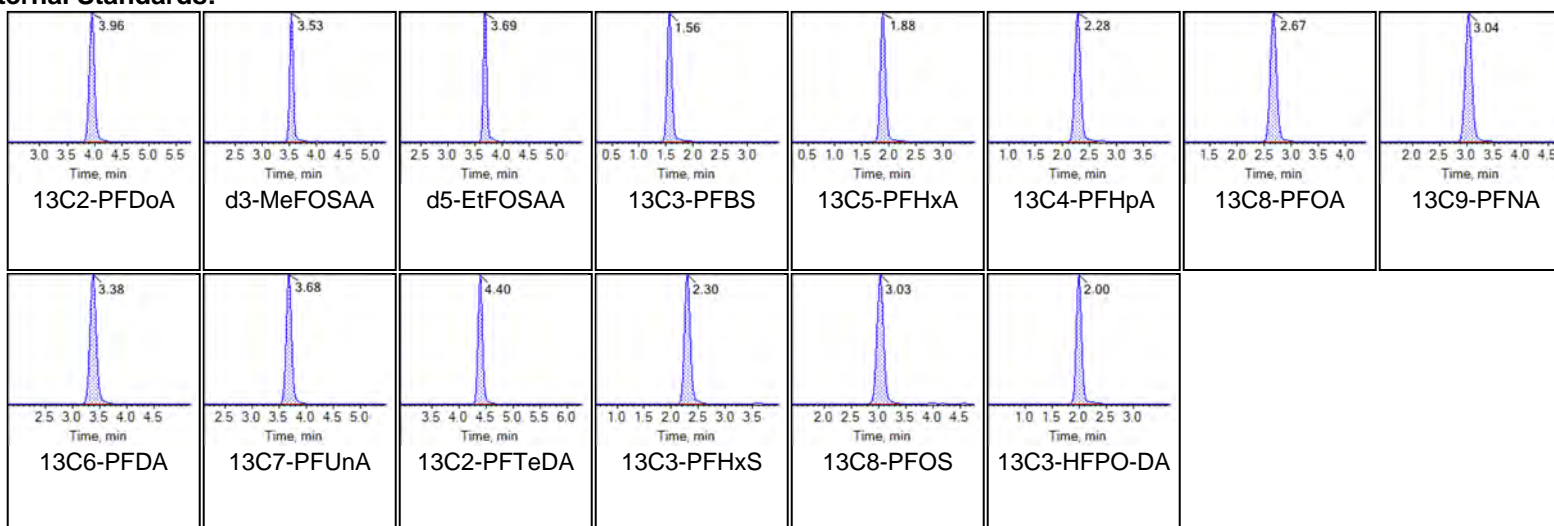




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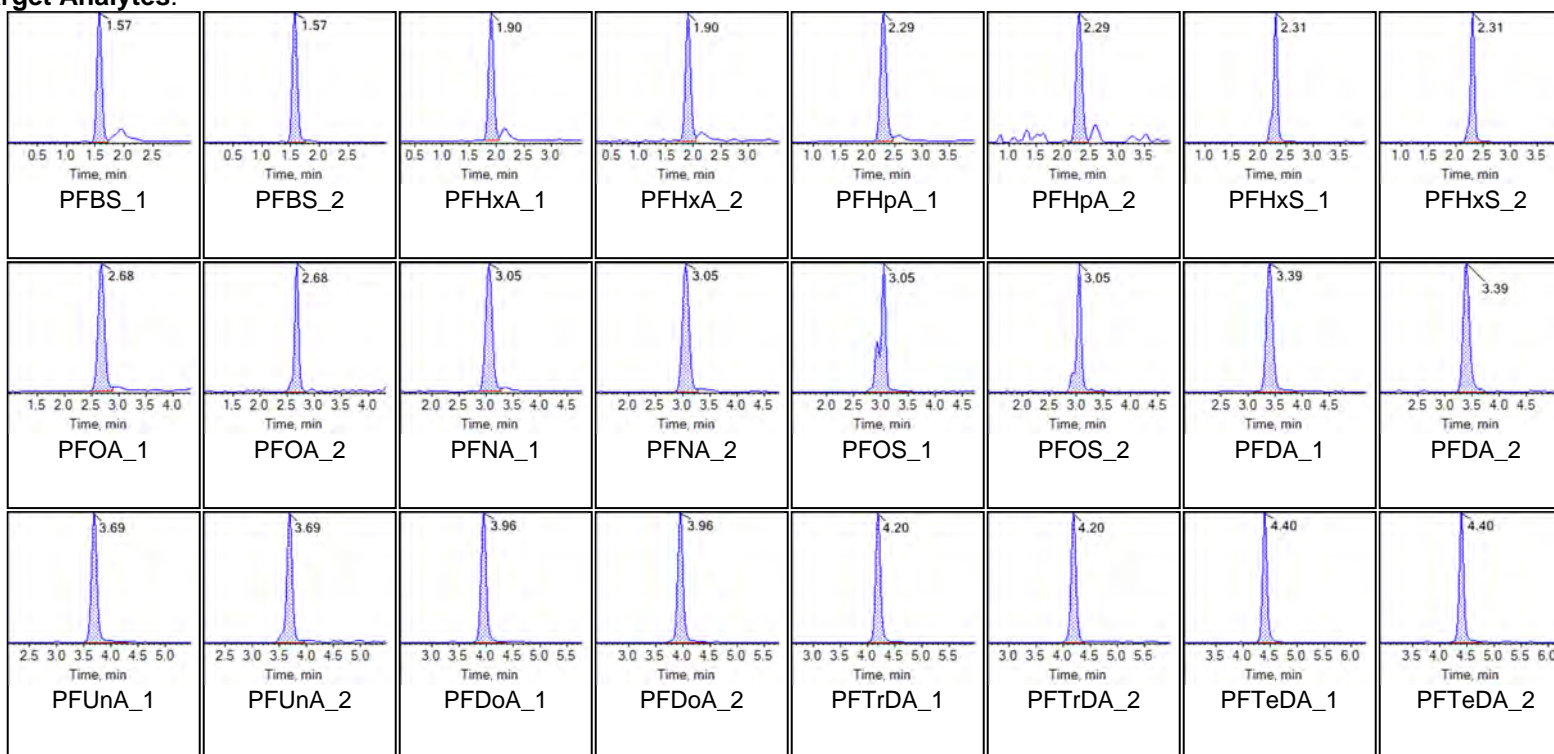
Chromatogram Report

Created with Analyst Reporter
Printed: 12/11/2020 4:03:03 PM

Sample Name	LD76 CCV	Injection Vial	2
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
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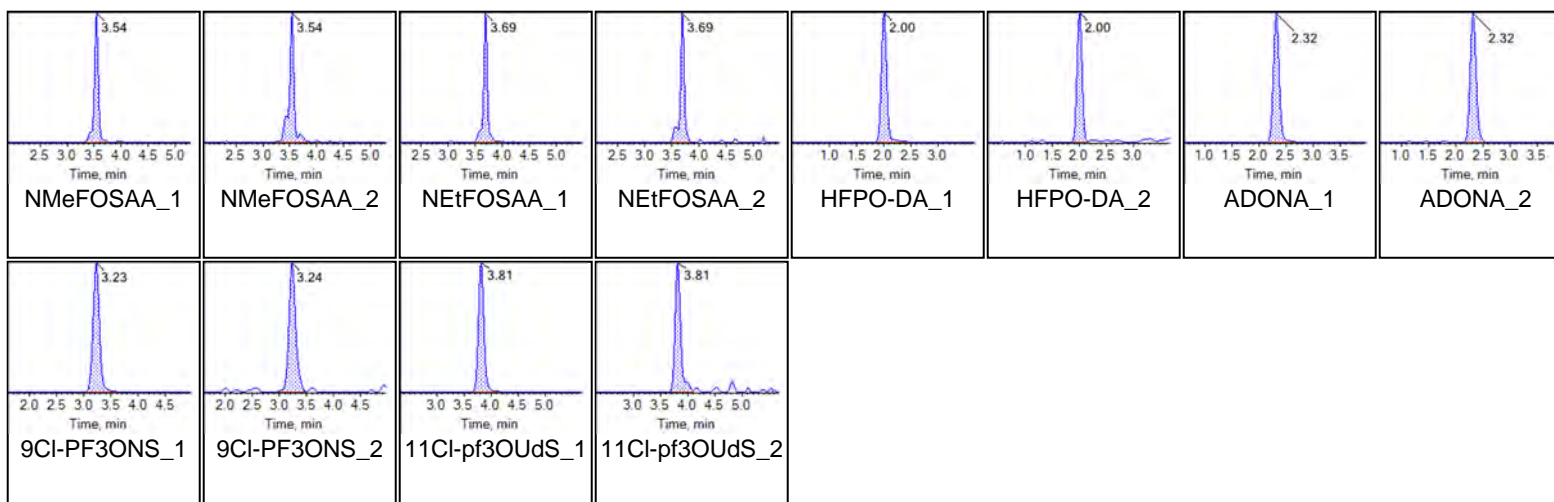
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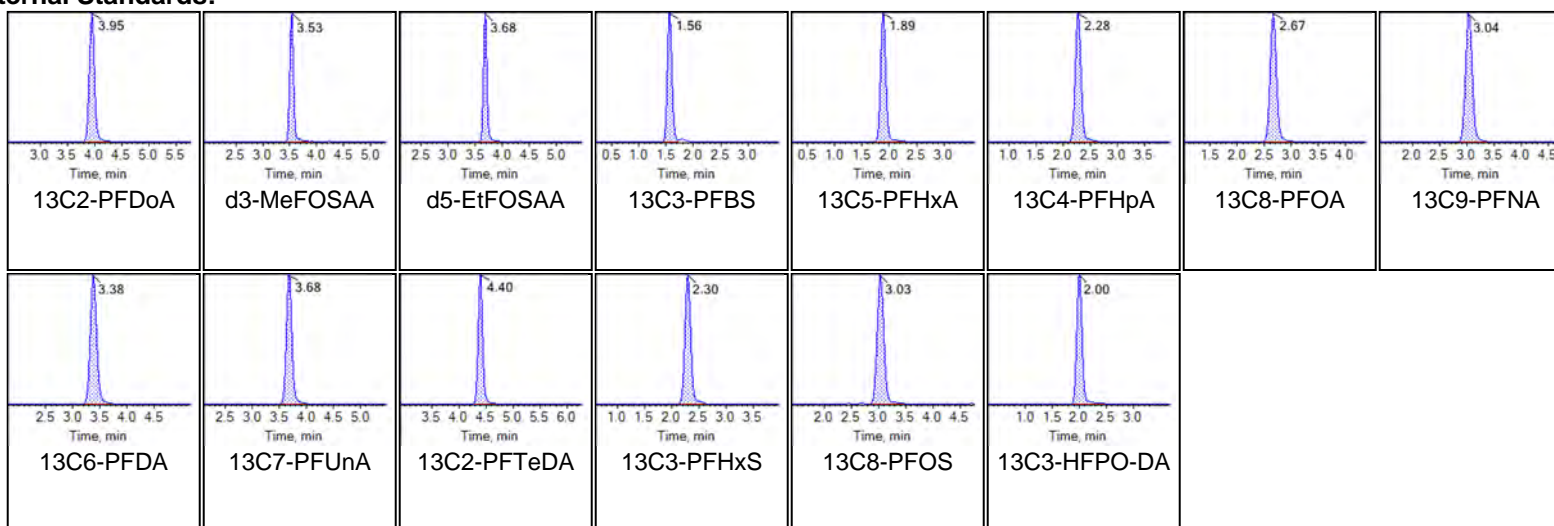




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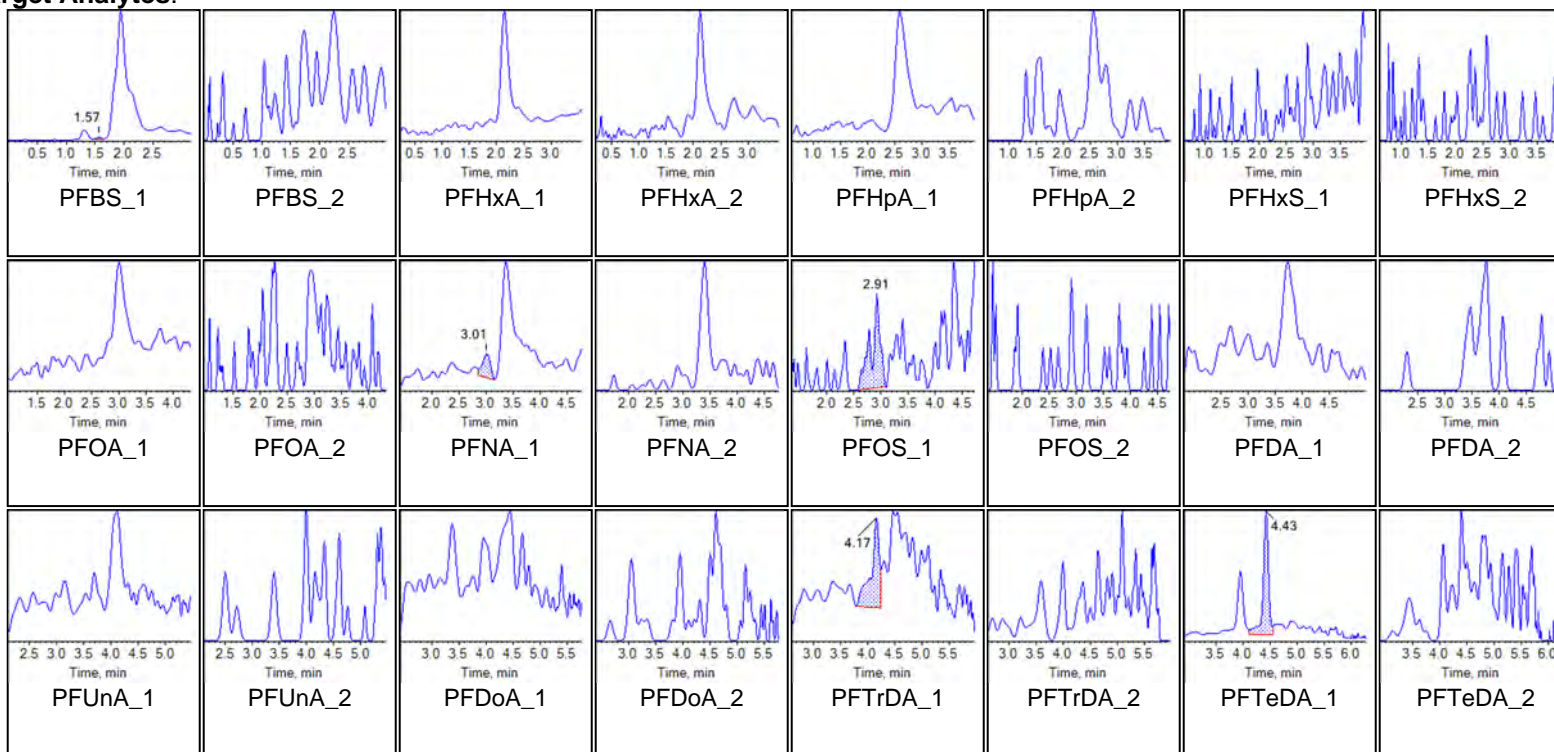
Chromatogram Report

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Sample Name	LD80 IB	Injection Vial	4
Sample ID	IB	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 9:54:37 AM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455

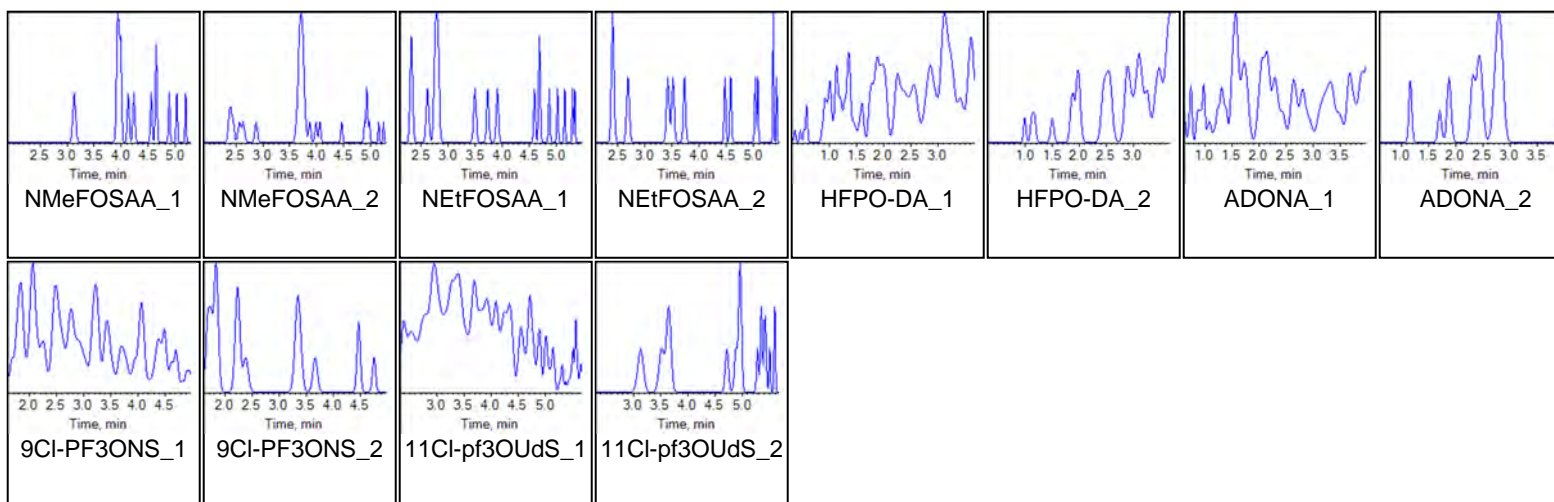
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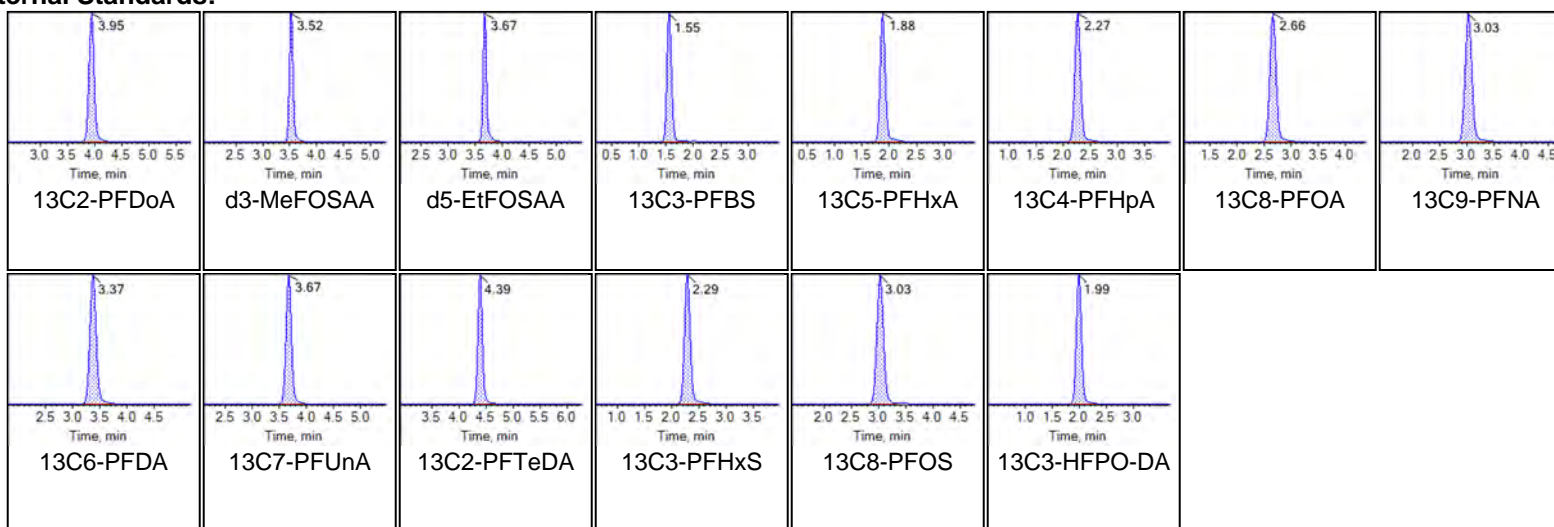




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Internal Standards:





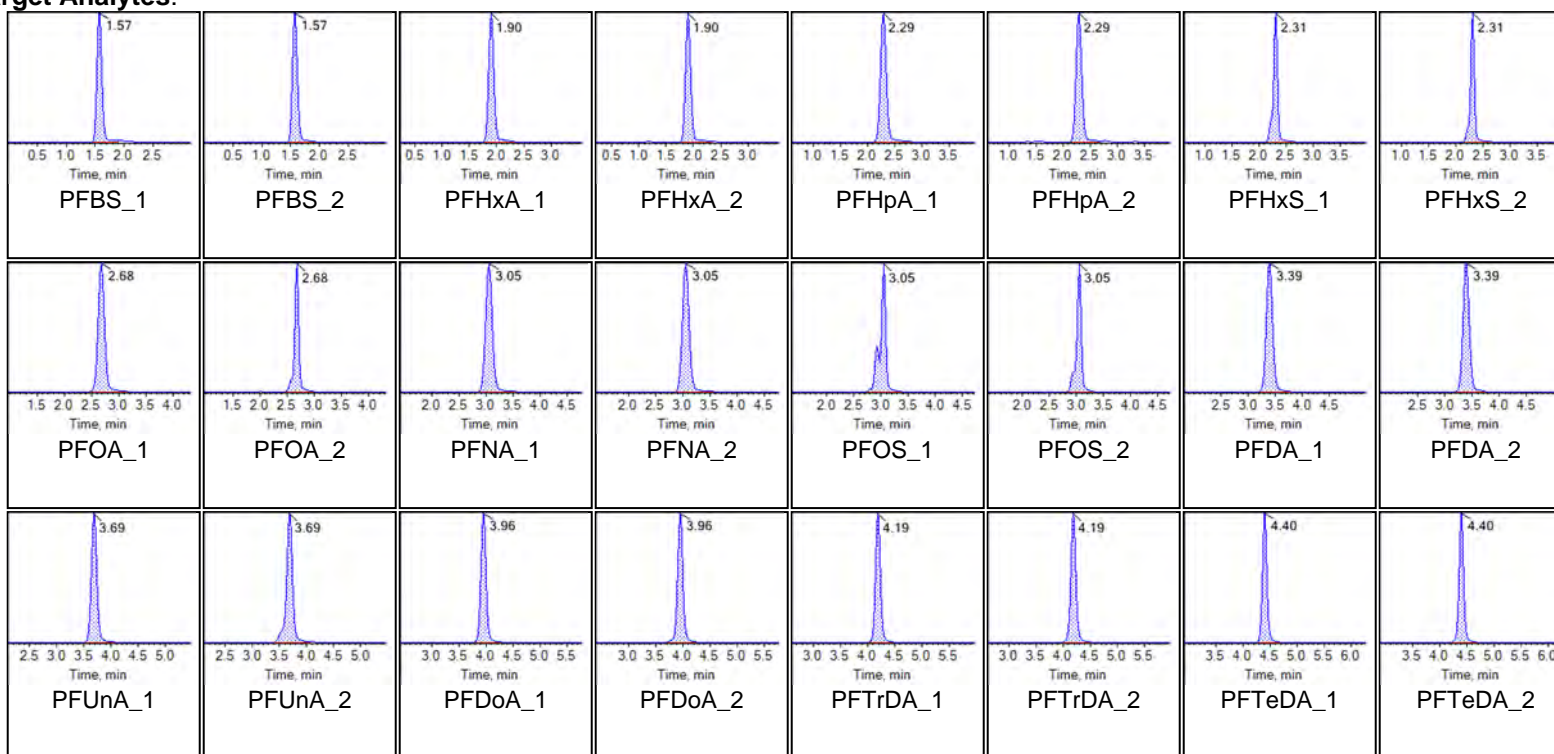
Chromatogram Report

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Sample Name	LD78 CCV	Injection Vial	21
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
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Acquisition Method	5-0369.dam	Result Table	20-1455

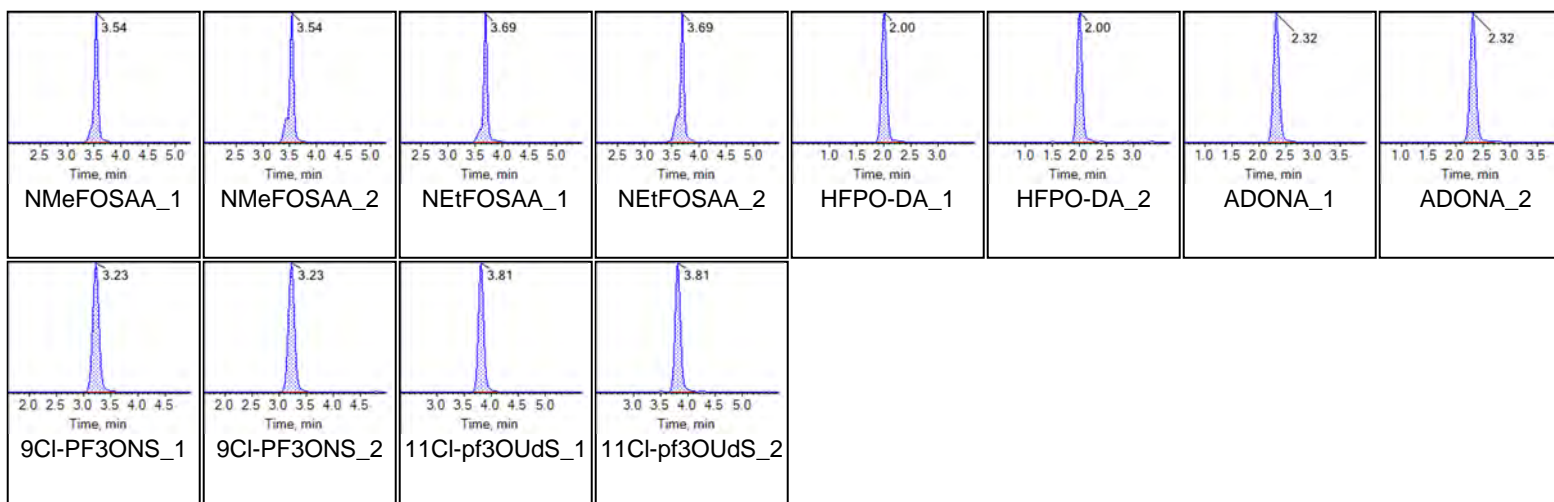
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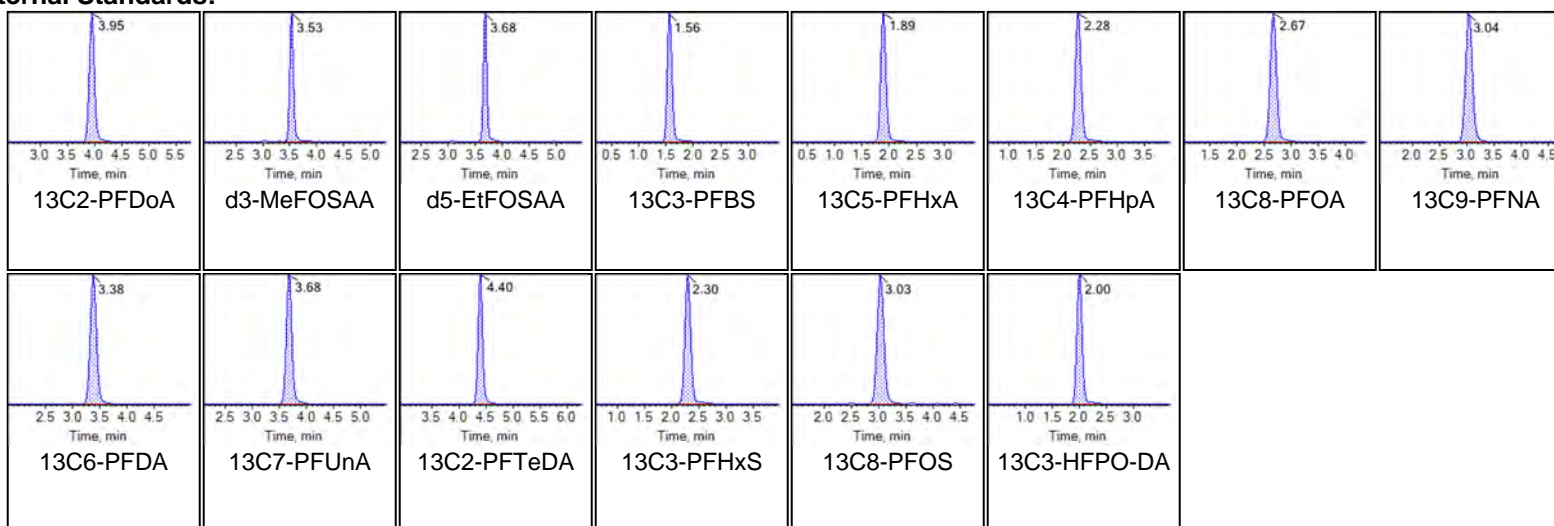




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Internal Standards:





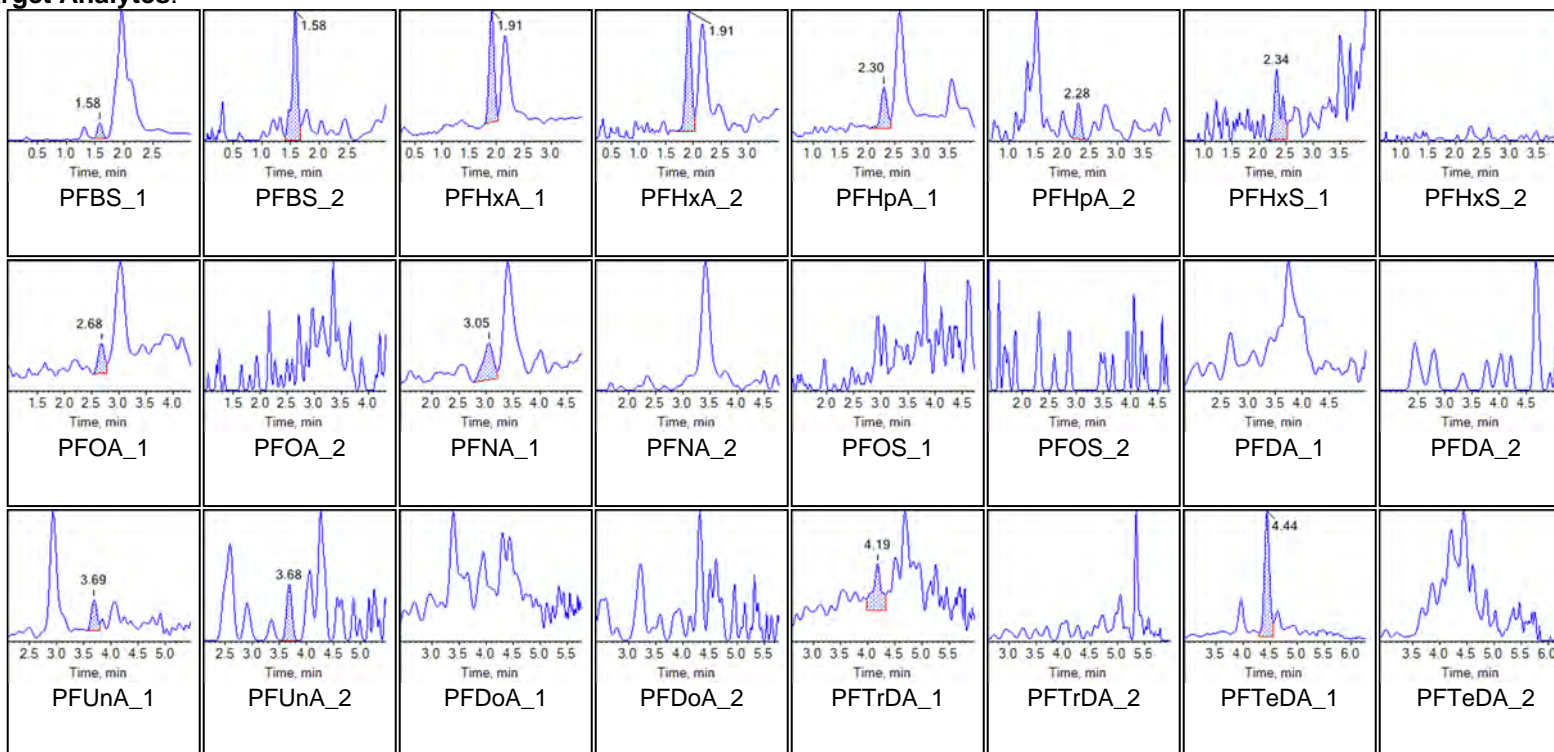
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Created with Analyst Reporter
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Sample Name	DB332PB-FS(0)	Injection Vial	23
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
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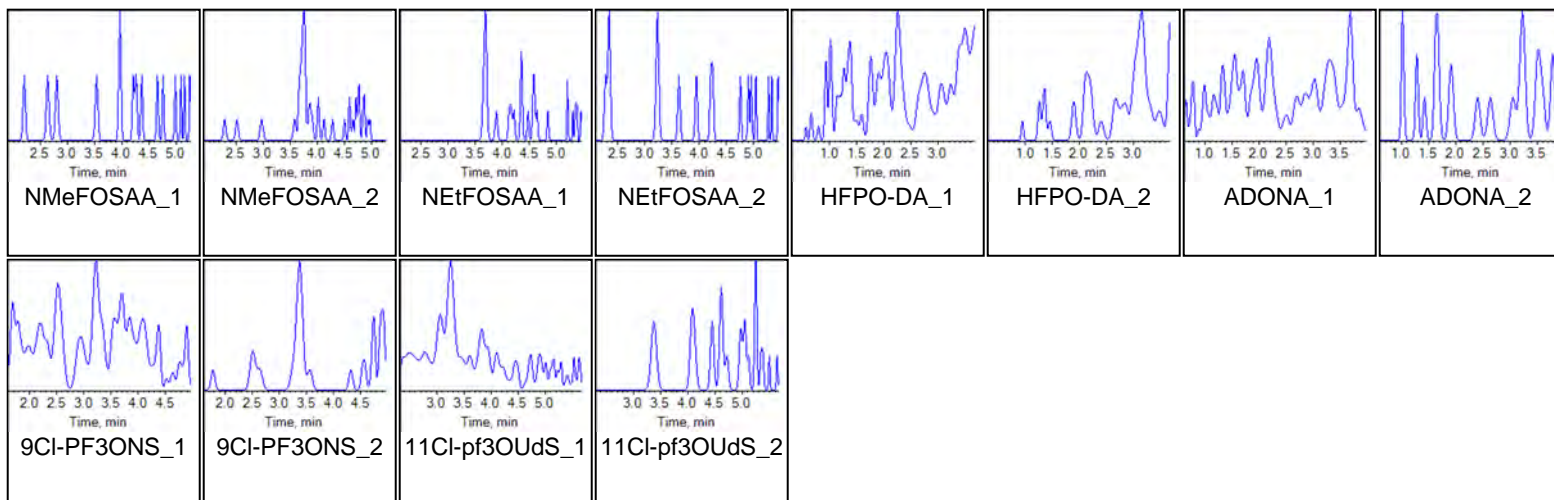
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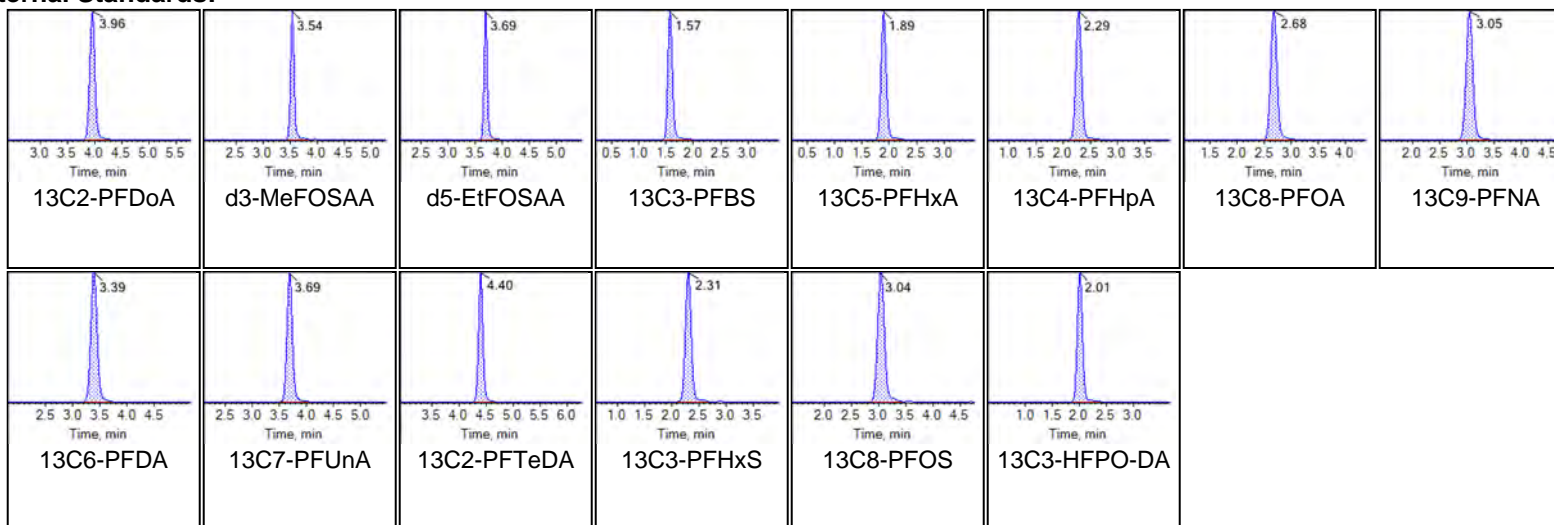




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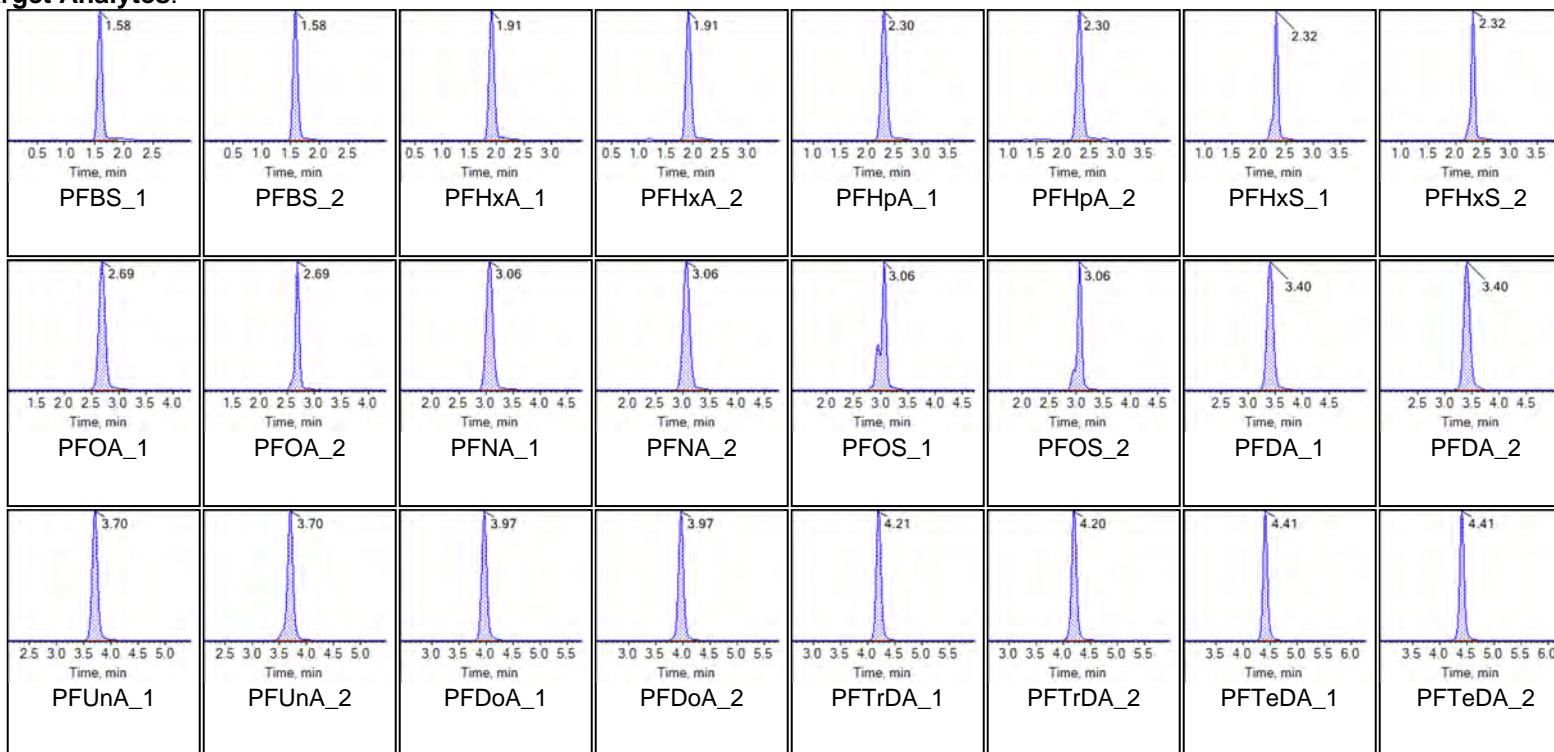
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Sample Name	DB333LCS-FS(0)	Injection Vial	24
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
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Chromatograms

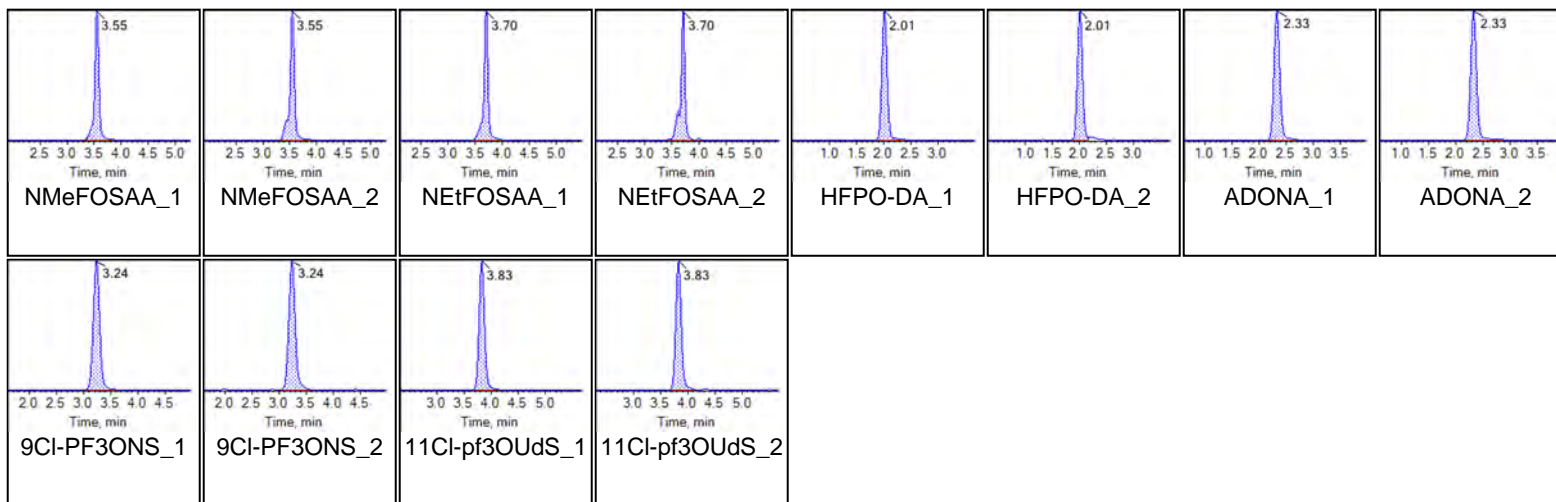
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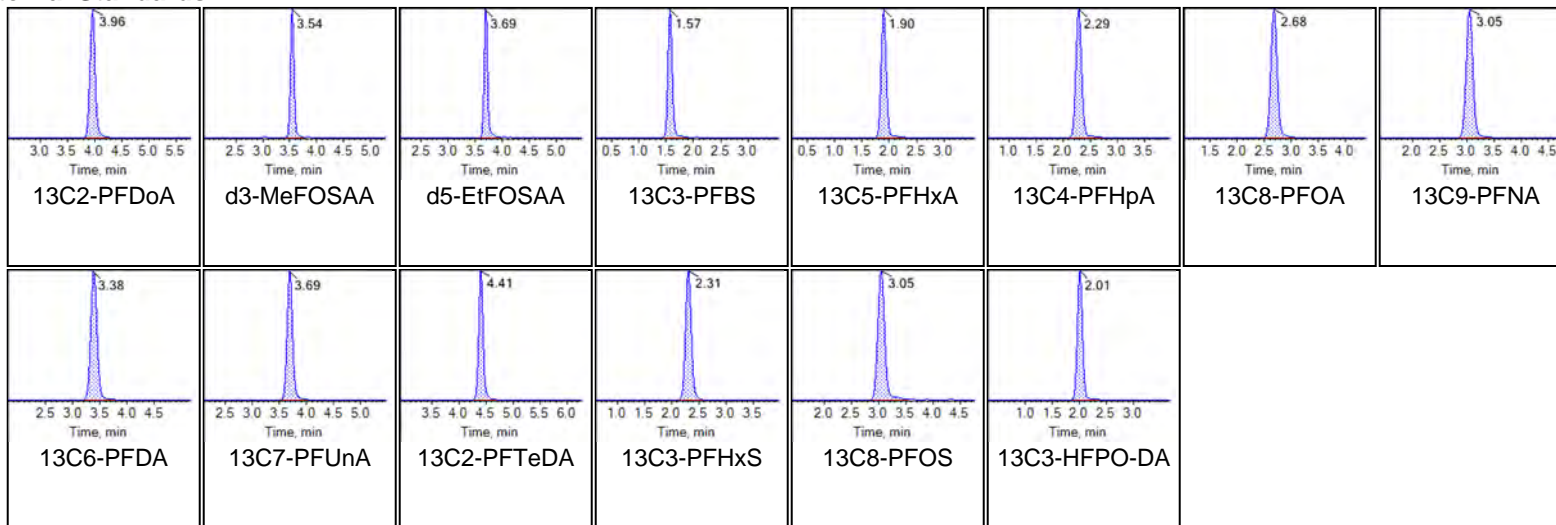


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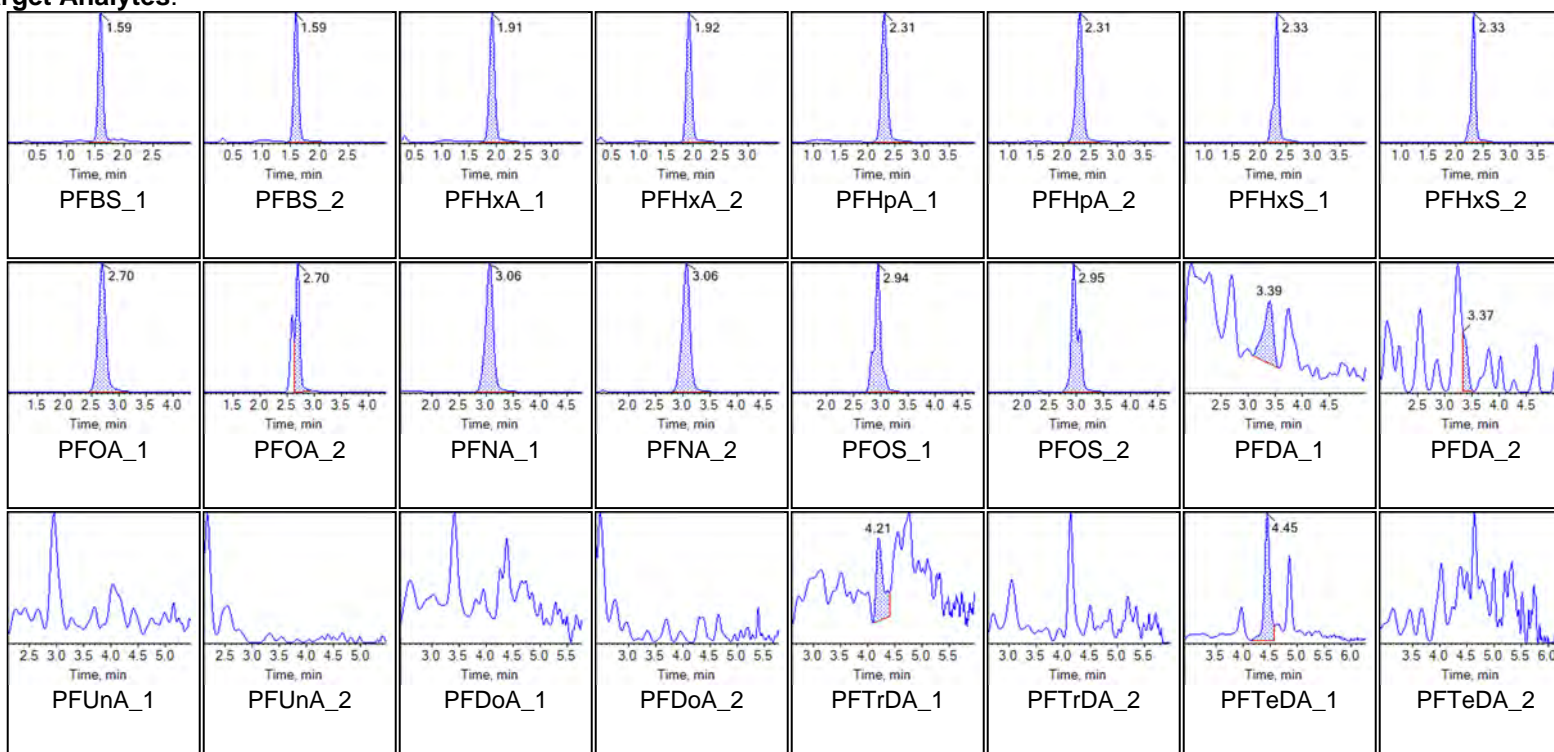
Chromatogram Report

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Sample Name	G1707-FS1(0)	Injection Vial	25
Sample ID	CBD-AOA-MW15-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 2:05:44 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455

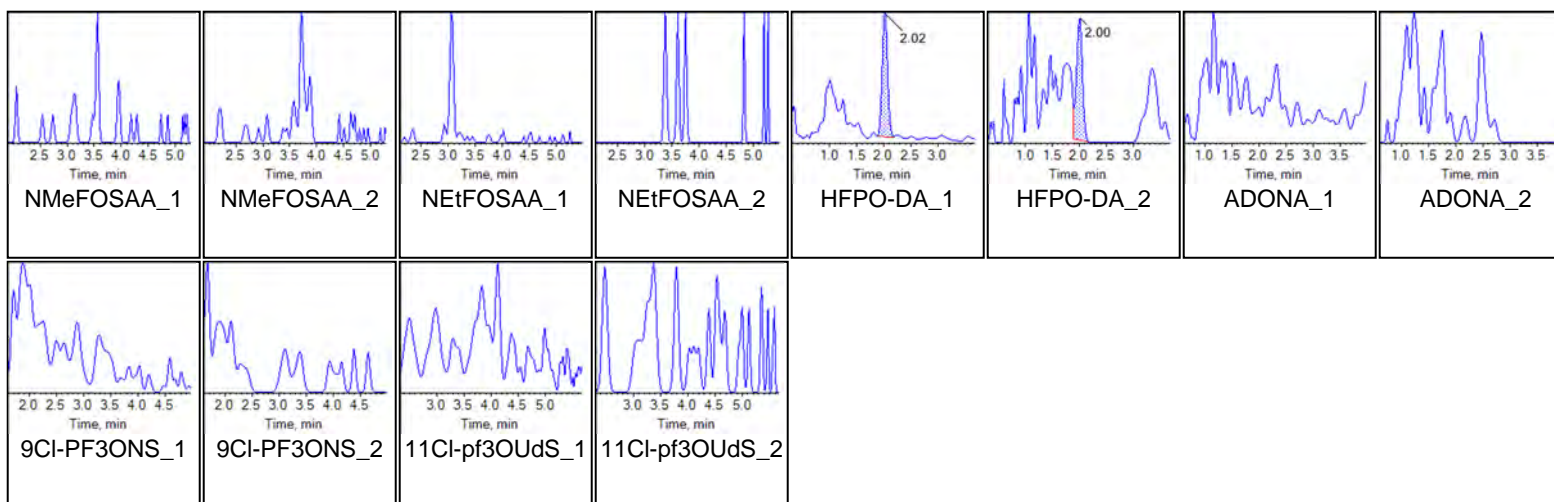
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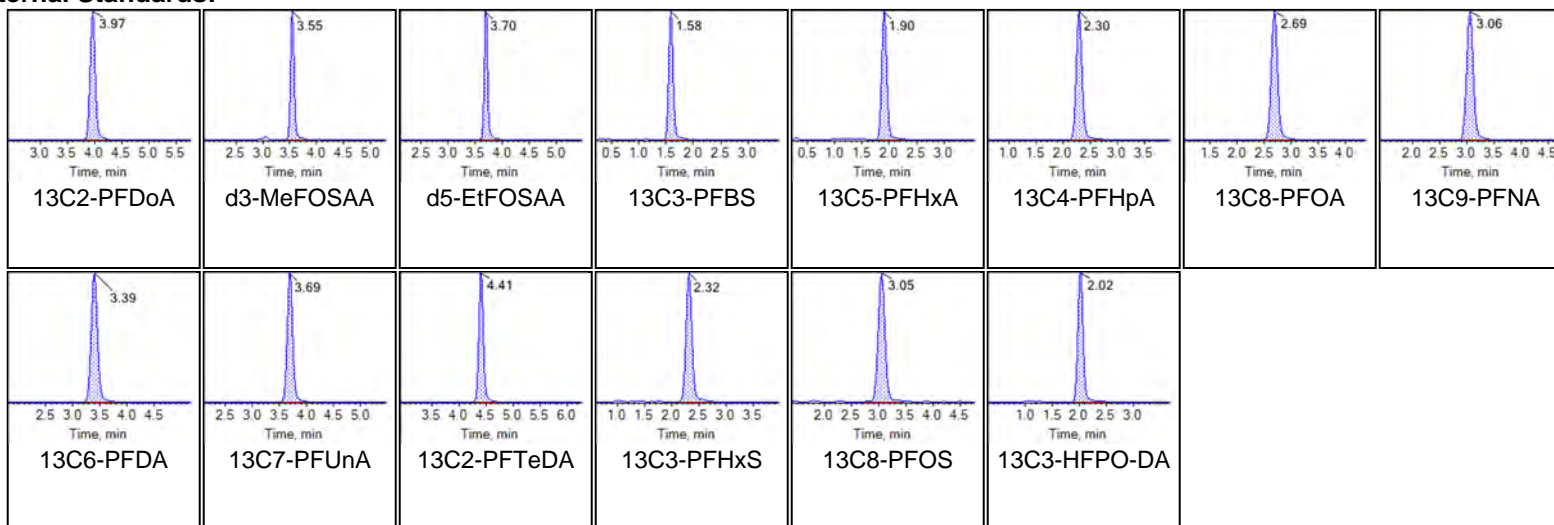




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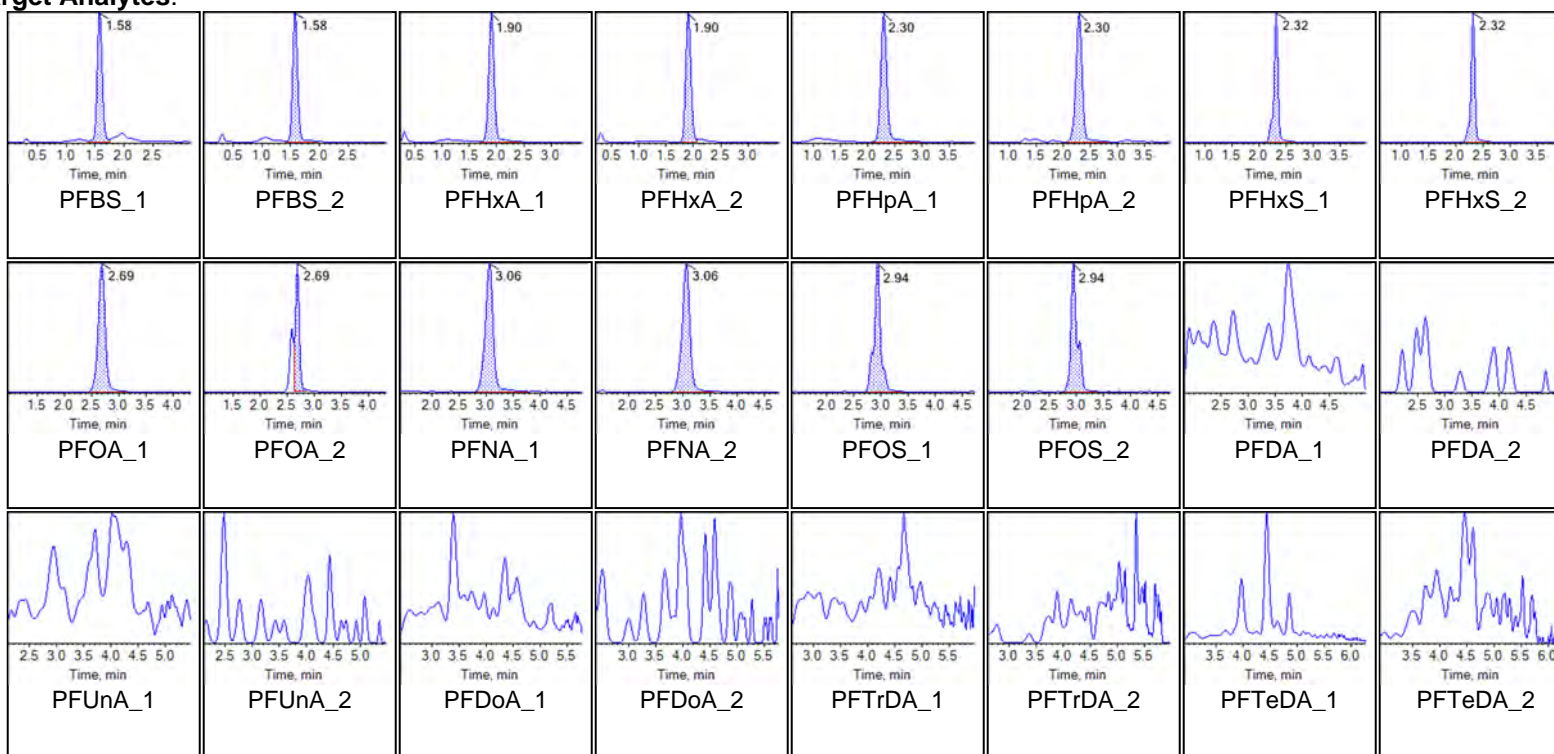
Chromatogram Report

Created with Analyst Reporter
Printed: 12/11/2020 4:03:03 PM

Sample Name	G1707-FS1-D(3)	Injection Vial	26
Sample ID	CBD-AOA-MW15-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
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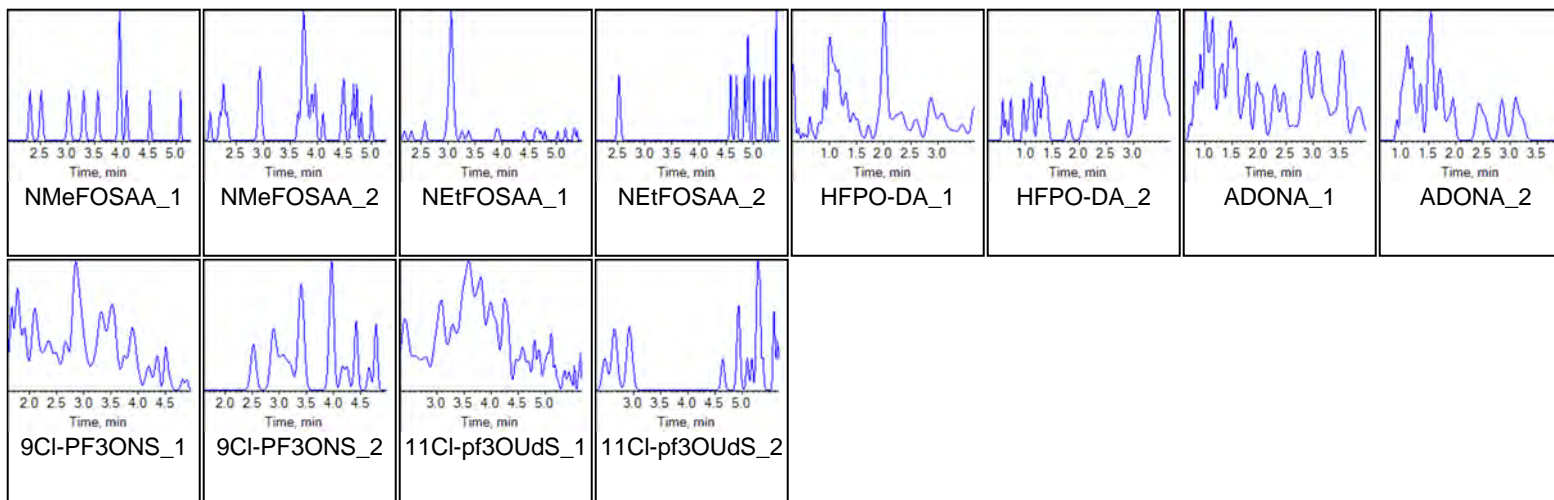
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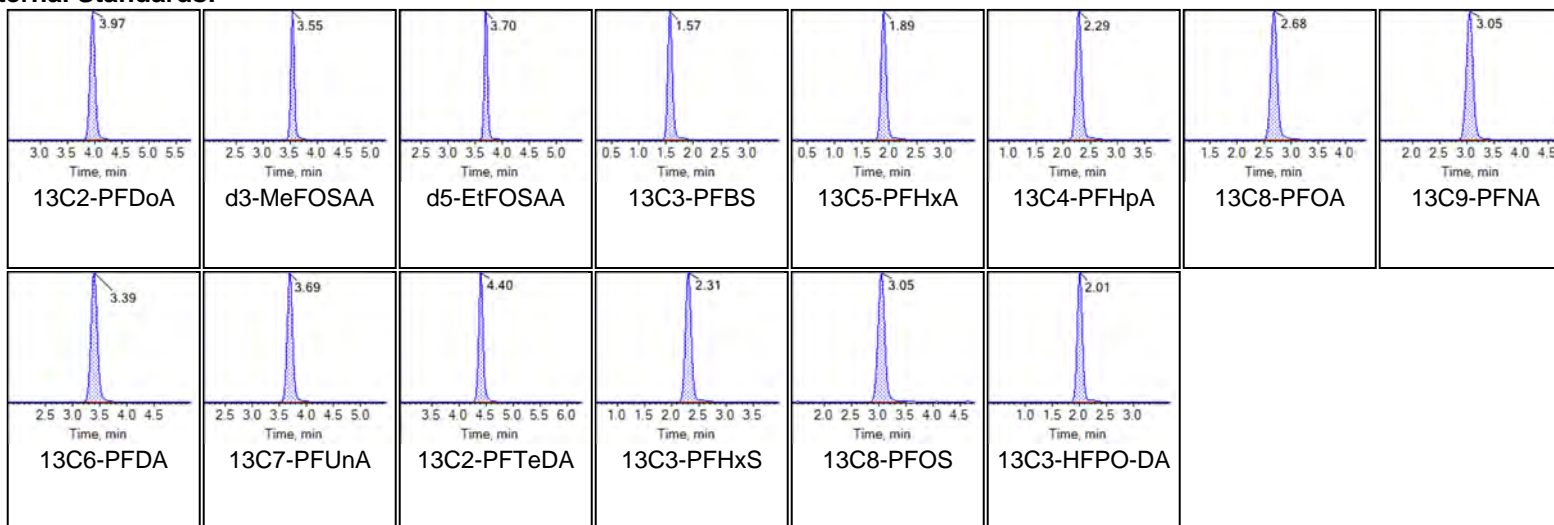




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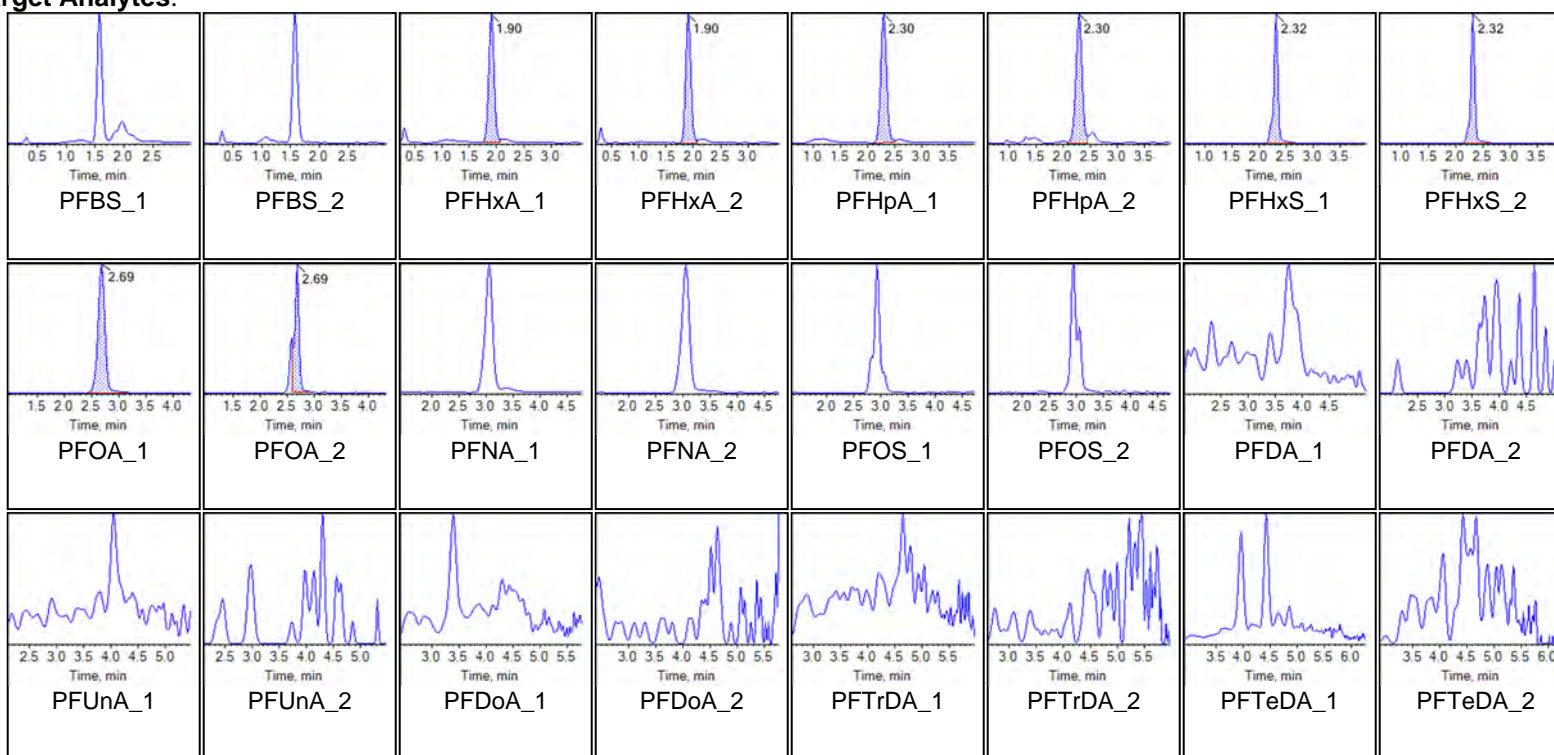
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Sample Name	G1707-FS1-D(5)	Injection Vial	27
Sample ID	CBD-AOA-MW15-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 2:27:29 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455

Chromatograms

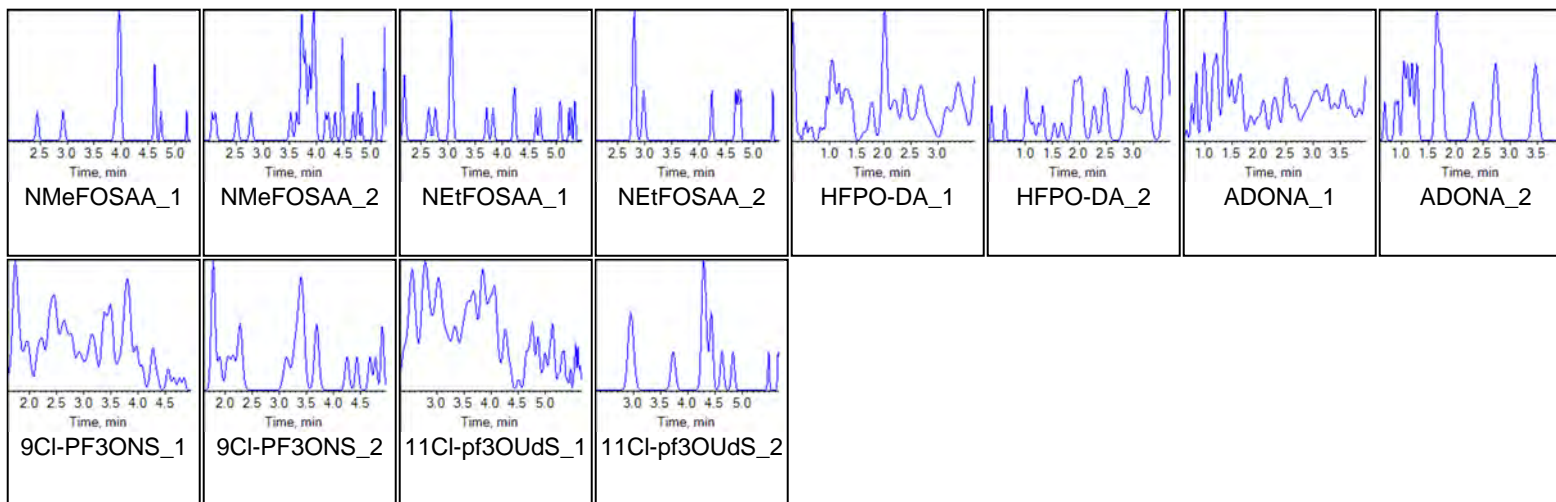
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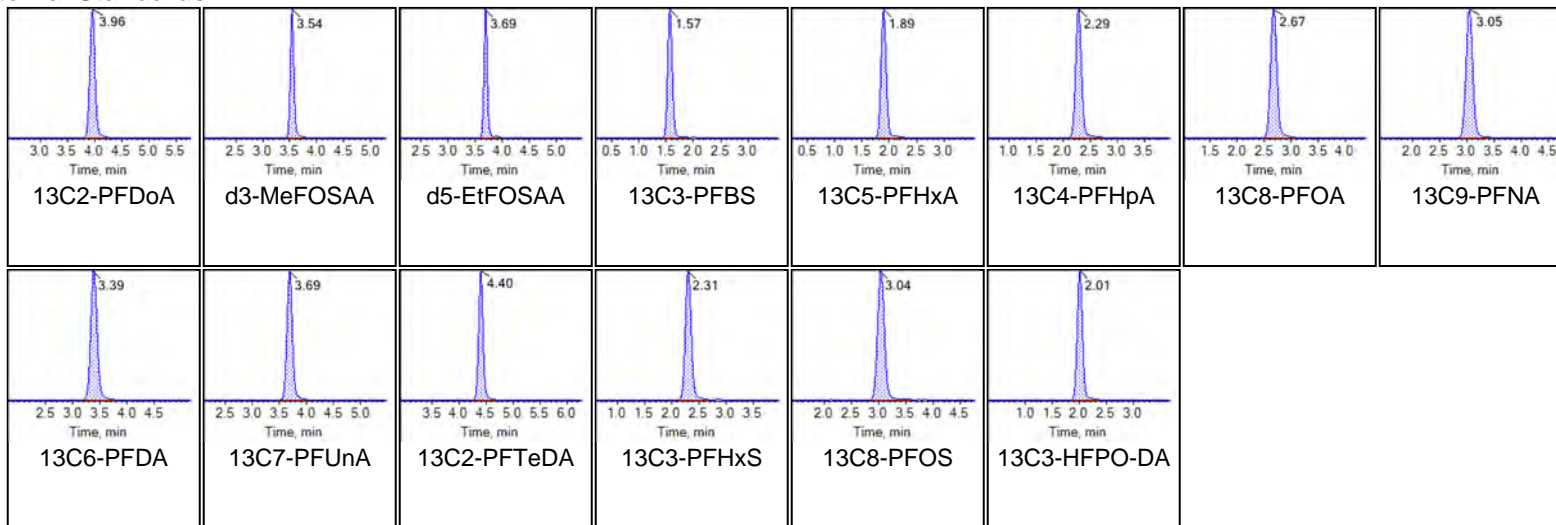


Chromatogram Report

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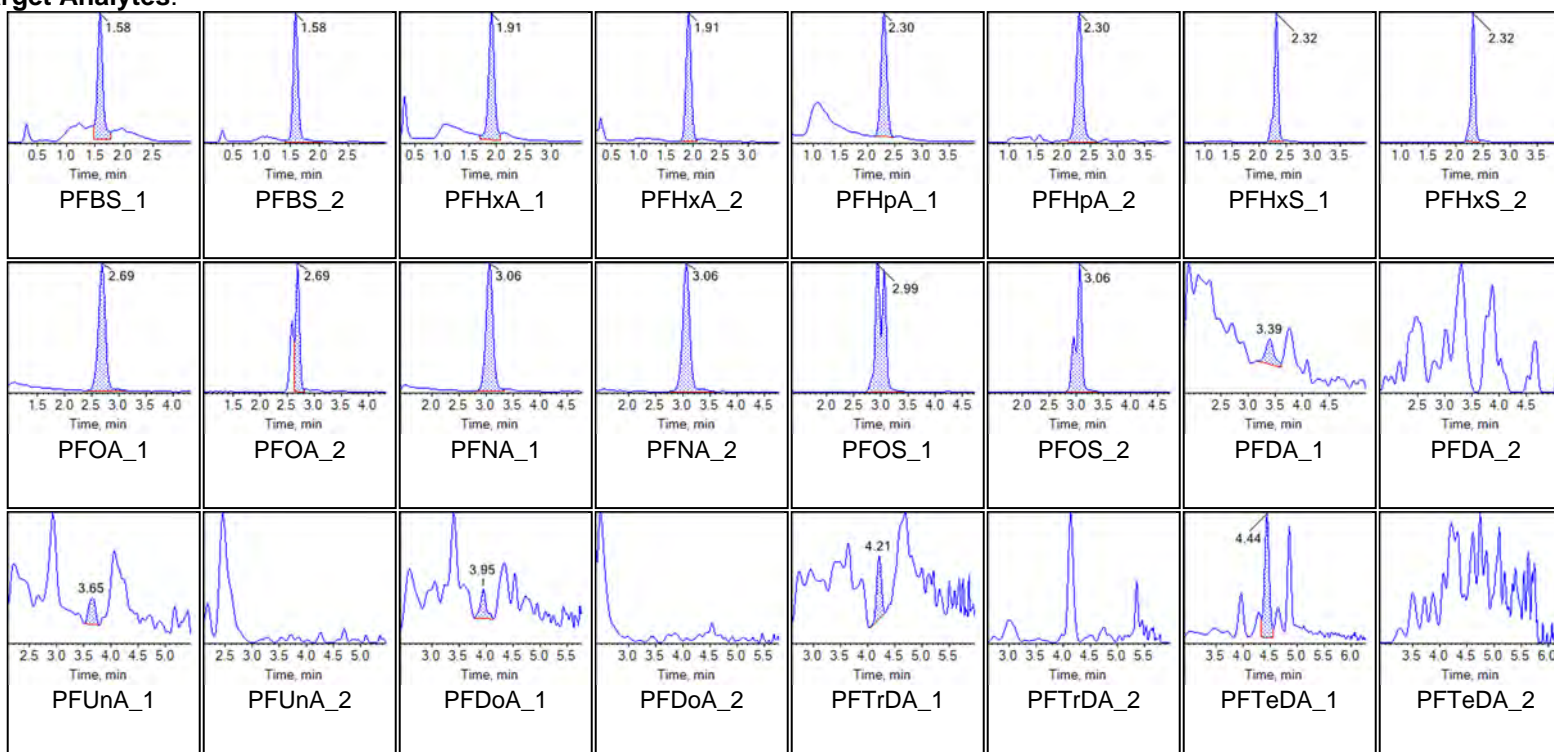
Chromatogram Report

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Sample Name	G1708-FS1(0)	Injection Vial	28
Sample ID	CBD-AOA-MW16-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 2:38:21 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455

Chromatograms

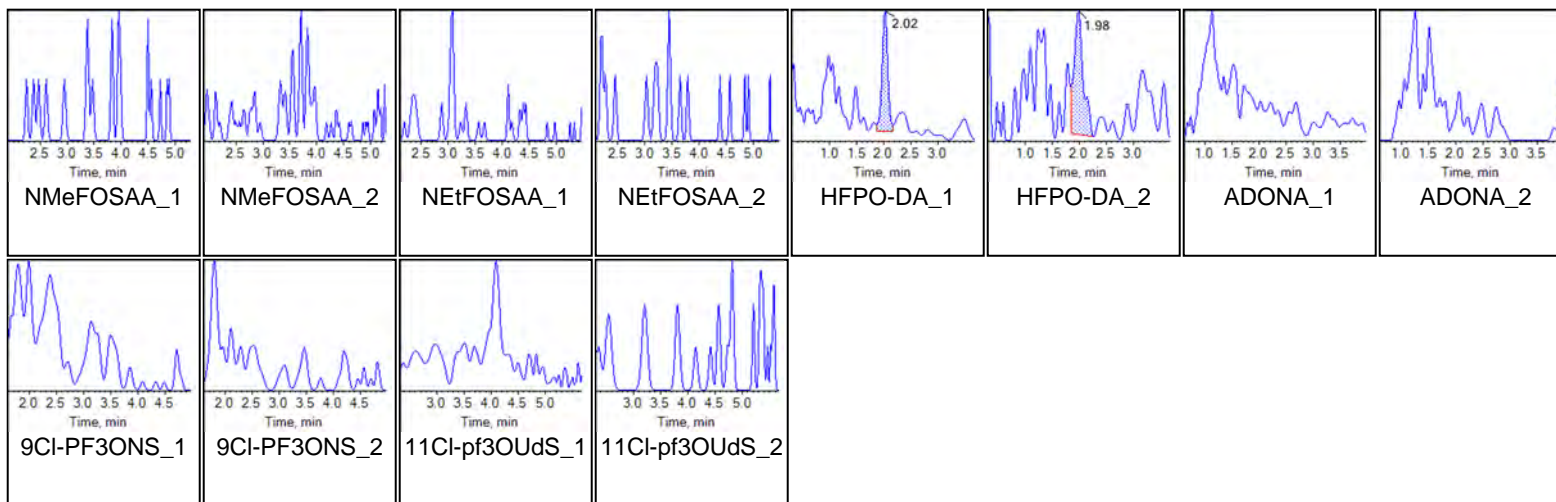
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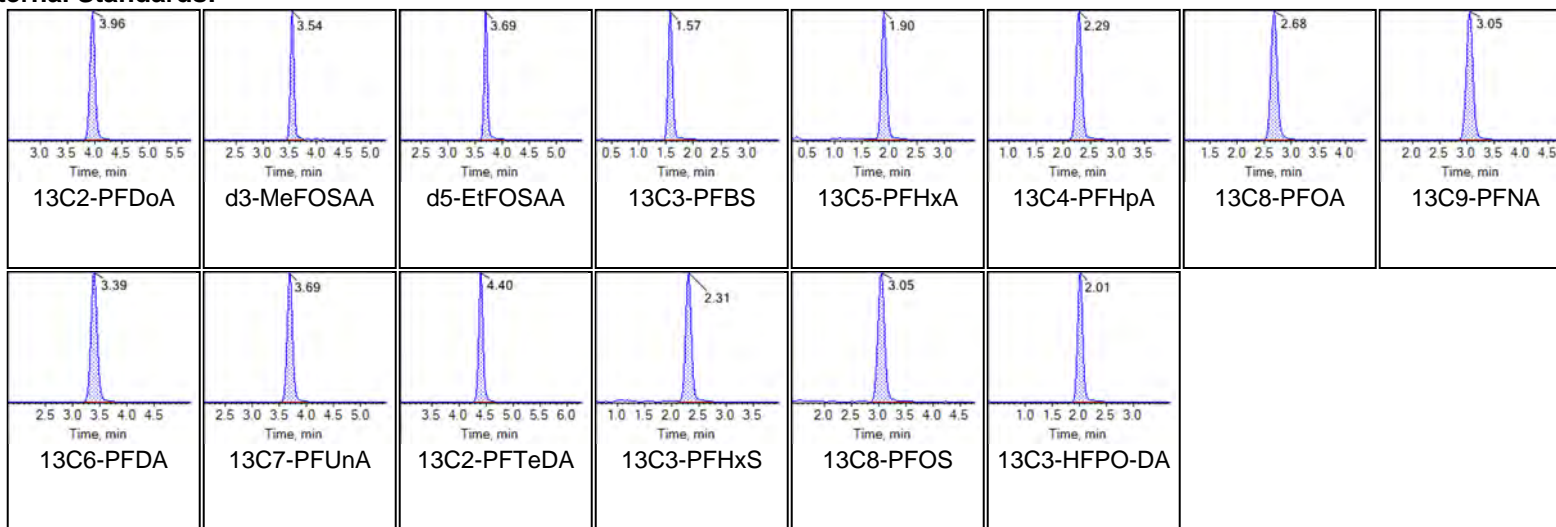


Chromatogram Report

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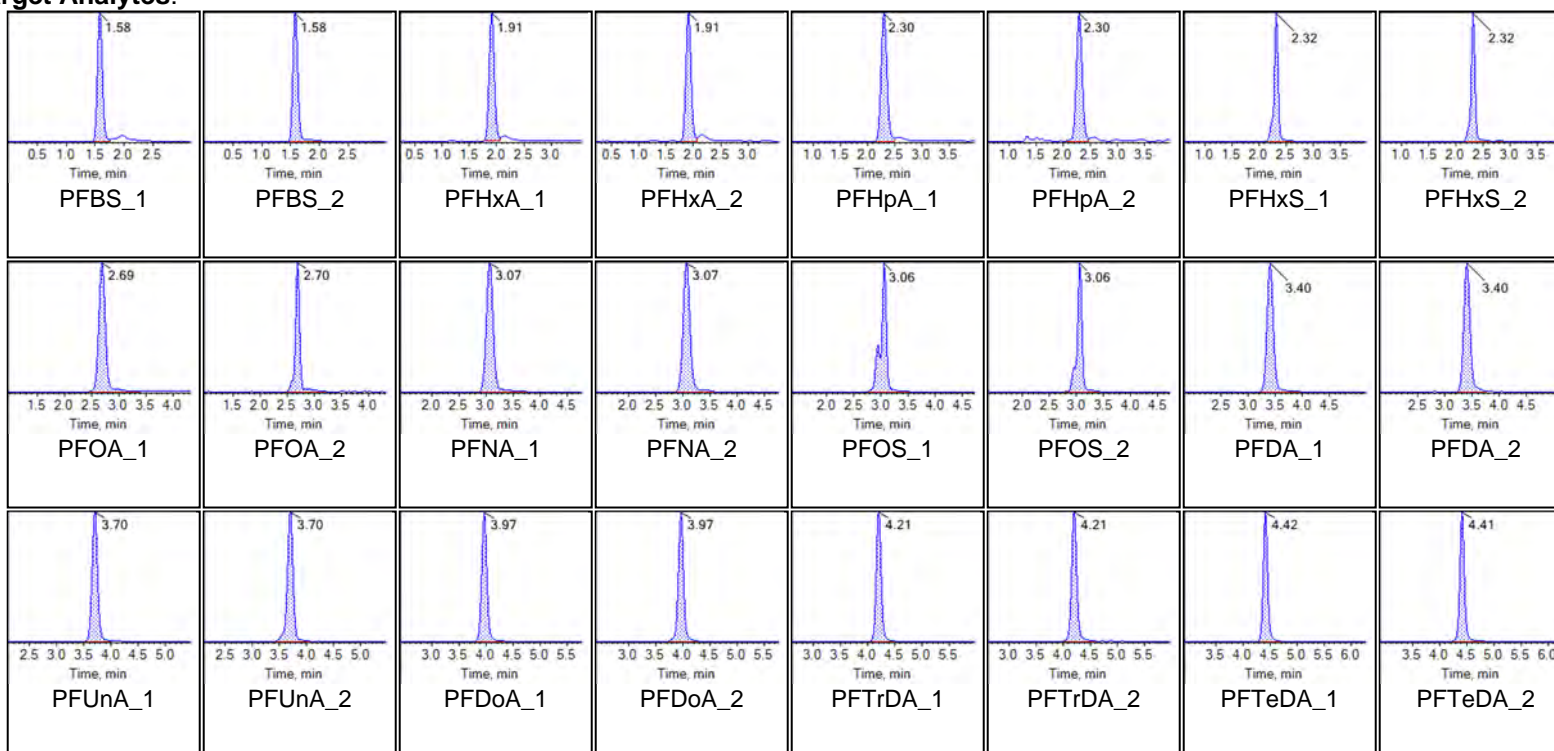
Chromatogram Report

Created with Analyst Reporter
Printed: 12/11/2020 4:03:03 PM

Sample Name	LD77 CCV	Injection Vial	30
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 3:00:38 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455

Chromatograms

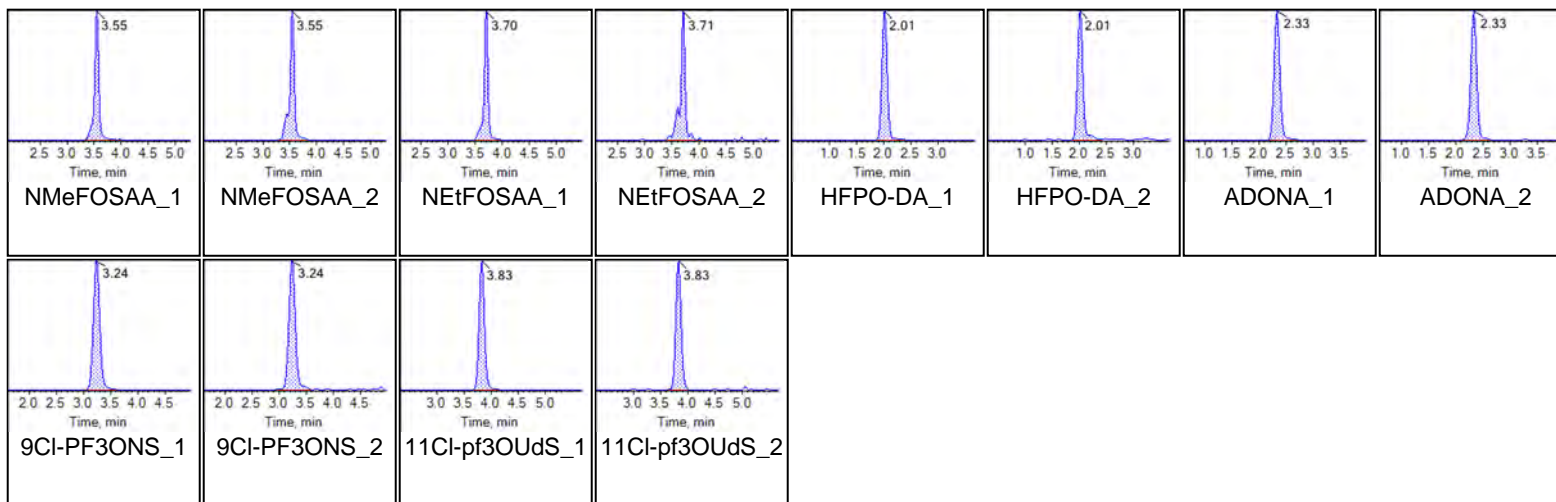
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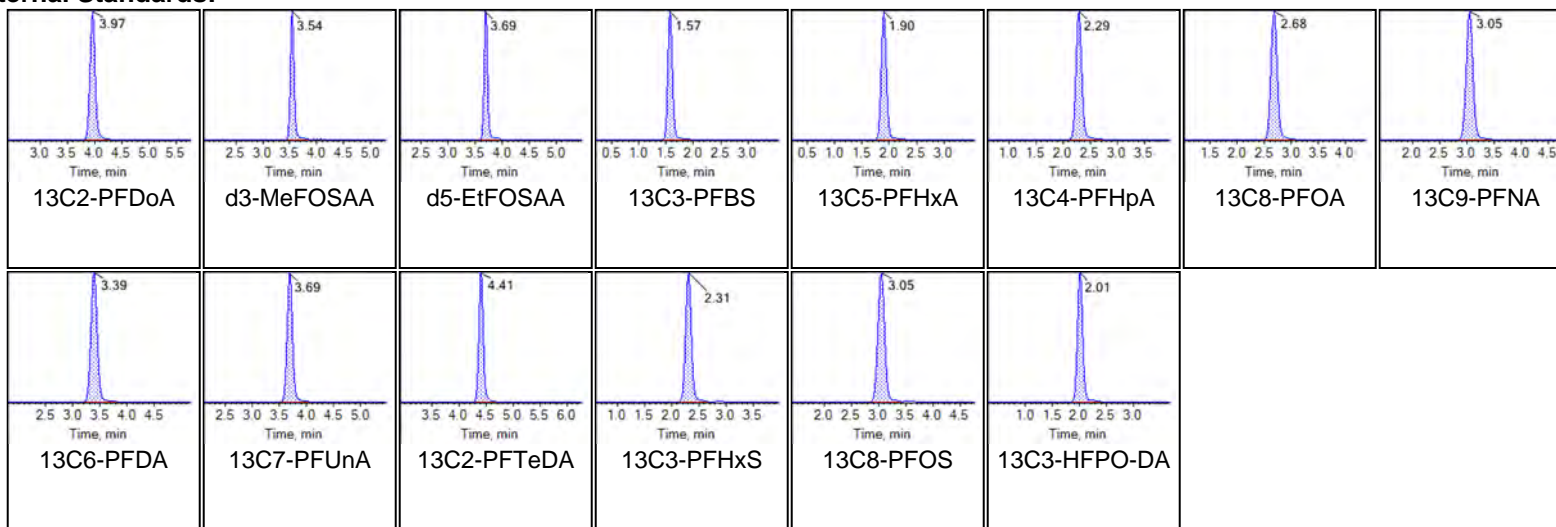


Chromatogram Report

Created with Analyst Reporter
Printed: 12/11/2020 4:03:03 PM



Internal Standards:





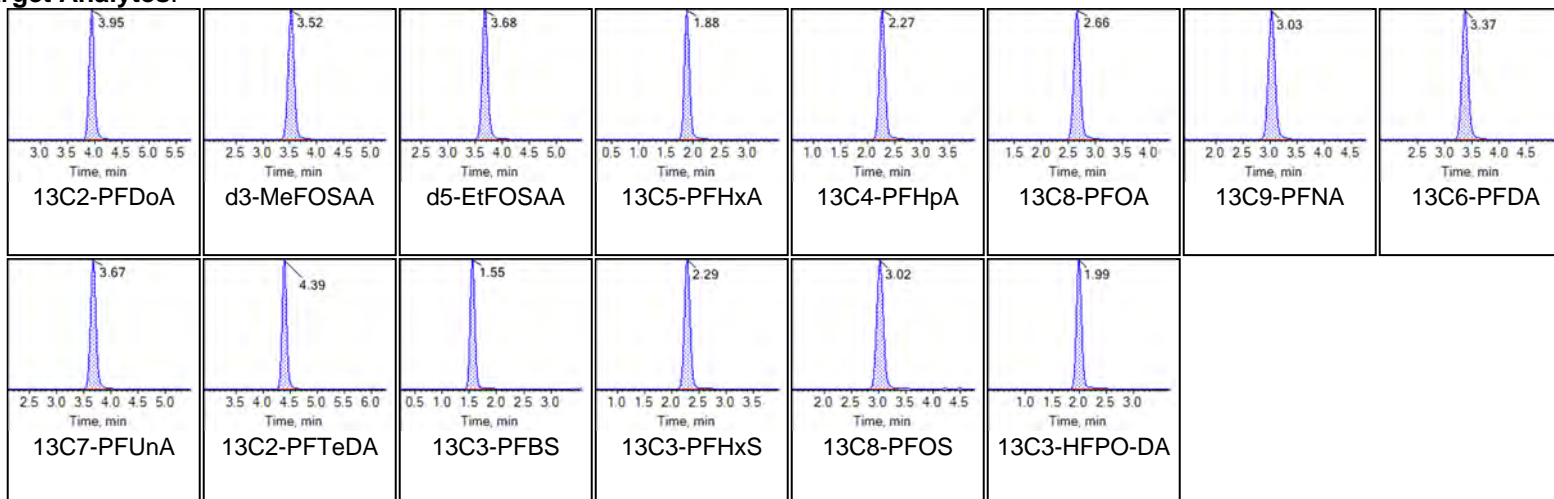
Chromatogram Report

Created with Analyst Reporter
Printed: 12/11/2020 4:02:51 PM

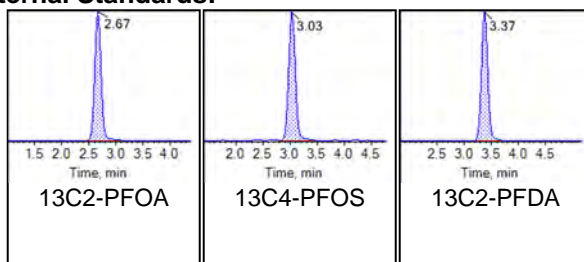
Sample Name	LD74	Injection Vial	2
Sample ID	L1	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:18:58 AM	Data File	AC_11112020_5-369.wiff
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Chromatograms

Target Analytes:



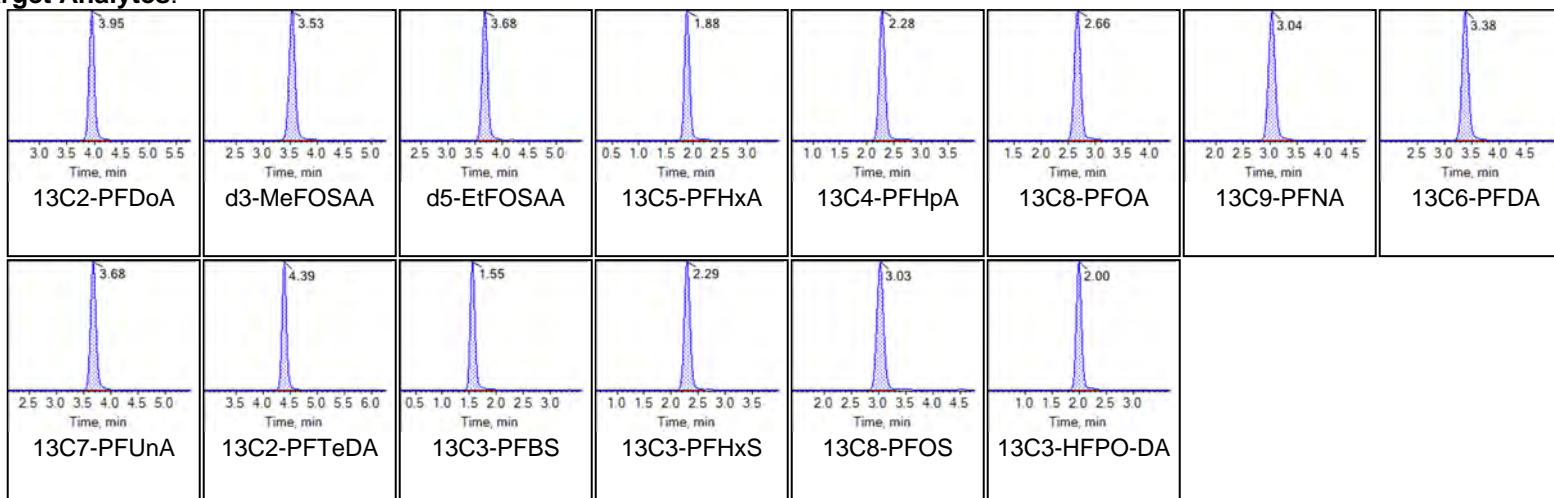
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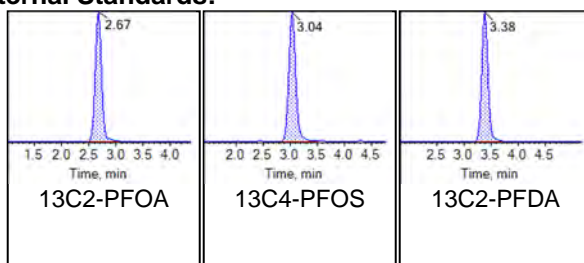
Sample Name	LD75	Injection Vial	3
Sample ID	L2	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:29:49 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

Chromatograms

Target Analytes:



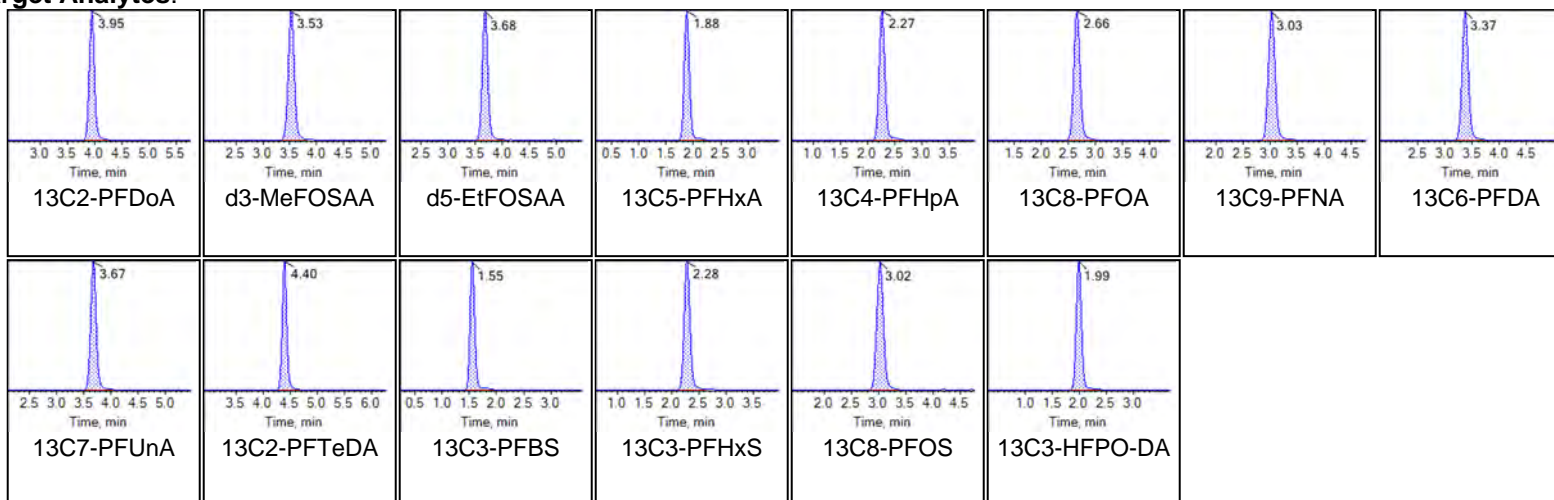
Internal Standards:



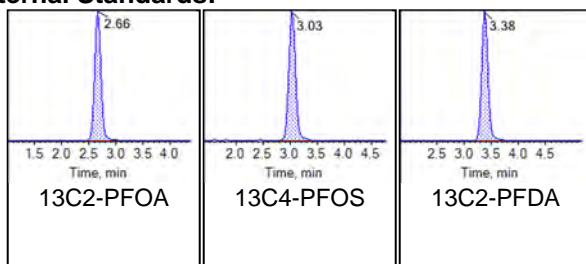
Sample Name	LD76	Injection Vial	4
Sample ID	L3	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:40:39 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

Chromatograms

Target Analytes:



Internal Standards:





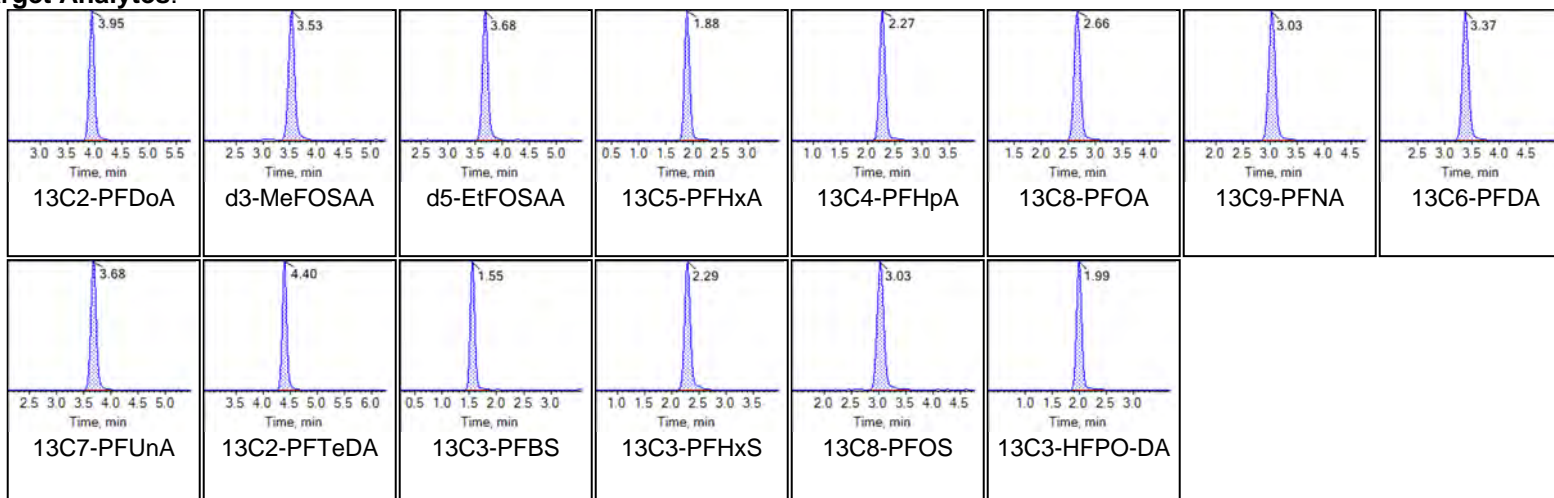
Chromatogram Report

Created with Analyst Reporter
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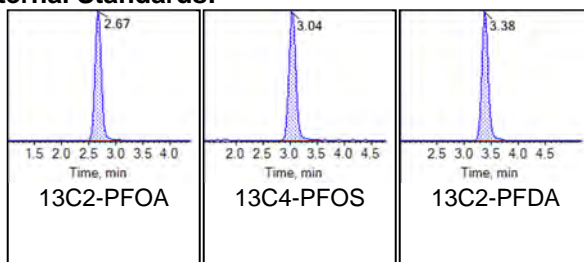
Sample Name	LD77	Injection Vial	5
Sample ID	L4	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 3:51:31 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

Chromatograms

Target Analytes:



Internal Standards:





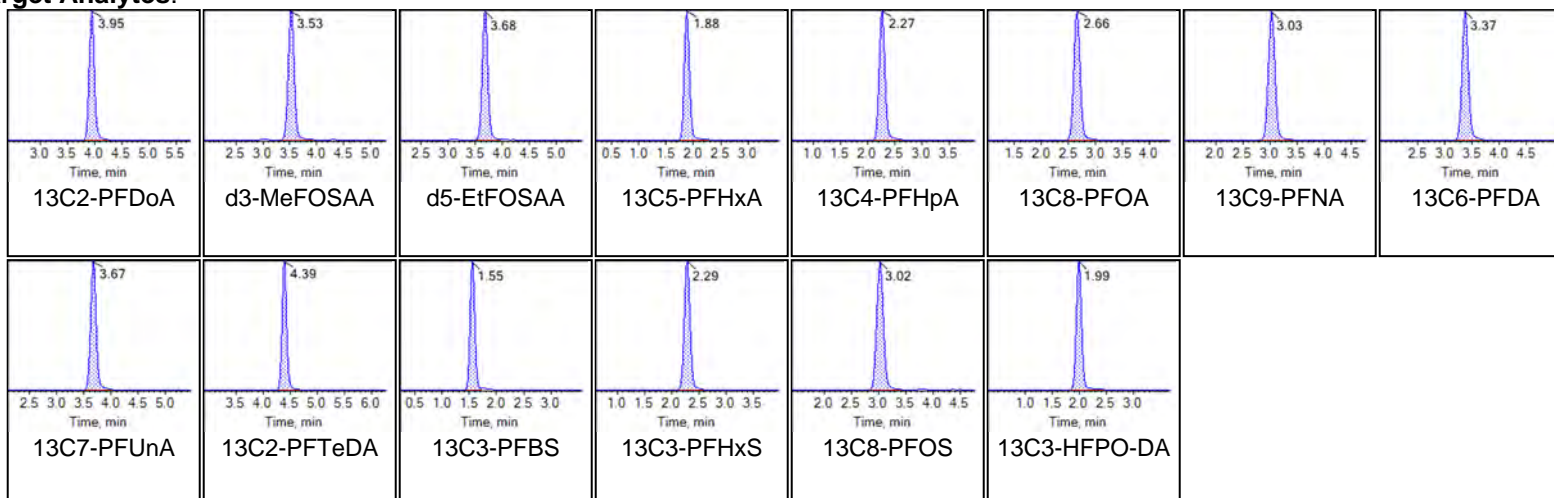
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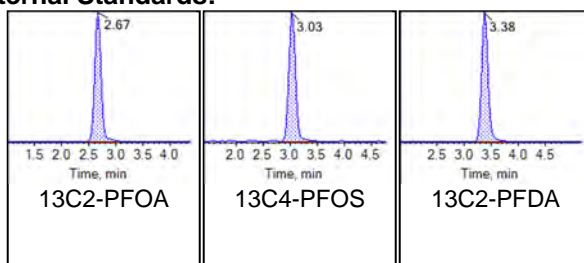
Sample Name	LD78	Injection Vial	6
Sample ID	L5	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:02:22 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

Chromatograms

Target Analytes:



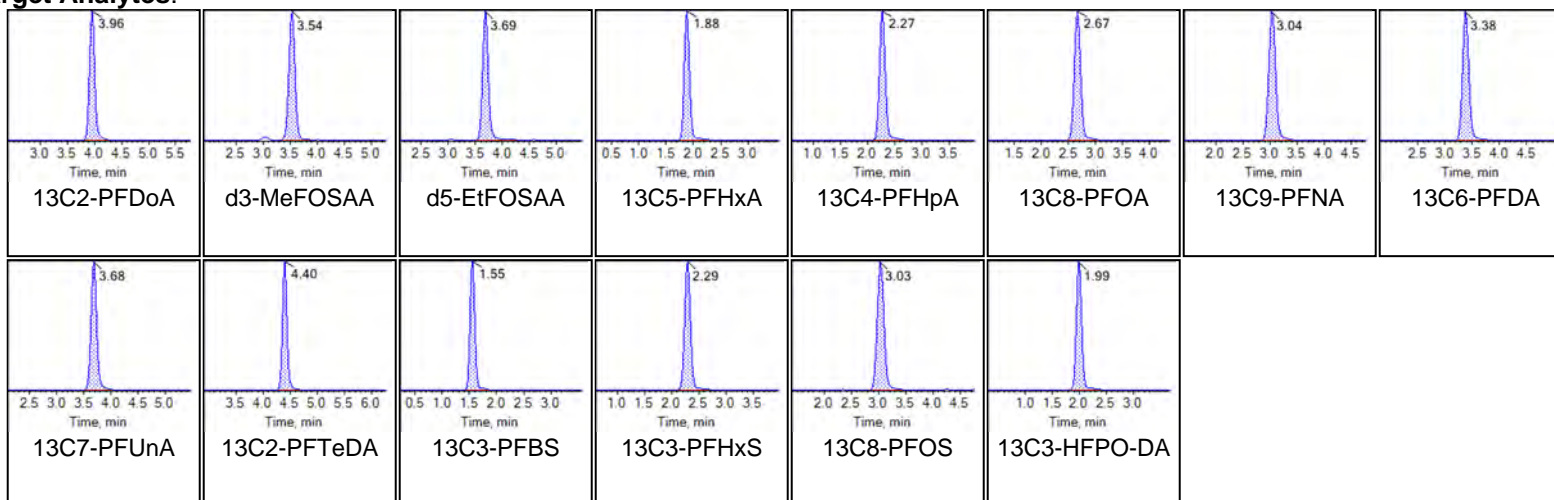
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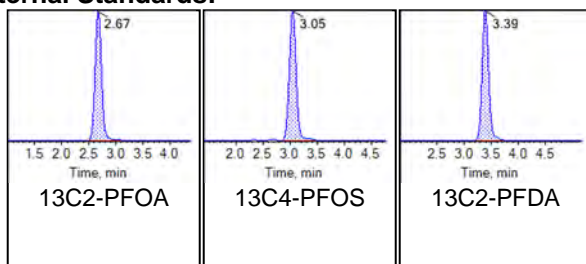
Sample Name	LD79	Injection Vial	7
Sample ID	L6	Injection Volume	10.00
Sample Type	Standard	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:13:13 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

Chromatograms

Target Analytes:



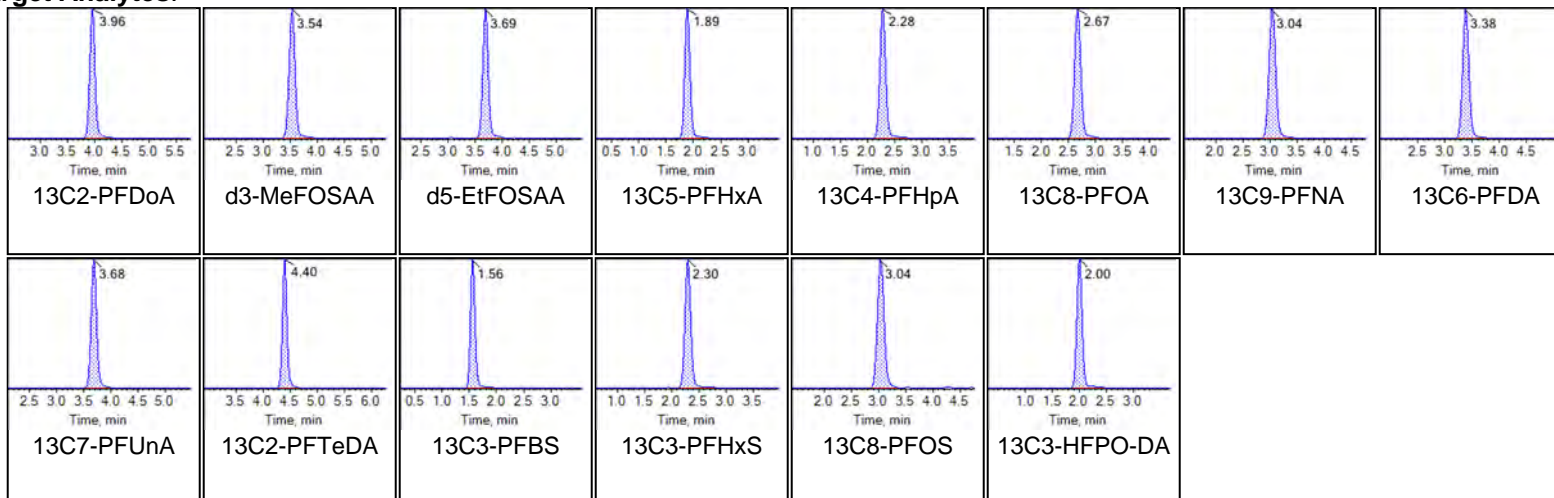
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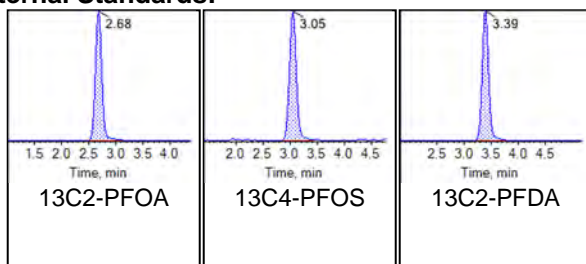
Sample Name	LD80 IB	Injection Vial	8
Sample ID	IB	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:24:05 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

Chromatograms

Target Analytes:



Internal Standards:





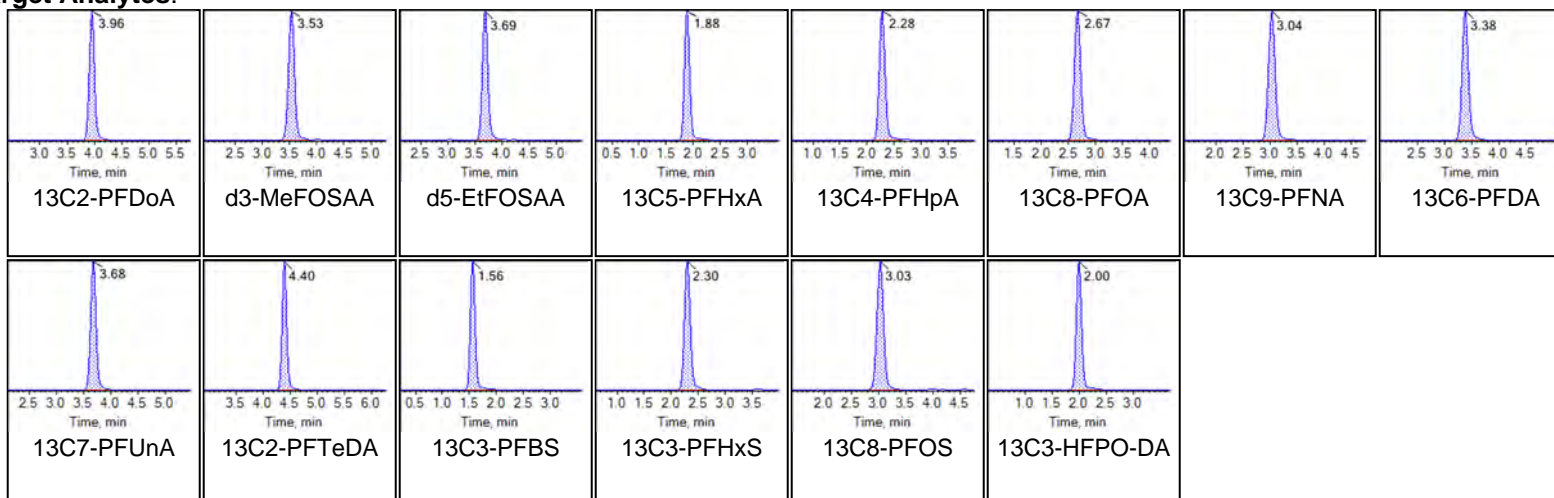
Chromatogram Report

Created with Analyst Reporter
Printed: 12/11/2020 4:02:51 PM

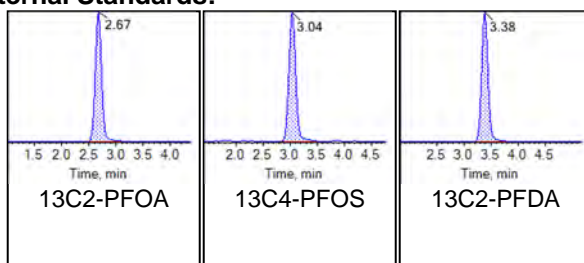
Sample Name	LD81 ICC	Injection Vial	9
Sample ID	ICC	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/11/2020 4:34:56 AM	Data File	AC_11112020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

Chromatograms

Target Analytes:



Internal Standards:





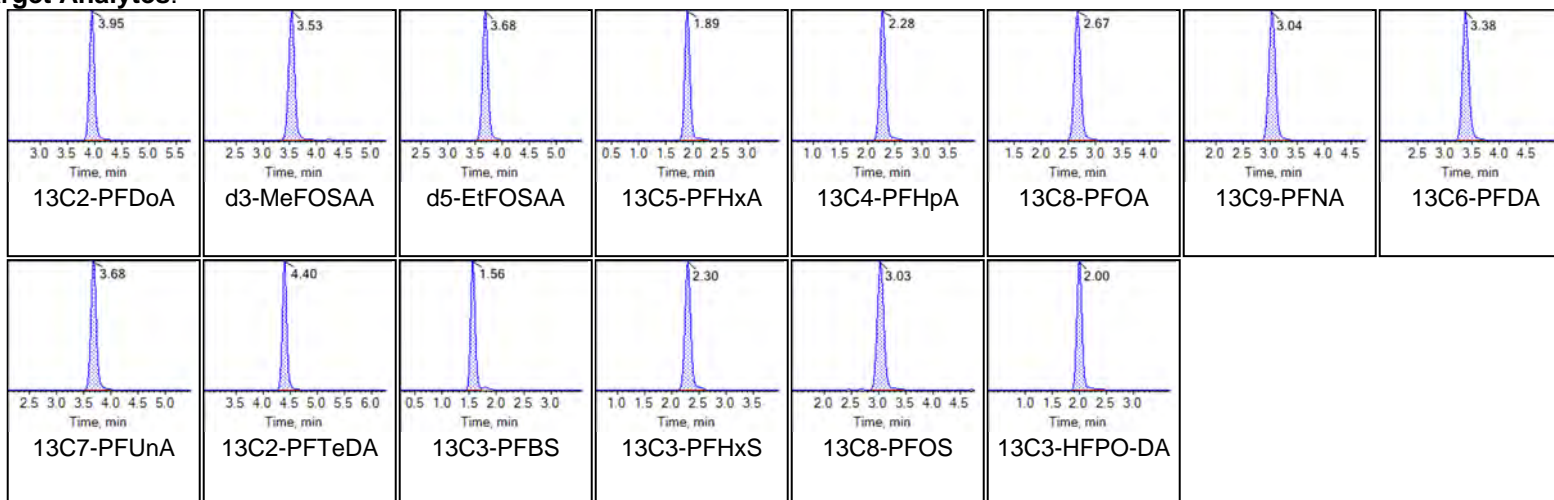
Chromatogram Report

Created with Analyst Reporter
Printed: 12/11/2020 4:02:51 PM

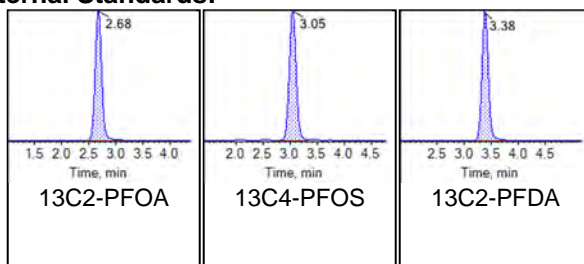
Sample Name	LD76 CCV	Injection Vial	2
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 9:32:55 AM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

Chromatograms

Target Analytes:



Internal Standards:





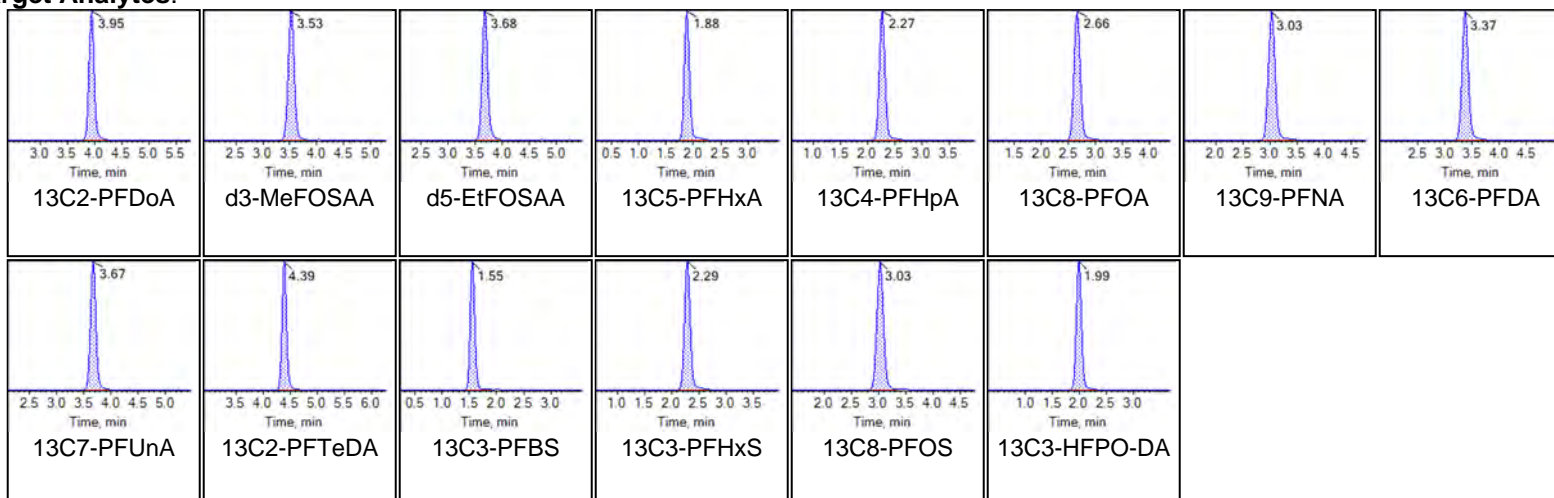
Chromatogram Report

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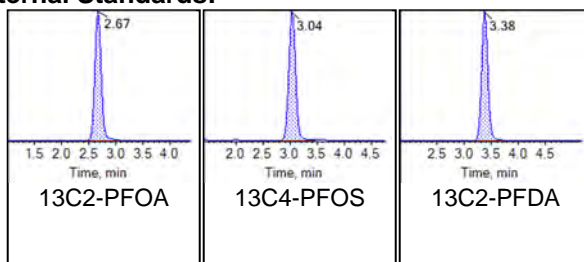
Sample Name	LD80 IB	Injection Vial	4
Sample ID	IB	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 9:54:37 AM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

Chromatograms

Target Analytes:



Internal Standards:





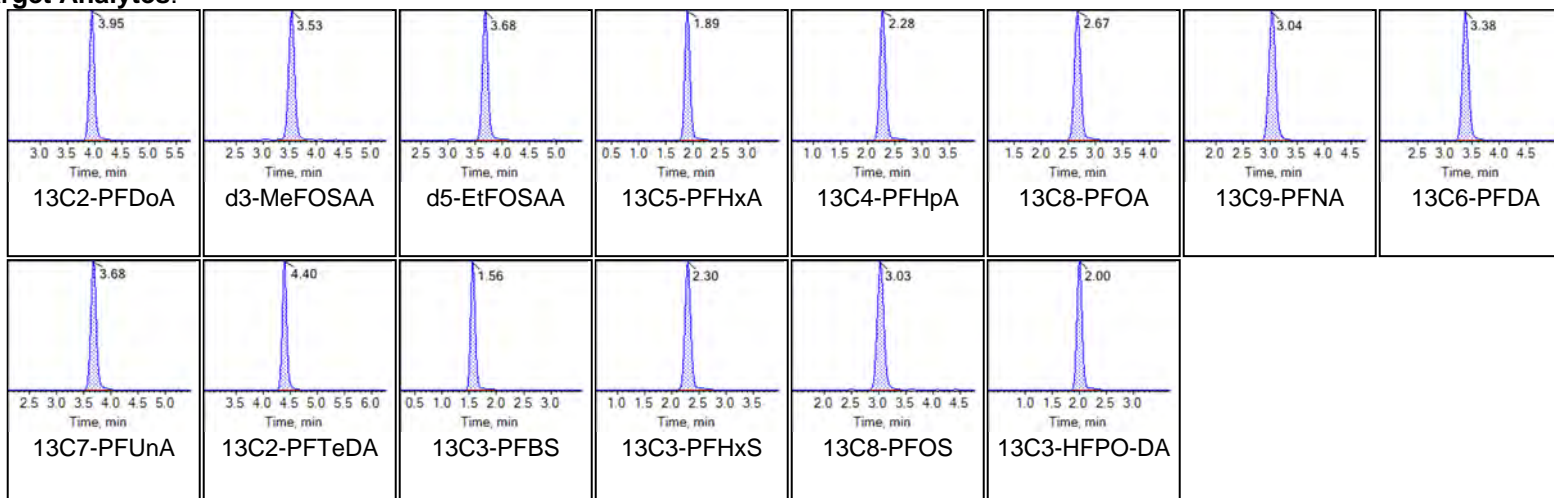
Chromatogram Report

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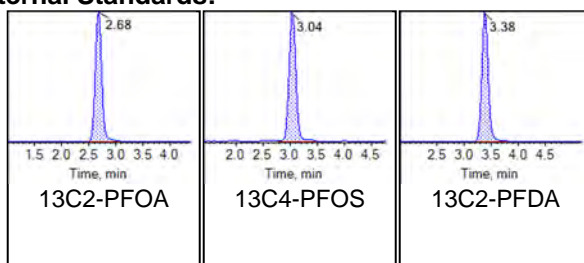
Sample Name	LD78 CCV	Injection Vial	21
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 1:22:15 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

Chromatograms

Target Analytes:



Internal Standards:





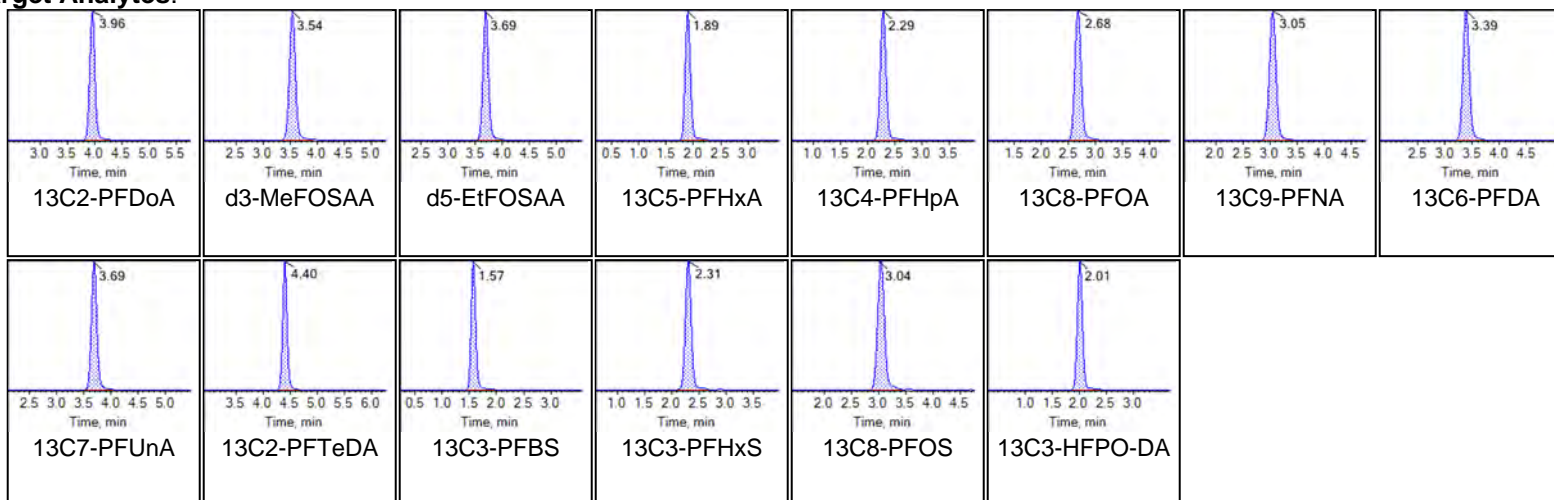
Chromatogram Report

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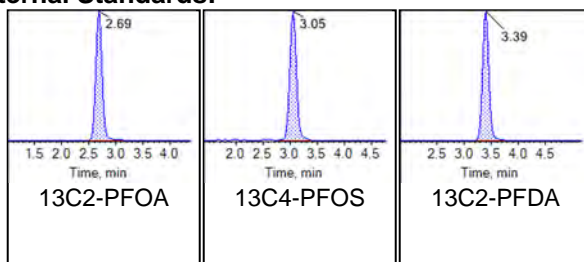
Sample Name	DB332PB-FS(0)	Injection Vial	23
Sample ID	Procedural Blank	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 1:44:00 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

Chromatograms

Target Analytes:



Internal Standards:





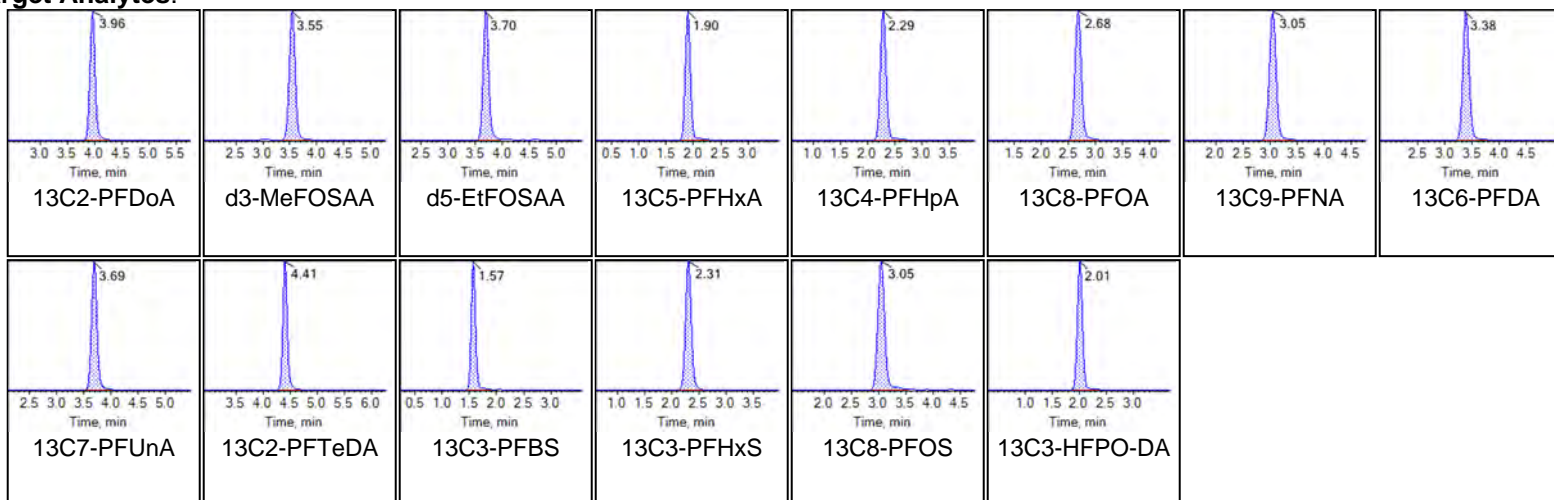
Chromatogram Report

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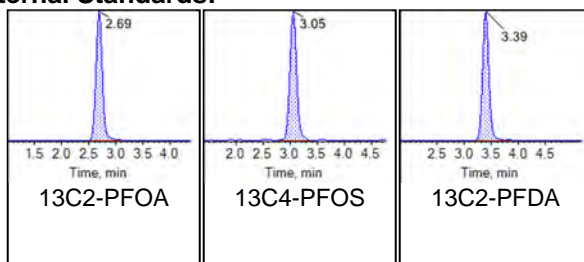
Sample Name	DB333LCS-FS(0)	Injection Vial	24
Sample ID	Laboratory Control Sample	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 1:54:52 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

Chromatograms

Target Analytes:



Internal Standards:





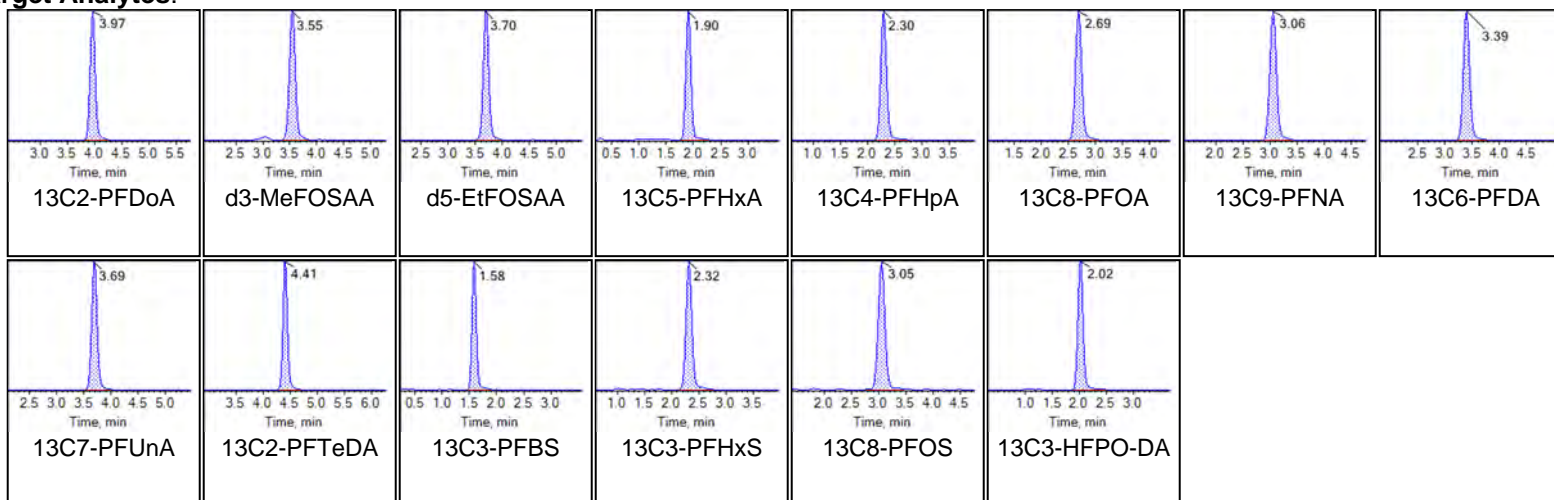
Chromatogram Report

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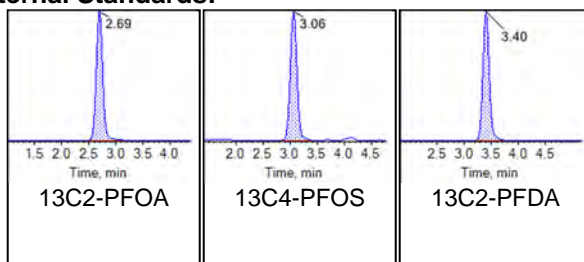
Sample Name	G1707-FS1(0)	Injection Vial	25
Sample ID	CBD-AOA-MW15-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 2:05:44 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

Chromatograms

Target Analytes:



Internal Standards:





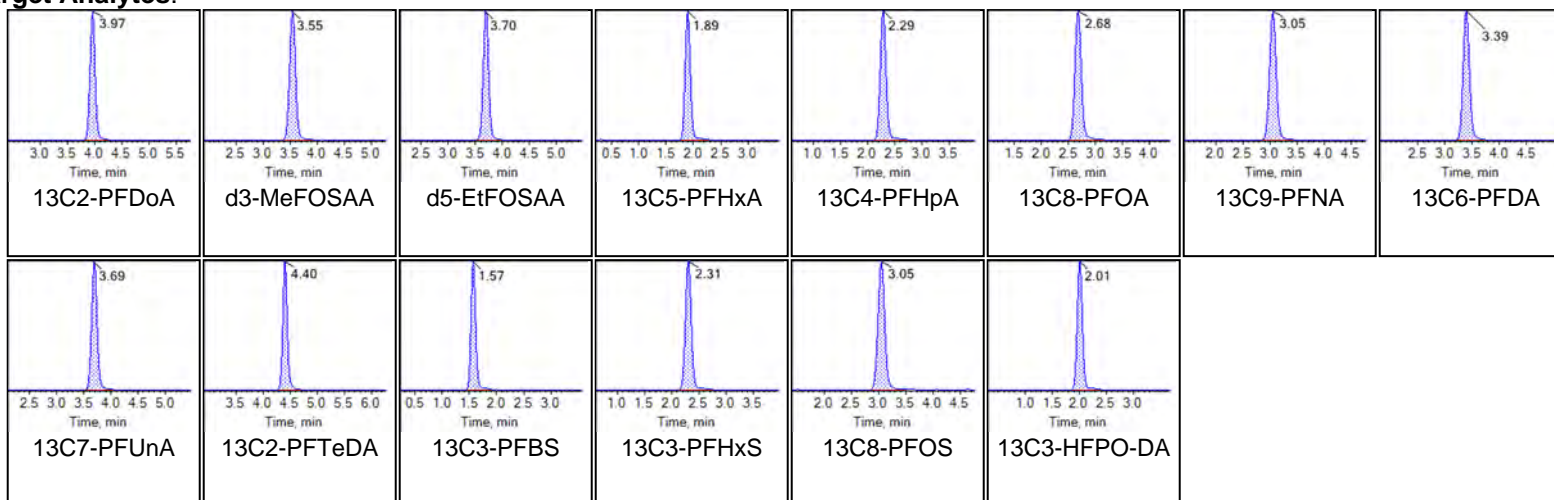
Chromatogram Report

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Printed: 12/11/2020 4:02:51 PM

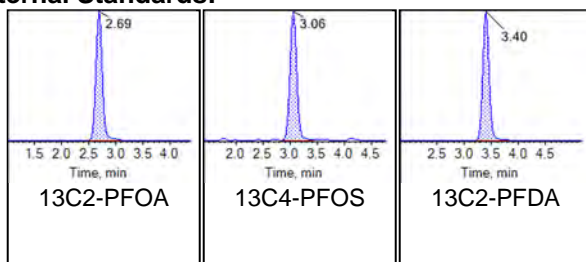
Sample Name	G1707-FS1-D(3)	Injection Vial	26
Sample ID	CBD-AOA-MW15-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 2:16:36 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

Chromatograms

Target Analytes:



Internal Standards:





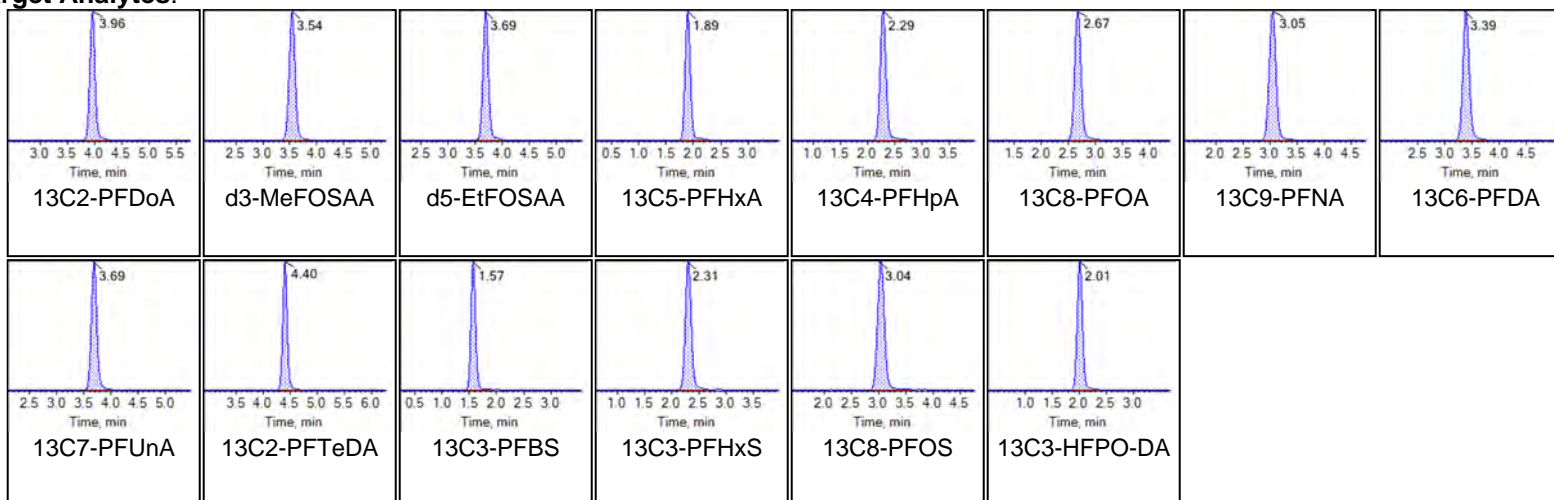
Chromatogram Report

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Printed: 12/11/2020 4:02:51 PM

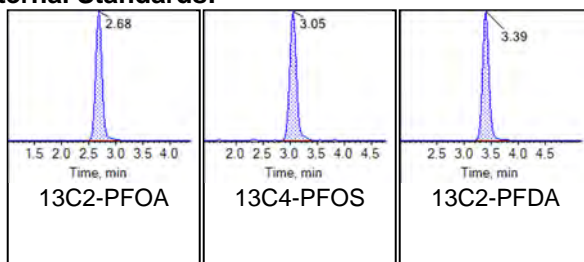
Sample Name	G1707-FS1-D(5)	Injection Vial	27
Sample ID	CBD-AOA-MW15-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 2:27:29 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

Chromatograms

Target Analytes:



Internal Standards:





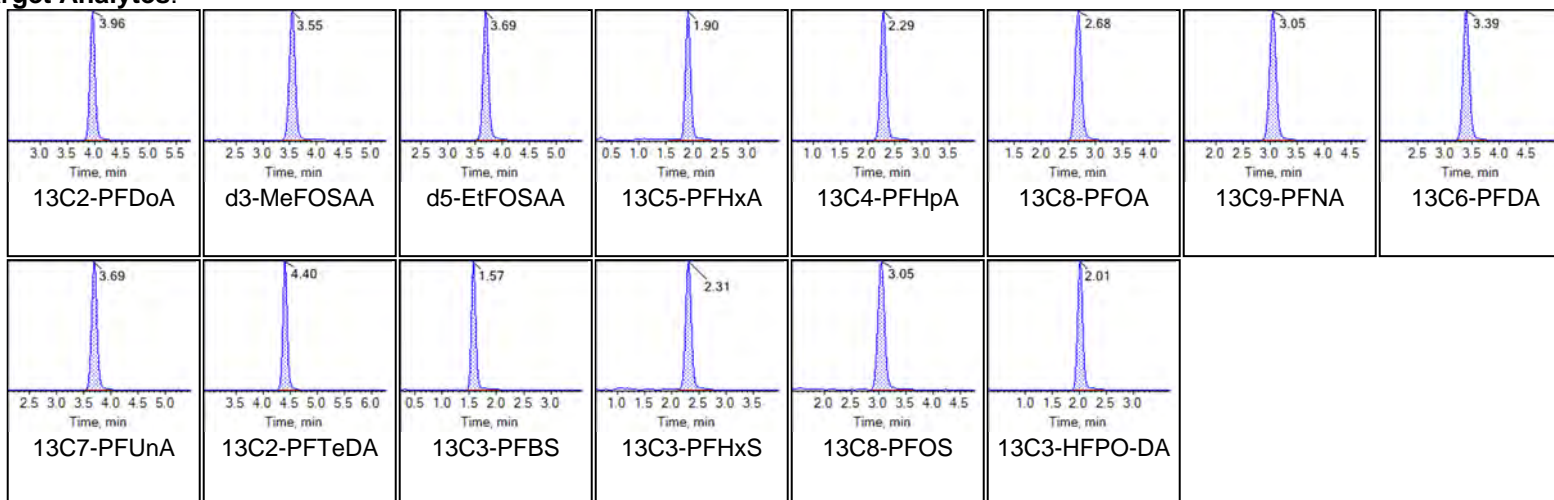
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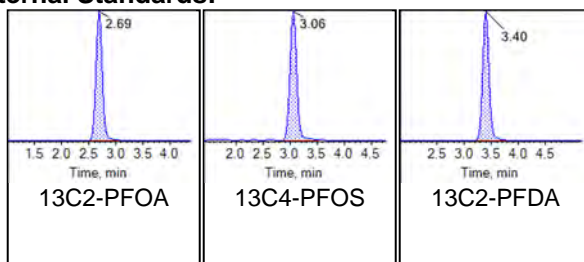
Sample Name	G1708-FS1(0)	Injection Vial	28
Sample ID	CBD-AOA-MW16-1020	Injection Volume	10.00
Sample Type	Unknown	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 2:38:21 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

Chromatograms

Target Analytes:



Internal Standards:





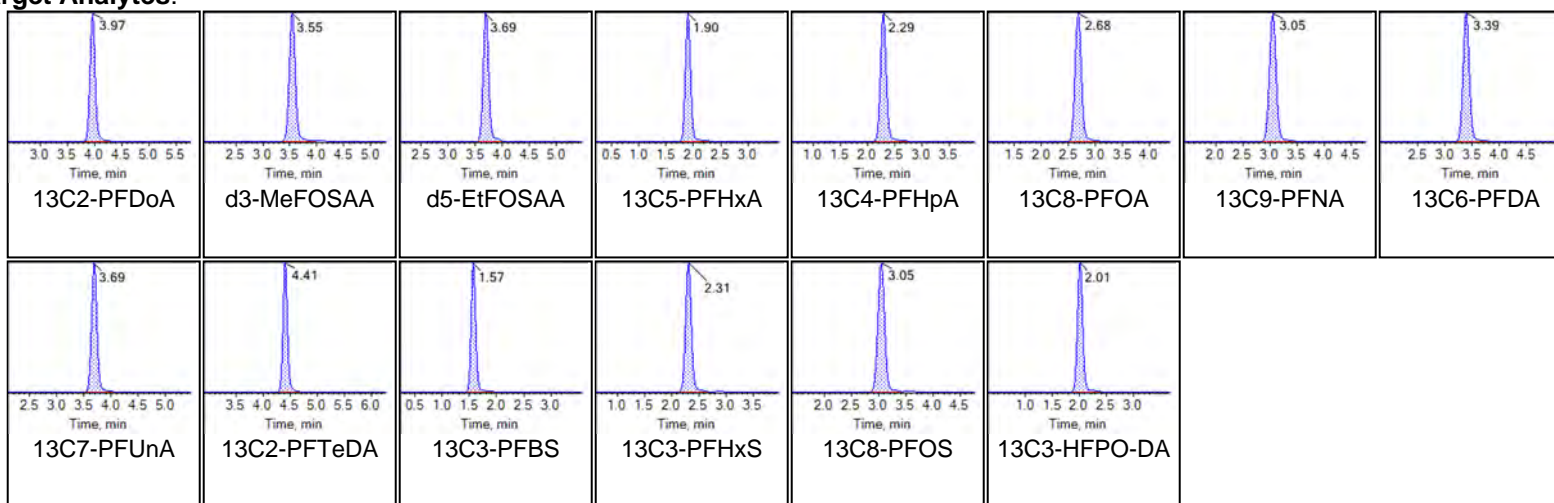
Chromatogram Report

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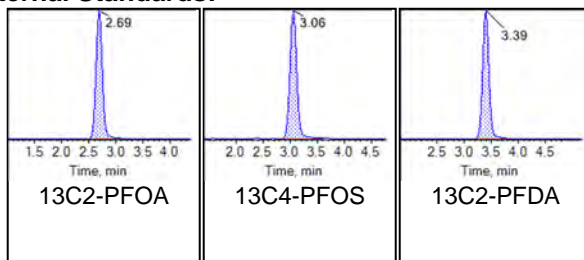
Sample Name	LD77 CCV	Injection Vial	30
Sample ID	CCV	Injection Volume	10.00
Sample Type	Quality Control	Instrument Name	QTRAP 5500
Acquisition Date	11/12/2020 3:00:38 PM	Data File	AC_11122020_5-369.wiff
Acquisition Method	5-0369.dam	Result Table	20-1455_SIS

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
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			Perfluorohexanoic Acid (PFHxA)	307-24-4	1.5	1.5	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			Perfluoroheptanoic Acid (PFHpA)	375-85-9	1	1	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			Perfluorooctanoic Acid (PFOA)	335-67-1	1.5	1.5	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			Perfluorononanoic Acid (PFNA)	375-95-1	1	1	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			Perfluorodecanoic Acid (PFDA)	335-76-2	0.5	0.5	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			Perfluoroundecanoic Acid (PFUnA)	2058-94-8	0.5	0.5	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			Perfluorododecanoic Acid (PFDoA)	307-55-1	0.5	0.5	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			Perfluorotridecanoic Acid (PFTeDA)	72629-94-8	0.5	0.5	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			Perfluorotetradecanoic Acid (PFTeDA)	376-06-7	2	2	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	2355-31-9	1	1	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	2991-50-6	1	1	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5	0.5	0.5	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			Perfluorohexanesulfonic acid (PFHxS)	355-46-4	0.4	0.4	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1	1	1	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			Perfluoro-2-methyl-3-oxahexanoic acid (HFPO-DA)	13252-13-6	0.5	0.5	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			4,8-dioxo-3H-perfluorononanoic acid (ADONA)	919005-14-4	1	1	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			11-chloroicosafuoro-3-oxadecane-1-sulfonic acid (11Cl-PF3OUdS)	763051-92-9	1	1	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	0.5	0.5	NG L	U	U	U
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			13C5-PFHxA	BDO-2217	93	93	PCT_REC			
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			13C4-PFHpA	BDO-2218	96	96	PCT_REC			
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			13C8-PFOA	BDO-2219	100	100	PCT_REC			
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			13C9-PFNA	BDO-2221	97	97	PCT_REC			
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			13C6-PFDA	BDO-2222	82	82	PCT_REC			
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			13C7-PFUnA	BDO-2223	87	87	PCT_REC			
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			13C2-PFDoA	BDO-2112	74	74	PCT_REC			
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			13C2-PFTeDA	BDO-2224	77	77	PCT_REC			
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			d3-MeFOSAA	BDO-1838	120	120	PCT_REC			
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			d5-EtFOSAA	BDO-1839	130	130	PCT_REC			
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			13C3-PFBS	BDO-2226	93	93	PCT_REC			
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			13C3-PFHxS	BDO-2227	90	90	PCT_REC			
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			13C8-PFOS	BDO-2228	88	88	PCT_REC			
		20201110	12:27:00	20201112	13:44:00	DB332PB-FS	1	1			13C3-HFPO-DA	BDO-2276	83	83	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			Perfluorohexanoic Acid (PFHxA)	307-24-4	103	103	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			Perfluoroheptanoic Acid (PFHpA)	375-85-9	98	98	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			Perfluorooctanoic Acid (PFOA)	335-67-1	108	108	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			Perfluorononanoic Acid (PFNA)	375-95-1	103	103	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			Perfluorodecanoic Acid (PFDA)	335-76-2	103	103	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			Perfluoroundecanoic Acid (PFUnA)	2058-94-8	91	91	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			Perfluorododecanoic Acid (PFDoA)	307-55-1	99	99	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			Perfluorotridecanoic Acid (PFTeDA)	72629-94-8	106	106	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			Perfluorotetradecanoic Acid (PFTeDA)	376-06-7	108	108	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	2355-31-9	98	98	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	2991-50-6	97	97	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			Perfluorobutanesulfonic acid (PFBS)	375-73-5	104	104	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			Perfluorohexanesulfonic acid (PFHxS)	355-46-4	115	115	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			Perfluorooctane Sulfonate (PFOS)	1763-23-1	100	100	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			Perfluoro-2-methyl-3-oxahexanoic acid (HFPO-DA)	13252-13-6	98	98	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			4,8-dioxo-3H-perfluorononanoic acid (ADONA)	919005-14-4	105	105	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			11-chloroicosafuoro-3-oxadecane-1-sulfonic acid (11Cl-PF3OUdS)	763051-92-9	108	108	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	102	102	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			13C5-PFHxA	BDO-2217	91	91	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			13C4-PFHpA	BDO-2218	91	91	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			13C8-PFOA	BDO-2219	92	92	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			13C9-PFNA	BDO-2221	93	93	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			13C6-PFDA	BDO-2222	92	92	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			13C7-PFUnA	BDO-2223	96	96	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			13C2-PFDoA	BDO-2112	90	90	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			13C2-PFTeDA	BDO-2224	88	88	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			d3-MeFOSAA	BDO-1838	98	98	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			d5-EtFOSAA	BDO-1839	95	95	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			13C3-PFBS	BDO-2226	86	86	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			13C3-PFHxS	BDO-2227	81	81	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			13C8-PFOS	BDO-2228	86	86	PCT_REC			
		20201110	12:27:00	20201112	13:54:52	DB333LCs-FS	1	1			13C3-HFPO-DA	BDO-2276	92	92	PCT_REC			
		20201110	12:27:00	20201112	14:27:29	G1707-FS1	12.5	6			Perfluorohexanoic Acid (PFHxA)	307-24-4	186	186	NG L	TD	Exclude	Exclude
		20201110	12:27:00	20201112	14:27:29	G1707-FS1	12.5	6			Perfluoroheptanoic Acid (PFHpA)	375-85-9	110	110	NG L	TD	Exclude	Exclude
		20201110	12:27:00	20201112	14:27:29	G1707-FS1	12.5	6			Perfluorooctanoic Acid (PFOA)	335-67-1	508	508	NG L	TD	Exclude	Exclude
		20201110	12:27:00	20201112	14:05:44	G1707-FS1	1	2			Perfluorononanoic Acid (PFNA)	375-95-1	50.3	50.3	NG L	T	Exclude	Exclude
		20201110	12:27:00	20201112	14:05:44	G1707-FS1	1	2			Perfluorodecanoic Acid (PFDA)	335-76-2	0.48	0.48	NG L	UT	Exclude	Exclude
		20201110	12:27:00	20201112	14:05:44	G1707-FS1	1	2			Perfluoroundecanoic Acid (PFUnA)	2058-94-8	0.48	0.48	NG L	UT	Exclude	Exclude
		20201110	12:27:00	20201112	14:05:44	G1707-FS1	1	2			Perfluorododecanoic Acid (PFDoA)	307-55-1	0.48	0.48	NG L	UT	Exclude	Exclude
		20201110	12:27:00	20201112	14:05:44	G1707-FS1	1	2			Perfluorotridecanoic Acid (PFTeDA)	72629-94-8	0.48	0.48	NG L	UT	Exclude	Exclude
		20201110	12:27:00	20201112	14:05:44	G1707-FS1	1	2			Perfluorotetradecanoic Acid (PFTeDA)	376-06-7	1.92	1.92	NG L	UT	Exclude	Exclude
		20201110	12:27:00	20201112	14:05:44	G1707-FS1	1	2			N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	2355-31-9	0.96	0.96	NG L	UT	Exclude	Exclude
		20201110	12:27:00															

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
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			Perfluorooctanoic acid (PFOA)	335-67-1	19.5	19.5	NG L	T	Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			Perfluorononanoic acid (PFNA)	375-95-1	6.48	6.48	NG L	T	Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			Perfluorodecanoic Acid (PFDA)	335-76-2	0.47	0.47	NG L	UT	Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			Perfluoroundecanoic Acid (PFUnA)	2058-94-8	0.47	0.47	NG L	UT	Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			Perfluorododecanoic Acid (PFDoA)	307-55-1	0.47	0.47	NG L	UT	Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			Perfluorotridecanoic Acid (PFTriDA)	72629-94-8	0.47	0.47	NG L	UT	Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			Perfluorotetradecanoic Acid (PFTeDA)	376-06-7	1.89	1.89	NG L	UT	Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			N-Methyl Perfluorooctanesulfonamidoacetic Acid (MeFOSAA)	2355-31-9	0.94	0.94	NG L	UT	Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			N-Ethyl Perfluorooctanesulfonamidoacetic Acid (EtFOSAA)	2991-50-6	0.94	0.94	NG L	UT	Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			Perfluorobutanesulfonic acid (PFBS)	375-73-5	9.72	9.72	NG L	T	Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			Perfluorohexanesulfonic acid (PFHxS)	355-46-4	103	103	NG L	T	Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			Perfluorooctane Sulfonate (PFOS)	1763-23-1	84.1	84.1	NG L	T	Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			Perfluoro-2-methyl-3-oxahexanoic acid (HFPO-DA)	13252-13-6	0.47	0.47	NG L	UT	Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			4,8-dioxo-3H-perfluorononanoic acid (ADONA)	91905-14-4	0.94	0.94	NG L	UT	Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			11-chlorooctadecafluoro-3-oxadecane-1-sulfonic acid (11Cl PF30UdS)	763051-92-9	0.94	0.94	NG L	UT	Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	0.47	0.47	NG L	UT	Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			13C5-PFHxA	BDO-2217	72	72	PCT REC		Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			13C4-PFHpA	BDO-2218	80	80	PCT REC		Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			13C8-PFOA	BDO-2219	81	81	PCT REC		Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			13C9-PFNA	BDO-2221	87	87	PCT REC		Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			13C6-PFNA	BDO-2222	89	89	PCT REC		Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			13C7-PFUnA	BDO-2223	90	90	PCT REC		Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			13C2-PFDoA	BDO-2212	86	86	PCT REC		Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			13C2-PFTeDA	BDO-2224	78	78	PCT_REC		Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			d3-MeFOSAA	BDO-1838	97	97	PCT_REC		Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			d5-EtFOSAA	BDO-1839	98	98	PCT_REC		Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			13C3-PFBS	BDO-2226	83	83	PCT_REC		Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			13C3-PFHxS	BDO-2227	81	81	PCT_REC		Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			13C8-PFOS	BDO-2228	92	92	PCT_REC		Exclude	Exclude
		20201110	12:27:00	20201112	14:38:21	G1708-FS1	1	2			13C3-HFOA-DA	BDO-2276	69	69	PCT_REC		Exclude	Exclude

GC_Column_Type	Analysis_Result_Type	Result_Narrative	QC_Control_Limit_Code	QC_Accuracy_Upper	QC_Accuracy_Lower	Control_Limit_Date	QC_Narrative	MDL	Detection_Limit	QSM_Version	DL	LOD	LOQ	SDG	Analysis_Batch	Validation_QC	Validator_Name	Val_Date
TRG							RE			5.3	0.48	1.42	4.72	20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
TRG							RE			5.3	0.29	0.94	4.72	20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
TRG							RE			5.3	0.13	0.47	4.72	20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
TRG							RE			5.3	0.2	0.47	4.72	20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
TRG							RE			5.3	0.18	0.47	4.72	20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
TRG							RE			5.3	0.14	0.47	4.72	20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
TRG							RE			5.3	0.69	1.89	4.72	20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
TRG							RE			5.3	0.33	0.94	4.72	20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
TRG							RE			5.3	0.47	0.94	4.72	20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
TRG							RE			5.3	0.13	0.47	4.72	20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
TRG							RE			5.3	0.1	0.37	4.72	20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
TRG							RE			5.3	0.41	0.94	4.72	20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
TRG							RE			5.3	0.23	0.47	4.72	20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
TRG							RE			5.3	0.25	0.94	4.72	20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
TRG							RE			5.3	0.21	0.94	4.72	20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
TRG							RE			5.3	0.25	0.47	4.72	20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
SURR			SLSP	150	50	20171116	RE			5.3				20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
SURR			SLSP	150	50	20171116	RE			5.3				20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
SURR			SLSP	150	50	20171116	RE			5.3				20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
SURR			SLSP	150	50	20171116	RE			5.3				20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
SURR			SLSP	150	50	20171116	RE			5.3				20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
SURR			SLSP	150	50	20171116	RE			5.3				20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
SURR			SLSP	150	50	20171116	RE			5.3				20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
SURR			SLSP	150	50	20171116	RE			5.3				20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
SURR			SLSP	150	50	20171116	RE			5.3				20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
SURR			SLSP	150	50	20171116	RE			5.3				20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
SURR			SLSP	150	50	20171116	RE			5.3				20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
SURR			SLSP	150	50	20171116	RE			5.3				20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
SURR			SLSP	150	50	20171116	RE			5.3				20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115
SURR			SLSP	150	50	20171116	RE			5.3				20-1455	DP-20-1335	FULL_VALIDATION	ENVIRONMENTAL DATA SERVICES INC	20210115

**DATA VALIDATION SUMMARY REPORT
NAVAL RESEARCH LABORATORY, MARYLAND**

Client: CH2M HILL, Inc., Herndon, Virginia
SDG: 20-1455
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-MW15-1020	G1707-FS1	Water
2	CBD-AOA-MW16-1020	G1708-FS1	Water

A Stage 2B/4 data validation was performed on the analytical data for two water samples collected on October 16, 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 serious deficiencies 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

- All samples were extracted outside of the 14-day holding time at 25 days for water samples and analyzed within 28 days. All results were qualified (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 sample results are summarized below.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
CBD-FB04-101620	PFTrDA	0.179	None	All Samples ND
CBD-EB01-101420-GW	None - ND	-	-	-

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate percent recoveries (%R) except for the following. One compound exhibited low percent recoveries in EDS Sample 1. However, this result was already qualified due to holding time exceedances.

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

- All samples were re-extracted outside of holding times from SDG 20-1310 to verify surrogate recovery deficiencies. Use the original results in SDG 20-1310 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 Dated: 1/14/21
Nancy Weaver
Senior Chemist

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	<p>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.</p> <p>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.</p>



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

Client ID: CBD-AOA-MW15-1020

Battelle ID: G1707-F51
 Sample Type: SA
 Collection Date: 10/16/2020
 Extraction Date: 11/10/2020
 Analytical Instrument: Sciex 5500 (AC) LC/MS/MS
 % Moisture: NA
 Matrix: GW
 Sample Size: 0.260
 Size Unit-Basis: L

Use original results in 20-1310

Analyte	CAS No.	Result (ng/L)	Extract ID	DF	Analysis		DL	LOD	LOQ
					Date				
PFHxA	307-24-4	186 TD	G1707-F51-D(5)	12.500	11/12/2020	6.33	18.0	60.1	
PFHpA	375-85-9	110 TD	G1707-F51-D(3)	5.000	11/12/2020	1.26	4.81	24.0	
PFOA	335-67-1	508 TD	G1707-F51-D(5)	12.500	11/12/2020	6.14	18.0	60.1	
PFNA	375-95-1	50.3 T	G1707-F51(0)	1.000	11/12/2020	0.297	0.962	4.81	
PFDA	335-76-2	0.481 UT	G1707-F51(0)	1.000	11/12/2020	0.137	0.481	4.81	
PFUnA	2058-94-8	0.481 UT	G1707-F51(0)	1.000	11/12/2020	0.211	0.481	4.81	
PFDoA	307-55-1	0.481 UT	G1707-F51(0)	1.000	11/12/2020	0.185	0.481	4.81	
PFTrDA	72629-94-8	0.481 UT	G1707-F51(0)	1.000	11/12/2020	0.148	0.481	4.81	
PFTeDA	376-06-7	1.92 UT	G1707-F51(0)	1.000	11/12/2020	0.705	1.92	4.81	
NMeFOSAA	2355-31-9	0.962 UT	G1707-F51(0)	1.000	11/12/2020	0.337	0.962	4.81	
NEtFOSAA	2991-50-6	0.962 UT	G1707-F51(0)	1.000	11/12/2020	0.481	0.962	4.81	
PFBS	375-73-5	33.4 T	G1707-F51(0)	1.000	11/12/2020	0.138	0.481	4.81	
PFHxS	355-46-4	1060 TD	G1707-F51-D(5)	12.500	11/12/2020	1.35	4.81	60.1	
PFOS	1763-23-1	41.1 T	G1707-F51(0)	1.000	11/12/2020	0.420	0.962	4.81	
HFPO-DA	13252-13-6	0.481 UT	G1707-F51(0)	1.000	11/12/2020	0.238	0.481	4.81	
Adona	919005-14-4	0.962 UT	G1707-F51(0)	1.000	11/12/2020	0.255	0.962	4.81	
9CI-PF3ONS	756426-58-1	0.481 UT	G1707-F51(0)	1.000	11/12/2020	0.258	0.481	4.81	
11CI-PF3OUdS	763051-92-9	0.962 UT	G1707-F51(0)	1.000	11/12/2020	0.222	0.962	4.81	

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 Analyzed by: Griffith, Lauren
 Printed: 11/16/2020



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

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Client ID CBD-AOA-MW16-1020

Battelle ID G1708-F51
 Sample Type SA
 Collection Date 10/16/2020
 Extraction Date 11/10/2020
 Analytical Instrument Sciex 5500 (AC) LC/MS/MS
 % Moisture NA
 Matrix GW
 Sample Size 0.265
 Size Unit-Basis L

Use original results in 20-1310

Analyte	CAS No.	Result (ng/L)	DF	Extract ID	Analysis Date	DL	LOD	LOQ
PFHxA	307-24-4	29.1 T	1.000	G1708-F51(0)	11/12/2020	0.497	1.42	4.72
PFHpA	375-85-9	8.32 T	1.000	G1708-F51(0)	11/12/2020	0.248	0.943	4.72
PFOA	335-67-1	19.5 T	1.000	G1708-F51(0)	11/12/2020	0.482	1.42	4.72
PFNA	375-95-1	6.48 T	1.000	G1708-F51(0)	11/12/2020	0.292	0.943	4.72
PFDA	335-76-2	0.472 UT	1.000	G1708-F51(0)	11/12/2020	0.134	0.472	4.72
PFUnA	2058-94-8	0.472 UT	1.000	G1708-F51(0)	11/12/2020	0.207	0.472	4.72
PFDoA	307-55-1	0.472 UT	1.000	G1708-F51(0)	11/12/2020	0.181	0.472	4.72
PFTrDA	72629-94-8	0.472 UT	1.000	G1708-F51(0)	11/12/2020	0.145	0.472	4.72
PFTeDA	376-06-7	1.89 UT	1.000	G1708-F51(0)	11/12/2020	0.692	1.89	4.72
NMeFOSAA	2355-31-9	0.943 UT	1.000	G1708-F51(0)	11/12/2020	0.330	0.943	4.72
NEtFOSAA	2991-50-6	0.943 UT	1.000	G1708-F51(0)	11/12/2020	0.472	0.943	4.72
PFBS	375-73-5	9.72 T	1.000	G1708-F51(0)	11/12/2020	0.136	0.472	4.72
PFHxS	355-46-4	103 T	1.000	G1708-F51(0)	11/12/2020	0.106	0.377	4.72
PFOS	1763-23-1	84.1 T	1.000	G1708-F51(0)	11/12/2020	0.412	0.943	4.72
HFPO-DA	13252-13-6	0.472 UT	1.000	G1708-F51(0)	11/12/2020	0.234	0.472	4.72
Adona	919005-14-4	0.943 UT	1.000	G1708-F51(0)	11/12/2020	0.250	0.943	4.72
9CI-PF3ONS	756426-58-1	0.472 UT	1.000	G1708-F51(0)	11/12/2020	0.253	0.472	4.72
11CI-PF3OUdS	763051-92-9	0.943 UT	1.000	G1708-F51(0)	11/12/2020	0.218	0.943	4.72

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Analyzed by: Griffith, Lauren
 Printed: 11/16/2020

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-MW15	SITE 00010	CHESAPEAKE_BEACH_NRL	WLM	Monitoring well	20-1455	1446145.1	360471.82	Perfluoroalkyl Compounds	CBD-AOA-MW15-1020	WG	Ground water	16-Oct-20
CBD-AOA-MW16	SITE 00010	CHESAPEAKE_BEACH_NRL	WLM	Monitoring well	20-1455	1446709.55	360086.2	Perfluoroalkyl Compounds	CBD-AOA-MW16-1020	WG	Ground water	16-Oct-20