



AGRICULTURE &amp; PRIORITY POLLUTANTS LABORATORIES

A METIRI GROUP COMPANY

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NELAP Certification Number: CA00046

DoD-ELAP Certification Number 4064.01

State Certification Number:

March 23, 2023

Watson Tanji  
AECOM Honolulu  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

RE: Red Hill AFFF Assessment Sampling  
23C0146

Enclosed are the results of analyses for samples received by our laboratory on 3/16/2023. If you have any questions concerning this report, please feel free to contact me.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness. These test results meet all requirements of NELAC and DoD QSM. Release of the hard copy has been authorized by the Laboratory Manager or designee, as verified by the following signature.

Sincerely,

Karen Volpendesta  
Project Manager

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# Data Validatable Report

## Work Order Case Narrative

As directed, this report was amended to update the IDs for sample RHS-IF-TRAIN-01-031523-N-R1 to RHSF-PUMP-PR-01-031523-N and RHS-EF-TRAIN-01-031523-N-R1 to RHS-EF-TRAIN-01-031523-N. A revised Chain of Custody was provided via email on March 17, 2023.

## Analysis Case Narrative

**EPA 1633:** Manual integrations were performed for this method in accordance with APPL's SOP. Chromatograms after manual integration are enclosed for specific samples and analytes. Abbreviated flags for technical justification are listed on the chromatogram.

Some extracted internal standards recovered outside of control limits in some samples; these samples were diluted and recovered in control, unless stated otherwise.

The extracted internal standard 13C2-4:2FTS recovered above the upper control limit in sample 02 - RHS-EF-TRAIN-01-031523-N.

The extracted internal standards 134-PFHpA and 13C2-4:2FTS, recovered above the upper control limit in the BCC0177-BLK1.

The extracted internal standards 134-PFHpA and 13C2-4:2FTS recovered above the upper control limit in the BCC0177-BS1.

The analytes PFBA, PFHxA, and 11CL-PF3OUDS recovered above the upper control limit in the BCC0177-MRL1. The extracted internal standard 13C2-4:2FTS recovered above the upper control limit.

The analytes PFEEESA, 9CL-PF3ONS, 11CL-PF3OUDS recovered above the upper control limit in the SC01124-LCV1. The analyte 5:3FTCA recovered below the lower control limit.

The analyte PFDoS recovered above the upper control limit in the SC01124-CCV1.

The analyte PFPeS recovered above the upper control limit in the SC01124-CCV2.

The analyte 9CL-PF3ONS recovered above the upper control limit in the SC01124-CCV4.

## Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
23C0146-01	RHSF-PUMP-PR-01-031523-N	Water	03/15/2023 12:00	03/16/2023
23C0146-02	RHS-EF-TRAIN-01-031523-N	Water	03/15/2023 11:25	03/16/2023

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### Containers Received

Lab ID	Container Type	Count	Preservation Check
23C0146-01	500mL P	2	
23C0146-02	500mL P	2	

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## Sample Results

**Sample: RHSF-PUMP-PR-01-031523-N**  
**23C0146-01 (Water)**

### Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.65 J	1.4	0.69	0.18	ng/L	03/21/23	1	EPA 1633	BCC0177
PFPEA	0.92	0.69	0.34	0.056	ng/L	03/21/23	1	EPA 1633	BCC0177
PFHXA	0.72	0.34	0.17	0.047	ng/L	03/21/23	1	EPA 1633	BCC0177
PFHPA	0.48	0.34	0.17	0.035	ng/L	03/21/23	1	EPA 1633	BCC0177
PFOA	0.73	0.34	0.26	0.13	ng/L	03/21/23	1	EPA 1633	BCC0177
PFNA	0.17 U	0.34	0.17	0.070	ng/L	03/21/23	1	EPA 1633	BCC0177
PFDA	0.17 U	0.34	0.17	0.087	ng/L	03/21/23	1	EPA 1633	BCC0177
PFUnA	0.26 U	0.34	0.26	0.14	ng/L	03/21/23	1	EPA 1633	BCC0177
PFDOA	0.17 U	0.34	0.17	0.096	ng/L	03/21/23	1	EPA 1633	BCC0177
PFTRDA	0.26 U	0.34	0.26	0.18	ng/L	03/21/23	1	EPA 1633	BCC0177
PFTEDA	0.26 U	0.34	0.26	0.17	ng/L	03/21/23	1	EPA 1633	BCC0177
PFBS	0.60	0.34	0.17	0.032	ng/L	03/21/23	1	EPA 1633	BCC0177
PFPEs	0.093 J	0.34	0.17	0.054	ng/L	03/21/23	1	EPA 1633	BCC0177
PFHXS	0.83	0.34	0.17	0.027	ng/L	03/21/23	1	EPA 1633	BCC0177
PFHPS	0.17 U IR1,	0.34	0.17	0.044	ng/L	03/21/23	1	EPA 1633	BCC0177
PFOS	0.76	0.34	0.17	0.055	ng/L	03/21/23	1	EPA 1633	BCC0177
PFNS	0.17 U	0.34	0.17	0.11	ng/L	03/21/23	1	EPA 1633	BCC0177
PFDS	0.26 U	0.34	0.26	0.13	ng/L	03/21/23	1	EPA 1633	BCC0177
PFDOS	0.17 U	0.34	0.17	0.11	ng/L	03/21/23	1	EPA 1633	BCC0177
4:2FTS	0.69 U	1.4	0.69	0.25	ng/L	03/21/23	1	EPA 1633	BCC0177
6:2FTS	0.69 U	1.4	0.69	0.27	ng/L	03/21/23	1	EPA 1633	BCC0177
8:2FTS	0.69 U	1.4	0.69	0.071	ng/L	03/21/23	1	EPA 1633	BCC0177
PFOSA	0.17 U	0.34	0.17	0.090	ng/L	03/21/23	1	EPA 1633	BCC0177
NMeFOSA	0.69 U	1.4	0.69	0.41	ng/L	03/21/23	1	EPA 1633	BCC0177
NEtFOSA	0.69 U	1.4	0.69	0.35	ng/L	03/21/23	1	EPA 1633	BCC0177
NMeFOSAA	0.17 U	0.34	0.17	0.091	ng/L	03/21/23	1	EPA 1633	BCC0177
NEtFOSAA	0.17 U	0.34	0.17	0.099	ng/L	03/21/23	1	EPA 1633	BCC0177
NMeFOSE	1.0 U	1.4	1.0	0.87	ng/L	03/21/23	1	EPA 1633	BCC0177
NEtFOSE	1.0 U	1.4	1.0	0.90	ng/L	03/21/23	1	EPA 1633	BCC0177
HFPO-DA	0.34 U	0.69	0.34	0.15	ng/L	03/21/23	1	EPA 1633	BCC0177
ADONA	0.34 U	0.69	0.34	0.11	ng/L	03/21/23	1	EPA 1633	BCC0177
PFEESA	0.34 U	0.69	0.34	0.094	ng/L	03/21/23	1	EPA 1633	BCC0177
PFMPA	0.34 U	0.69	0.34	0.046	ng/L	03/21/23	1	EPA 1633	BCC0177
PFMBA	0.34 U	0.69	0.34	0.078	ng/L	03/21/23	1	EPA 1633	BCC0177
NFDHA	0.34 U	0.69	0.34	0.26	ng/L	03/21/23	1	EPA 1633	BCC0177
9CL-PF3ONS	0.34 U	0.69	0.34	0.18	ng/L	03/21/23	1	EPA 1633	BCC0177
11CL-PF3OUDS	0.34 U	0.69	0.34	0.18	ng/L	03/21/23	1	EPA 1633	BCC0177
3:3FTCA	0.69 U	1.4	0.69	0.49	ng/L	03/21/23	1	EPA 1633	BCC0177
5:3FTCA	0.69 U	1.4	0.69	0.38	ng/L	03/21/23	1	EPA 1633	BCC0177
7:3FTCA	0.69 U	1.4	0.69	0.48	ng/L	03/21/23	1	EPA 1633	BCC0177
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Surrogate: 13C4-PFBA	81.7%		10-130			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C5-PFPEA	92.7%		35-150			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C5-PFHXA	97.1%		55-150			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C4-PFHPA	102%		55-150			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C8-PFOA	89.9%		60-140			03/21/23	1	EPA 1633	BCC0177

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## Sample Results (Continued)

**Sample: RHSF-PUMP-PR-01-031523-N (Continued)**  
**23C0146-01 (Water)**

### Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	95.4%		55-140			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C6-PFDA	90.9%		50-140			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C7-PFUnA	75.6%		30-140			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C2-PFDOA	82.0%		10-150			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C2-PFTEDA	62.6%		10-130			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C3-PFBS	84.6%		55-150			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C3-PFHXS	87.6%		55-150			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C8-PFOS	86.3%		45-140			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C2-4:2FTS	196%		60-200			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C2-6:2FTS	137%		60-200			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C2-8:2FTS	209% S2		50-200			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C2-8:2FTS	166%		50-200			03/21/23	10	EPA 1633	BCC0177
Surrogate: 13C8-PFOA	65.9%		30-130			03/21/23	1	EPA 1633	BCC0177
Surrogate: D3-NMEFOA	24.5%		15-130			03/21/23	1	EPA 1633	BCC0177
Surrogate: D5-NETFOA	22.4%		10-130			03/21/23	1	EPA 1633	BCC0177
Surrogate: D3-NMEFOA	118%		45-200			03/21/23	1	EPA 1633	BCC0177
Surrogate: D5-NETFOA	84.7%		10-200			03/21/23	1	EPA 1633	BCC0177
Surrogate: D7-NMEFOE	33.9%		10-150			03/21/23	1	EPA 1633	BCC0177
Surrogate: D9-NETFOE	42.3%		10-150			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C3-HFPO-DA	98.9%		25-160			03/21/23	1	EPA 1633	BCC0177

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### Sample Results (Continued)

**Sample: RHS-EF-TRAIN-01-031523-N  
23C0146-02 (Water)**

#### Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	0.63 J	1.4	0.71	0.18	ng/L	03/21/23	1	EPA 1633	BCC0177
PFPEA	0.35 U	0.71	0.35	0.058	ng/L	03/21/23	1	EPA 1633	BCC0177
PFHXA	0.18 U	0.35	0.18	0.049	ng/L	03/21/23	1	EPA 1633	BCC0177
PFHPA	0.18 U	0.35	0.18	0.036	ng/L	03/21/23	1	EPA 1633	BCC0177
PFOA	0.27 U	0.35	0.27	0.13	ng/L	03/21/23	1	EPA 1633	BCC0177
PFNA	0.18 U	0.35	0.18	0.072	ng/L	03/21/23	1	EPA 1633	BCC0177
PFDA	0.18 U	0.35	0.18	0.090	ng/L	03/21/23	1	EPA 1633	BCC0177
PFUnA	0.27 U	0.35	0.27	0.14	ng/L	03/21/23	1	EPA 1633	BCC0177
PFDOA	0.18 U	0.35	0.18	0.099	ng/L	03/21/23	1	EPA 1633	BCC0177
PFTRDA	0.27 U	0.35	0.27	0.18	ng/L	03/21/23	1	EPA 1633	BCC0177
PFTEDA	0.27 U	0.35	0.27	0.18	ng/L	03/21/23	1	EPA 1633	BCC0177
PFBS	0.037 J IR2,	0.35	0.18	0.033	ng/L	03/21/23	1	EPA 1633	BCC0177
PFPEs	0.18 U IR1,	0.35	0.18	0.055	ng/L	03/21/23	1	EPA 1633	BCC0177
PFHXS	0.18 U	0.35	0.18	0.028	ng/L	03/21/23	1	EPA 1633	BCC0177
PFHPS	0.18 U	0.35	0.18	0.045	ng/L	03/21/23	1	EPA 1633	BCC0177
PFOS	0.11 J	0.35	0.18	0.056	ng/L	03/21/23	1	EPA 1633	BCC0177
PFNS	0.18 U	0.35	0.18	0.11	ng/L	03/21/23	1	EPA 1633	BCC0177
PFDS	0.27 U	0.35	0.27	0.13	ng/L	03/21/23	1	EPA 1633	BCC0177
PFDOS	0.18 U	0.35	0.18	0.11	ng/L	03/21/23	1	EPA 1633	BCC0177
4:2FTS	0.71 U	1.4	0.71	0.26	ng/L	03/21/23	1	EPA 1633	BCC0177
6:2FTS	0.71 U	1.4	0.71	0.28	ng/L	03/21/23	1	EPA 1633	BCC0177
8:2FTS	0.14 J	1.4	0.71	0.073	ng/L	03/21/23	1	EPA 1633	BCC0177
PFOSA	0.18 U	0.35	0.18	0.092	ng/L	03/21/23	1	EPA 1633	BCC0177
NMeFOSA	0.71 U	1.4	0.71	0.42	ng/L	03/21/23	1	EPA 1633	BCC0177
NEtFOSA	0.71 U	1.4	0.71	0.37	ng/L	03/21/23	1	EPA 1633	BCC0177
NMeFOSAA	0.18 U	0.35	0.18	0.094	ng/L	03/21/23	1	EPA 1633	BCC0177
NEtFOSAA	0.18 U	0.35	0.18	0.10	ng/L	03/21/23	1	EPA 1633	BCC0177
NMeFOSE	1.1 U	1.4	1.1	0.90	ng/L	03/21/23	1	EPA 1633	BCC0177
NEtFOSE	1.1 U	1.4	1.1	0.93	ng/L	03/21/23	1	EPA 1633	BCC0177
HFPO-DA	0.35 U	0.71	0.35	0.15	ng/L	03/21/23	1	EPA 1633	BCC0177
ADONA	0.35 U	0.71	0.35	0.11	ng/L	03/21/23	1	EPA 1633	BCC0177
PFEESA	0.35 U	0.71	0.35	0.096	ng/L	03/21/23	1	EPA 1633	BCC0177
PFMPA	0.35 U	0.71	0.35	0.048	ng/L	03/21/23	1	EPA 1633	BCC0177
PFMBA	0.35 U	0.71	0.35	0.080	ng/L	03/21/23	1	EPA 1633	BCC0177
NFDHA	0.35 U	0.71	0.35	0.27	ng/L	03/21/23	1	EPA 1633	BCC0177
9CL-PF3ONS	0.35 U	0.71	0.35	0.19	ng/L	03/21/23	1	EPA 1633	BCC0177
11CL-PF3OUDS	0.35 U	0.71	0.35	0.18	ng/L	03/21/23	1	EPA 1633	BCC0177
3:3FTCA	0.71 U	1.4	0.71	0.51	ng/L	03/21/23	1	EPA 1633	BCC0177
5:3FTCA	0.71 U	1.4	0.71	0.39	ng/L	03/21/23	1	EPA 1633	BCC0177
7:3FTCA	0.71 U	1.4	0.71	0.49	ng/L	03/21/23	1	EPA 1633	BCC0177
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Surrogate: 13C4-PFBA	78.5%		10-130			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C5-PFPEA	116%		35-150			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C5-PFHXA	122%		55-150			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C4-PFHPA	133%		55-150			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C8-PFOA	92.1%		60-140			03/21/23	1	EPA 1633	BCC0177



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## Sample Results (Continued)

**Sample: RHS-EF-TRAIN-01-031523-N (Continued)**  
**23C0146-02 (Water)**

### Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	84.2%		55-140			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C6-PFDA	89.2%		50-140			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C7-PFUnA	80.8%		30-140			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C2-PFDOA	80.9%		10-150			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C2-PFTEDA	73.7%		10-130			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C3-PFBS	82.3%		55-150			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C3-PFHXS	88.9%		55-150			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C8-PFOS	81.3%		45-140			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C2-4:2FTS	217% S2		60-200			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C2-4:2FTS	216% S2		60-200			03/21/23	10	EPA 1633	BCC0177
Surrogate: 13C2-6:2FTS	116%		60-200			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C2-8:2FTS	179%		50-200			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C8-PFOA	63.4%		30-130			03/21/23	1	EPA 1633	BCC0177
Surrogate: D3-NMEFOA	24.6%		15-130			03/21/23	1	EPA 1633	BCC0177
Surrogate: D5-NETFOA	22.3%		10-130			03/21/23	1	EPA 1633	BCC0177
Surrogate: D3-NMEFOSAA	104%		45-200			03/21/23	1	EPA 1633	BCC0177
Surrogate: D5-NETFOSAA	82.4%		10-200			03/21/23	1	EPA 1633	BCC0177
Surrogate: D7-NMEFOSE	34.7%		10-150			03/21/23	1	EPA 1633	BCC0177
Surrogate: D9-NETFOSE	43.3%		10-150			03/21/23	1	EPA 1633	BCC0177
Surrogate: 13C3-HFPO-DA	121%		25-160			03/21/23	1	EPA 1633	BCC0177

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## Quality Control

### Per- and Polyfluoroalkyl Substances

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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#### Method: EPA 1633

#### Batch: BCC0177 - EPA 1633

#### Blank (BCC0177-BLK1)

Prepared: 03/17/23 11:22 Analyzed: 03/21/23 16:32

	ng/L			
PFBA	0.80 U	1.6	0.80	0.21
PFPEA	0.40 U	0.80	0.40	0.065
PFHXA	0.20 U	0.40	0.20	0.055
PFHPA	0.20 U	0.40	0.20	0.041
PFOA	0.30 U	0.40	0.30	0.15
PFNA	0.20 U	0.40	0.20	0.082
PFDA	0.20 U	0.40	0.20	0.10
PFUnA	0.30 U	0.40	0.30	0.16
PFDOA	0.20 U	0.40	0.20	0.11
PFTRDA	0.30 U	0.40	0.30	0.20
PFTEDA	0.30 U	0.40	0.30	0.20
PFBS	0.20 U	0.40	0.20	0.037
PFPEs	0.20 U IR2,	0.40	0.20	0.063
PFHXS	0.20 U	0.40	0.20	0.032
PFHPS	0.20 U	0.40	0.20	0.051
PFOS	0.0941 J MI2,	0.40	0.20	0.064
PFNS	0.20 U	0.40	0.20	0.12
PFDS	0.30 U	0.40	0.30	0.15
PFDOS	0.20 U	0.40	0.20	0.12
4:2FTS	0.80 U	1.6	0.80	0.29
6:2FTS	0.80 U	1.6	0.80	0.31
8:2FTS	0.80 U	1.6	0.80	0.082
PFOSA	0.295 J	0.40	0.20	0.10
NMeFOSA	0.80 U	1.6	0.80	0.47
NEtFOSA	0.80 U	1.6	0.80	0.41
NMeFOSAA	0.20 U	0.40	0.20	0.11
NEtFOSAA	0.20 U	0.40	0.20	0.11
NMeFOSE	1.2 U	1.6	1.2	1.0
NEtFOSE	1.2 U	1.6	1.2	1.0
HFPO-DA	0.40 U	0.80	0.40	0.17
ADONA	0.40 U	0.80	0.40	0.12
PFEESA	0.40 U	0.80	0.40	0.11
PFMPA	0.40 U	0.80	0.40	0.054
PFMBA	0.40 U	0.80	0.40	0.091
NFDHA	0.40 U	0.80	0.40	0.30
9CL-PF3ONS	0.40 U	0.80	0.40	0.21
11CL-PF3OUDS	0.40 U	0.80	0.40	0.21
3:3FTCA	0.80 U	1.6	0.80	0.57
5:3FTCA	0.80 U	1.6	0.80	0.44
7:3FTCA	0.80 U	1.6	0.80	0.55

#### Surrogates

13C4-PFBA	30.0	32.0	93.9	10-130
13C5-PFPEA	23.4	16.0	146	35-150
13C5-PFHXA	11.7	8.00	147	55-150

AECOM Honolulu  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Project: Red Hill AFFF Assessment Sampling  
Project Number: Red Hill AFFF Assessment Sampling  
Project Manager: Watson Tanji

Reported: 03/23/2023 14:16

### Quality Control (Continued)

#### Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<b>Blank (BCC0177-BLK1)</b>						Prepared: 03/17/23 11:22 Analyzed: 03/21/23 16:32				
	ng/L									
<i>Surrogates</i>										
13C4-PFHFA	13.5 S2				8.00		168	55-150		
13C8-PFOA	9.15				8.00		114	60-140		
13C9-PFNA	3.73				4.00		93.2	55-140		
13C6-PFDA	3.90				4.00		97.5	50-140		
13C7-PFUnA	3.71				4.00		92.7	30-140		
13C2-PFDOA	3.49				4.00		87.2	10-150		
13C2-PFTEDA	3.37				4.00		84.4	10-130		
13C3-PFBS	7.74				8.00		96.8	55-150		
13C3-PFHXS	7.51				8.00		93.9	55-150		
13C8-PFOS	7.05				8.00		88.1	45-140		
13C2-4:2FTS	36.9 S2				16.0		231	60-200		
13C2-6:2FTS	23.6				16.0		147	60-200		
13C2-8:2FTS	23.8				16.0		149	50-200		
13C8-PFOA	6.36				8.00		79.4	30-130		
D3-NMEFOA	2.75				8.00		34.4	15-130		
D5-NETFOA	2.86				8.00		35.7	10-130		
D3-NMEFOSAA	16.7				16.0		104	45-200		
D5-NETFOSAA	12.7				16.0		79.6	10-200		
D7-NMEFOSE	37.6				80.0		47.1	10-150		
D9-NETFOSE	46.2				80.0		57.7	10-150		
13C3-HFPO-DA	43.9				32.0		137	25-160		

#### LCS (BCC0177-BS1)

Prepared: 03/17/23 11:22 Analyzed: 03/21/23 16:45

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
	ng/L									
PFBA	16.0				16.0		100	58-148		
PFPEA	8.01				8.00		100	54-152		
PFHXA	4.00				4.00		100	55-152		
PFHFA	3.60				4.00		90.1	54-154		
PFOA	4.10				4.00		103	52-161		
PFNA	3.67				4.00		91.8	59-149		
PFDA	3.72				4.00		93.0	52-147		
PFUnA	3.76				4.00		94.0	48-159		
PFDOA	3.85				4.00		96.2	64-142		
PFTRDA	3.65				4.00		91.4	49-148		
PFTEDA	3.91				4.00		97.6	47-161		
PFBS	3.49				3.54		98.7	62-144		
PFPEA	4.48				3.76		119	59-151		
PFHXS	3.69				3.66		101	57-146		
PFHPS	3.02				3.82		79.0	55-152		
PFOS	3.16				3.72		85.1	58-149		
PFNS	3.31				3.84		86.3	52-148		
PFDS	3.16				3.86		81.8	51-147		
PFDOS	2.82				3.88		72.7	36-145		
4:2FTS	14.5				15.0		97.0	67-146		
6:2FTS	16.0				15.2		105	61-151		
8:2FTS	14.4				15.4		94.0	63-152		
PFOSA	3.89				4.00		97.2	61-148		

AECOM Honolulu  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Project: Red Hill AFFF Assessment Sampling  
Project Number: Red Hill AFFF Assessment Sampling  
Project Manager: Watson Tanji

Reported: 03/23/2023 14:16

### Quality Control (Continued)

#### Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<b>LCS (BCC0177-BS1)</b>						Prepared: 03/17/23 11:22 Analyzed: 03/21/23 16:45				
	ng/L									
NMeFOSA	16.1				16.0		101	63-145		
NETFOSA	15.5				16.0		97.1	65-139		
NMeFOSAA	3.01				4.00		75.2	58-144		
NETFOSAA	4.17				4.00		104	59-146		
NMeFOSE	15.3				16.0		95.6	71-136		
NETFOSE	14.8				16.0		92.3	69-137		
HFPO-DA	9.88				8.00		123	63-144		
ADONA	7.88				7.56		104	68-146		
PFEESA	7.91				7.12		111	56-151		
PFMPA	7.06				8.00		88.3	51-145		
PFMBA	8.51				8.00		106	55-148		
NFDHA	7.58				8.00		94.7	48-161		
9CL-PF3ONS	10.1				7.48		134	56-156		
11CL-PF3OUDS	9.70				7.56		128	46-156		
3:3FTCA	14.7				16.0		92.1	62-129		
5:3FTCA	12.4				16.0		77.3	63-134		
7:3FTCA	14.4				16.0		89.7	50-138		
<b>Surrogates</b>										
13C4-PFBA	31.5				32.0		98.4	10-130		
13C5-PFPEA	23.4				16.0		146	35-150		
13C5-PFHXA	11.7				8.00		146	55-150		
13C4-PFHFA	12.8 S2				8.00		160	55-150		
13C8-PFOA	8.40				8.00		105	60-140		
13C9-PFNA	3.97				4.00		99.4	55-140		
13C6-PFDA	4.06				4.00		102	50-140		
13C7-PFUa	3.64				4.00		90.9	30-140		
13C2-PFDOA	3.73				4.00		93.2	10-150		
13C2-PFTEDA	3.31				4.00		82.6	10-130		
13C3-PFBS	6.86				8.00		85.7	55-150		
13C3-PFHXS	7.32				8.00		91.5	55-150		
13C8-PFOS	7.88				8.00		98.5	45-140		
13C2-4:2FTS	34.8 S2				16.0		218	60-200		
13C2-6:2FTS	19.1				16.0		120	60-200		
13C2-8:2FTS	23.9				16.0		149	50-200		
13C8-PFOA	6.25				8.00		78.1	30-130		
D3-NMEFOSA	2.19				8.00		27.4	15-130		
D5-NETFOSA	2.08				8.00		26.0	10-130		
D3-NMEFOSAA	17.2				16.0		108	45-200		
D5-NETFOSAA	13.7				16.0		85.9	10-200		
D7-NMEFOSE	33.7				80.0		42.1	10-150		
D9-NETFOSAE	40.5				80.0		50.6	10-150		
13C3-HFPO-DA	43.5				32.0		136	25-160		

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Project: Red Hill AFFF Assessment Sampling  
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Reported: 03/23/2023 14:16

### Quality Control (Continued)

#### Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<b>MRL Check (BCC0177-MRL1)</b>						Prepared: 03/17/23 11:22 Analyzed: 03/21/23 16:58				
	ng/L									
PFBA	1.94 BS2				1.60		121	44-157		
PFPEA	0.946				0.800		118	57-148		
PFHXA	0.607 BS2				0.400		152	62-149		
PFHPA	0.503				0.400		126	56-150		
PFOA	0.422				0.400		106	57-161		
PFNA	0.460				0.400		115	53-157		
PFDA	0.572				0.400		143	43-158		
PFUnA	0.420 IR1				0.400		105	50-155		
PFDOA	0.419 IR2				0.400		105	60-141		
PFTRDA	0.433				0.400		108	52-140		
PFTEDA	0.374 J				0.400		93.4	52-156		
PFBS	0.503				0.354		142	63-145		
PFPEs	0.499				0.376		133	58-144		
PFHXS	0.412				0.366		113	44-158		
PFHPS	0.307 J				0.382		80.3	51-150		
PFOS	0.384 J				0.372		103	43-162		
PFNS	0.382 J				0.384		99.6	46-151		
PFDS	0.372 J				0.386		96.3	50-144		
PFDOS	0.296 J				0.388		76.4	30-138		
4:2FTS	1.57 J				1.50		105	52-158		
6:2FTS	1.46 J				1.52		96.1	48-158		
8:2FTS	1.24 J				1.54		80.6	46-165		
PFOSA	0.428				0.400		107	47-163		
NMeFOSA	1.74				1.60		109	54-155		
NETFOSA	1.71				1.60		107	49-156		
NMeFOSAA	0.320 J				0.400		80.0	32-160		
NETFOSAA	0.317 J				0.400		79.3	51-154		
NMeFOSE	1.84				1.60		115	56-151		
NETFOSE	1.58 J				1.60		98.9	60-147		
HFPO-DA	1.02				0.800		128	58-154		
ADONA	0.853				0.756		113	61-148		
PFEESA	0.800				0.712		112	56-144		
PFMPA	0.710 J				0.800		88.8	48-150		
PFMBA	0.887				0.800		111	49-154		
NFDHA	0.956				0.800		120	47-160		
9CL-PF3ONS	0.994				0.748		133	44-167		
11CL-PF3OUDS	1.21 BS2				0.756		160	36-158		
3:3FTCA	1.42 J				1.60		88.8	32-161		
5:3FTCA	1.47 J				1.60		91.7	39-156		
7:3FTCA	2.01				1.60		126	36-149		
<b>Surrogates</b>										
13C4-PFBA	29.0				32.0		90.7	10-130		
13C5-PFPEA	17.7				16.0		111	35-150		
13C5-PFHXA	8.82				8.00		110	55-150		
13C4-PFHPA	9.67				8.00		121	55-150		
13C8-PFOA	7.51				8.00		93.9	60-140		
13C9-PFNA	3.96				4.00		99.0	55-140		

AECOM Honolulu  
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Project: Red Hill AFFF Assessment Sampling  
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Reported: 03/23/2023 14:16

### Quality Control (Continued)

#### Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<b>MRL Check (BCC0177-MRL1)</b>						Prepared: 03/17/23 11:22 Analyzed: 03/21/23 16:58				
	ng/L									
<b>Surrogates</b>										
13C6-PFDA	3.84				4.00		96.0	50-140		
13C7-PFUnA	3.85				4.00		96.2	30-140		
13C2-PFDOA	3.64				4.00		90.9	10-150		
13C2-PFTEDA	3.21				4.00		80.3	10-130		
13C3-PFBS	7.57				8.00		94.7	55-150		
13C3-PFHXS	7.86				8.00		98.3	55-150		
13C8-PFOS	7.00				8.00		87.5	45-140		
13C2-4:2FTS	38.2 S2				16.0		239	60-200		
13C2-6:2FTS	24.3				16.0		152	60-200		
13C2-8:2FTS	26.0				16.0		163	50-200		
13C8-PFOA	6.28				8.00		78.5	30-130		
D3-NMEFOA	2.45				8.00		30.6	15-130		
D5-NETFOA	2.26				8.00		28.3	10-130		
D3-NMEFOSAA	16.2				16.0		101	45-200		
D5-NETFOSAA	12.7				16.0		79.1	10-200		
D7-NMEFOSE	32.7				80.0		40.9	10-150		
D9-NETFOSE	38.8				80.0		48.5	10-150		
13C3-HFPO-DA	33.4				32.0		104	25-160		

AECOM Honolulu  
1001 Bishop Street, Suite 1600  
Honolulu, HI 96813

Project: Red Hill AFFF Assessment Sampling  
Project Number: Red Hill AFFF Assessment Sampling  
Project Manager: Watson Tanji

Reported: 03/23/2023 14:16

## Notes and Definitions

Item	Definition
BS2	Blank spike recovered above the upper control limit
CV1	Calibration verification recovered below the lower control limit
CV2	Calibration verification recovered above the upper control limit
IR1	Ion ratio below the lower control limit
IR2	Ion ratio above the upper control limit
IS1	Internal standard recovered below the lower control limit
J	Estimated value
MI2	Manual integration, non-target peak interference
S1	Surrogate recovered below the lower control limit
S2	Surrogate recovered above the upper control limit
U	Not detected
Dry	Sample results reported on a dry weight basis.
DF	Dilution Factor
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
*	Value outside control limits
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated.
LOQ, Limit of Quantitation = Method Reporting Limit (MRL).	



# WORK ORDER

## 23C0146

Printed: 03/23/2023 2:17 pm

**Project:** Red Hill AFFF Assessment Sampling  
**Project Number:** Red Hill AFFF Assessment Sampling  
**Project Manager:** Karen Volpendesta  
**PO Number:** 60697810

**Report To:**  
 AECOM Honolulu  
 Watson Tanji  
 1001 Bishop Street, Suite 1600  
 Honolulu, HI 96813  
 Phone: (808) 954-4512  
 Fax: (808) 523-8950

**Invoice To:**  
 AECOM Honolulu  
 Watson Tanji  
 1001 Bishop Street, Suite 1600  
 Honolulu, HI 96813  
 Phone: (808) 954-4512  
 Fax: (808) 523-8950

Date Received: 03/16/2023 09:30 AM  
 Date Due: 03/23/2023 (5.00 day TAT)

Logged In By: Megan Salata  
 Received By: Megan Salata

Analysis	Comments
----------	----------

<b>23C0146-01 RHSF-PUMP-PR-01-031523-N [Water] Sampled 3/15/2023 12:00:00PM</b> 1633 <span style="margin-left: 150px;">NONE</span>	"Report relevant surrogates"
---	------------------------------

<b>23C0146-02 RHS-EF-TRAIN-01-031523-N [Water] Sampled 3/15/2023 11:25:00AM</b> 1633 <span style="margin-left: 150px;">NONE</span>	"Report relevant surrogates"
---	------------------------------

**23C0146 Sample Receipt Log**

Default Cooler

Samples Received at: **-1.7°C**

Custody Seals	Yes	Were all containers sealed in separate bags?	Yes
Containers Intact	Yes	Did all containers arrive in good condition?	Yes
COC/Labels Agree	Yes	Correct containers/preserv. for tests indicated?	Yes
Preservation Confirmed	No	Sufficient volume sent for tests requested?	Yes
Received On Ice	Yes	Were bubbles absent in volatile samples?	No
Was a chain of custody received?	Yes	Sufficient remaining holding time for analyses?	Yes
COCs complete/signed in the appropriate places?	Yes	pH of non-VOA preserved containers documented?	No
Sample labels complete? Sample ID, date/time, etc.	Yes	Unpreserved vials received for VOA analysis?	No
Did all container labels agree with COCs?	Yes	If "yes", are unpreserved VOA vials noted on ARF?	No





Invoice to: PLEASE PRINT

Report to: **AECOM**  
Company Name: **AECOM**  
Address: **1001 Bishop St ste1600**  
**Honolulu, HI 96813**  
**Watson Tanji / Katie Abbott**  
Attn: **watson.tanji@aecom.com/katie.abbott@aecom.com**  
Phone: 808-954-4512 / 303-796-4624  
Fax: \_\_\_\_\_

Company Name: **AECOM**  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_  
Attn: **Sheree Smith**  
Email: **USAPimaging@aecom.com**

PLEASE PRINT

Project Name/Number

CTO N6274223F0104 / 60697810

Purchase Order Number

Sampler (Print)

Sampler (Signature)

Location

Date Collected

Time Collected

Time Zone

No. of Containers

Matrix

Aq

Sed

Soil

Analysis Requested/Method Number

PFAS EPA Draft 1633

Date Shipped:

Carrier: FedEx

Waybill No.:

Comments: EDMS upload  
database: IBPHE

EDMS Coverage: AFFF Assessment  
Sampling GW GAC

Sample Disposal:  
 Return to client  
 Disposal by Lab (30-day retention)

Turnaround Requested: Check one  
 Standard 2-3 wk  
 3 days  
 24/48 Hrs  
Other: 5 day TAT

Relinquished by: \_\_\_\_\_  
Date: 3/15/23

Relinquished by: \_\_\_\_\_  
Date: 3/16/23 9:30

Received by: \_\_\_\_\_  
Date: 3/15/23

Received by: \_\_\_\_\_  
Date: 3/16/23 9:30

Note: The first sampled date of the ARF will be used as the COC number unless indicated otherwise.

**ELECTRONIC CHAIN OF CUSTODY RECORD**

APPL, Inc.  
908 N Temperance Ave  
Clovis, CA 93611  
www.applinc.com

C.O.C. 2303W2AFAL01

PLEASE PRINT

PLEASE PRINT

Report to: **AECOM**

Company Name: **1001 Bishop St ste 1600**

Address: **Honolulu, HI 96813**

Attn: **Watson Tanji / Katie Abbott**

Email: **watson.tanji@aecom.com/katie.abott@aecom.com**

Invoice to: **AECOM**

Company Name: **AECOM**

Address: \_\_\_\_\_

Attn: **Sheree Smith**

Email: **USAPimaging@aecom.com**

Project Name/Number: **CTO N6274223F0104 / 60697810**

Purchase Order Number: \_\_\_\_\_

Sampler (Print): \_\_\_\_\_

Sampler (Signature): \_\_\_\_\_

Location: \_\_\_\_\_

Date Collected: \_\_\_\_\_

Time Collected: \_\_\_\_\_

Time Zone: \_\_\_\_\_

No. of Containers: **2**

Matrix: **Soil**

Analysis Requested/Method Number: \_\_\_\_\_

Date Shipped: \_\_\_\_\_

Carrier: **Fed Ex**

Waybill No.: \_\_\_\_\_

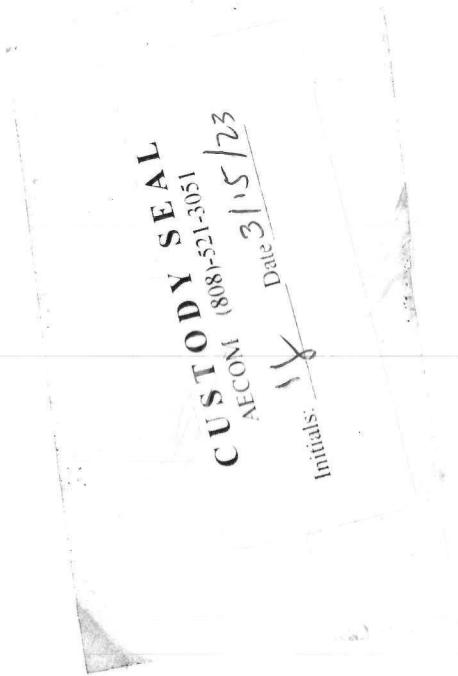
Comments: **EDMS upload**

EDMS Coverage: **AFFF Assessment**

Sampling **GAC**

Shuttle Temperature: \_\_\_\_\_  
 Relinquished by sampler: **Angela Garcia**  
 Relinquished by: \_\_\_\_\_  
 Date: **3/15/23**  
 Time: **1245**  
 Received by: **16:50**  
 Date: \_\_\_\_\_  
 Time: \_\_\_\_\_  
 Received at lab by: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Time: \_\_\_\_\_  
 Received by Lab (30-day retention): \_\_\_\_\_

Note: The first sampled date of the ARF will be used as the COC number unless indicated otherwise.



PFAS

# SAMPLE DATA

**FORM I**  
**ANALYSIS DATA SHEET**  
RHSF-PUMP-PR-01-031523-N

Laboratory:	APPL, LLC	Work Order:	23C0146
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	23C0146-01
		File ID:	S2023-03-21A (18)
Sampled:	03/15/23 12:00	Prepared:	03/17/23 11:22
		Analyzed:	03/21/23 17:37
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	581.1 mL / 2 mL	Instrument:	Saphira
Batch:	BCC0177	Sequence:	SC01124
		Calibration:	2310010

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.65 J	1.4	0.69	0.18	
PFPEA	0.92	0.69	0.34	0.056	
PFHXA	0.72	0.34	0.17	0.047	
PFHPA	0.48	0.34	0.17	0.035	
PFOA	0.73	0.34	0.26	0.13	
PFNA	0.17 U	0.34	0.17	0.070	
PFDA	0.17 U	0.34	0.17	0.087	
PFUnA	0.26 U	0.34	0.26	0.14	
PFDOA	0.17 U	0.34	0.17	0.096	
PFTRDA	0.26 U	0.34	0.26	0.18	
PFTEDA	0.26 U	0.34	0.26	0.17	
PFBS	0.60	0.34	0.17	0.032	
PFPEs	0.093 J	0.34	0.17	0.054	
PFHXS	0.83	0.34	0.17	0.027	
PFHPS	0.17 U	0.34	0.17	0.044	IR1,
PFOS	0.76	0.34	0.17	0.055	
PFNS	0.17 U	0.34	0.17	0.11	
PFDS	0.26 U	0.34	0.26	0.13	
PFDOS	0.17 U	0.34	0.17	0.11	
4:2FTS	0.69 U	1.4	0.69	0.25	
6:2FTS	0.69 U	1.4	0.69	0.27	
8:2FTS	0.69 U	1.4	0.69	0.071	
PFOSA	0.17 U	0.34	0.17	0.090	
NMeFOSA	0.69 U	1.4	0.69	0.41	
NEtFOSA	0.69 U	1.4	0.69	0.35	
NMeFOSAA	0.17 U	0.34	0.17	0.091	
NEtFOSAA	0.17 U	0.34	0.17	0.099	
NMeFOSE	1.0 U	1.4	1.0	0.87	
NEtFOSE	1.0 U	1.4	1.0	0.90	
HFPO-DA	0.34 U	0.69	0.34	0.15	

**FORM I**  
**ANALYSIS DATA SHEET**  
RHSF-PUMP-PR-01-031523-N

Laboratory:	APPL, LLC	Work Order:	23C0146
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	23C0146-01
		File ID:	S2023-03-21A (18)
Sampled:	03/15/23 12:00	Prepared:	03/17/23 11:22
		Analyzed:	03/21/23 17:37
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	581.1 mL / 2 mL	Instrument:	Saphira
Batch:	BCC0177	Sequence:	SC01124
		Calibration:	2310010

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.34 U	0.69	0.34	0.11	
PFEESA	0.34 U	0.69	0.34	0.094	
PFMPA	0.34 U	0.69	0.34	0.046	
PFMBA	0.34 U	0.69	0.34	0.078	
NFDHA	0.34 U	0.69	0.34	0.26	
9CL-PF3ONS	0.34 U	0.69	0.34	0.18	
11CL-PF3OUDS	0.34 U	0.69	0.34	0.18	
3:3FTCA	0.69 U	1.4	0.69	0.49	
5:3FTCA	0.69 U	1.4	0.69	0.38	
7:3FTCA	0.69 U	1.4	0.69	0.48	



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23C0146-01  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (18)  
 Acquired: 2023/03/21 - 17:37

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 27699	(3.63, 1.00) (0.00, N/A, 0.0)	67.1	N/A 0.0 0.0	0.1892	N/A			
PFPeA	(263.0 / 219.0) 62517 (263.0 / 69.0) 663	(4.54, 1.00) (0.00, N/A, -1.6)	234.7 14.9	0.0106 93.7 93.9	0.2664	N/A			
PFHxA	(313.0 / 269.0) 63069 (313.0 / 119.0) 4988	(5.51, 1.00) (0.00, N/A, -0.2)	128.4 2721.1	0.0791 75.1 92.2	0.2104	N/A			
PFHpA	(363.0 / 319.0) 39909 (363.0 / 169.0) 12050	(6.28, 1.00) (-0.01, N/A, 0.1)	178.0 444.1	0.3019 92.6 118.9	0.1396	N/A			
PFOA	(413.0 / 369.0) 91238 (413.0 / 169.0) 22663	(6.96, 1.00) (0.00, N/A, -0.1)	142.1 226.9	0.2484 71.3 81.4	0.2110	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			





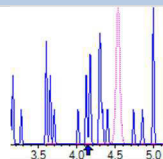
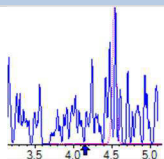
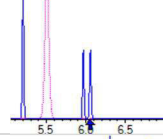
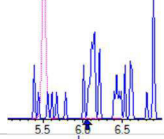
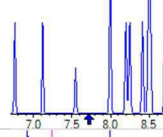
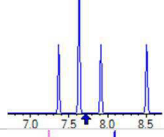
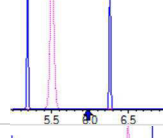
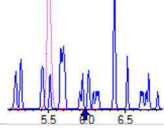
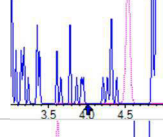
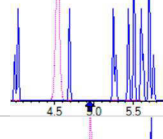
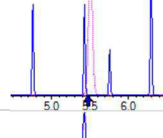
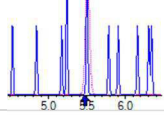
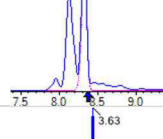
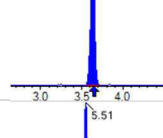
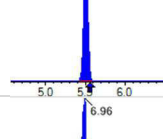
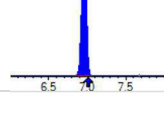
Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

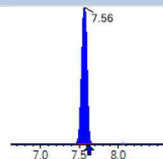
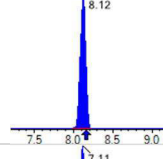
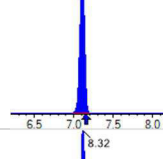
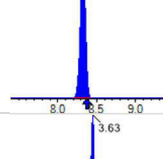
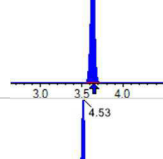
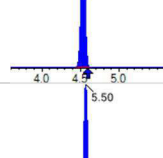
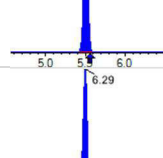
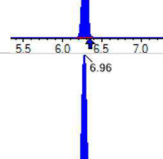
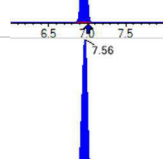
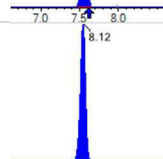
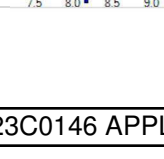
Sample I.D.: 23C0146-01  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (18)  
 Acquired: 2023/03/21 - 17:37

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 85150 (299.0 / 99.0) 54525	(5.48, 1.00) (0.00, N/A, 0.1)	177059.2 1104.6	0.6403 109.2 98.0	0.1730	N/A			
PFPeS	(349.0 / 80.0) 22954 (349.0 / 99.0) 6969	(6.36, 0.90) (N/A, -0.06, -0.1)	770.6 633.7	0.3036 88.9 91.5	0.0272	N/A			
PFHxS	(399.0 / 80.0) 185000 (399.0 / 99.0) 63283	(7.11, 1.00) (0.00, N/A, -0.1)	616.8 1870525.4	0.3421 99.8 98.1	0.2406	N/A			
PFHpS	(449.0 / 80.0) 7685 (449.0 / 99.0) 1001	(7.77, 0.93) (N/A, -0.03, -1.2)	153.8 96.1	0.1303 45.8 46.9	0.0067	N/A			IR1,
PFOS	(499.0 / 80.0) 315934 (499.0 / 99.0) 51186	(8.26, 0.99) (-0.07, N/A, -3.9)	129.3 60.9	0.1620 74.9 74.5	0.2221	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	( 498.0 / 78.0 ) 21529 ( 498.0 / 478.0 ) 844	( 9.77 , 1.00 ) ( 0.00 , N/A , 0.0 )	94.4 22.8	0.0392 176.5 165.7	0.0158	N/A			
NMeFOSA	( 512.0 / 219.0 ) N/A ( 512.0 / 169.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	( 526.0 / 219.0 ) N/A ( 526.0 / 169.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	( 570.0 / 419.0 ) N/A ( 570.0 / 483.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	( 584.0 / 419.0 ) N/A ( 584.0 / 526.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	( 616.0 / 59.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	( 630.0 / 59.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	( 285.0 / 169.0 ) N/A ( 285.0 / 185.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	( 377.0 / 85.0 ) N/A ( 377.0 / 251.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	( 531.0 / 351.0 ) N/A ( 533.0 / 353.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	( 631.0 / 451.0 ) N/A ( 633.0 / 453.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 182451	(3.63, N/A) (N/A, -0.01, N/A)	1651.6	N/A	0.8518 [ 1.0000 ]	85.2% { 125.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 249054	(5.51, N/A) (N/A, -0.06, N/A)	2182.3	N/A	0.7930 [ 1.0000 ]	79.3% { 122.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 487943	(6.96, N/A) (N/A, -0.05, N/A)	12016.0	N/A	1.0566 [ 1.0000 ]	105.7% { 126.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 415880	(7.56, N/A) (N/A, -0.05, N/A)	2649.4	N/A	0.9966 [ 1.0000 ]	99.7% { 104.8% }			
13C2_PFDA_IIS	(515.0 / 470.1) 469583	(8.12, N/A) (N/A, -0.04, N/A)	20683.7	N/A	1.1692 [ 1.0000 ]	116.9% { 128.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 568700	(7.11, N/A) (N/A, -0.05, N/A)	3204.5	N/A	0.8376 [ 1.0000 ]	83.8% { 124.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 1090059	(8.32, N/A) (N/A, -0.04, N/A)	1446.0	N/A	1.2704 [ 1.0000 ]	127.0% { 124.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1418371	(3.63, N/A) (N/A, -0.01, N/A)	5527.9	N/A	6.5324 [ 8.0000 ]	81.7% { 95.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1067334	(4.53, N/A) (N/A, -0.06, N/A)	3835.3	N/A	3.7098 [ 4.0000 ]	92.7% { 91.2% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 674232	(5.50, N/A) (N/A, -0.06, N/A)	4500.1	N/A	1.9423 [ 2.0000 ]	97.1% { 88.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 677677	(6.29, N/A) (N/A, -0.05, N/A)	2469.0	N/A	2.0493 [ 2.0000 ]	102.5% { 89.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 952933	(6.96, N/A) (N/A, -0.05, N/A)	3123.4	N/A	1.7976 [ 2.0000 ]	89.9% { 100.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 421597	(7.56, N/A) (N/A, -0.05, N/A)	7118.4	N/A	0.9541 [ 1.0000 ]	95.4% { 92.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 513549	(8.12, N/A) (N/A, -0.04, N/A)	250.6	N/A	0.9087 [ 1.0000 ]	90.9% { 102.3% }			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23C0146-01  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (18)  
 Acquired: 2023/03/21 - 17:37

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 476445	(8.61, N/A) (N/A, -0.03, N/A)	1373.1	N/A	0.7561 [ 1.0000 ]	75.6% { 89.8% }			
13C2_PFDa_EIS	(615.0 / 570.0) 451803	(8.90, N/A) (N/A, -0.02, N/A)	1254.5	N/A	0.8202 [ 1.0000 ]	82.0% { 97.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 363519	(9.27, N/A) (N/A, -0.01, N/A)	1454.4	N/A	0.6257 [ 1.0000 ]	62.6% { 94.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1524999	(5.48, N/A) (N/A, -0.06, N/A)	4277.1	N/A	1.6926 [ 2.0000 ]	84.6% { 90.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1025189	(7.11, N/A) (N/A, -0.04, N/A)	1411.6	N/A	1.7521 [ 2.0000 ]	87.6% { 78.2% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2522152	(8.33, N/A) (N/A, -0.04, N/A)	2729.1	N/A	1.7257 [ 2.0000 ]	86.3% { 94.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 447023	(5.25, N/A) (N/A, -0.06, N/A)	1935.9	N/A	7.8220 [ 4.0000 ]	195.6% { 153.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 412386	(6.70, N/A) (N/A, -0.05, N/A)	1527.2	N/A	5.4961 [ 4.0000 ]	137.4% { 107.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 678147	(7.86, N/A) (N/A, -0.04, N/A)	1613.3	N/A	8.3427 [ 4.0000 ]	208.6% { 143.5% }			S2.
13C8_PFOsa_EIS	(506.0 / 78.0) 3293502	(9.77, N/A) (N/A, -0.01, N/A)	3887.4	N/A	1.3175 [ 2.0000 ]	65.9% { 84.5% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 312856	(10.39, N/A) (N/A, -0.01, N/A)	1414.2	N/A	0.4892 [ 2.0000 ]	24.5% { 49.9% }			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23C0146-01  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (18)  
 Acquired: 2023/03/21 - 17:37

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	( 531.0 / 169.0 ) 260318	( 10.57, N/A ) ( N/A, -0.01, N/A )	1628.3	N/A	0.4471 [ 2.0000 ]	22.4% { 46.8% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 1181365	( 8.23, N/A ) ( N/A, -0.04, N/A )	2237.4	N/A	4.7270 [ 4.0000 ]	118.2% { 121.7% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 949340	( 8.47, N/A ) ( N/A, -0.03, N/A )	56774.2	N/A	3.3895 [ 4.0000 ]	84.7% { 114.2% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 1349256	( 10.33, N/A ) ( N/A, -0.01, N/A )	1177.5	N/A	6.7792 [ 20.0000 ]	33.9% { 53.2% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 1986987	( 10.50, N/A ) ( N/A, -0.01, N/A )	1096.7	N/A	8.4584 [ 20.0000 ]	42.3% { 63.5% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1516581	( 5.80, N/A ) ( N/A, -0.05, N/A )	4445.8	N/A	7.9111 [ 8.0000 ]	98.9% { 96.7% }			

**FORM I**  
**ANALYSIS DATA SHEET**  
RHSF-PUMP-PR-01-031523-N

Laboratory:	APPL, LLC	Work Order:	23C0146		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling		
Matrix:	Water	Laboratory ID:	23C0146-01RE1	File ID:	S2023-03-21A (19)
Sampled:	03/15/23 12:00	Prepared:	03/17/23 11:22	Analyzed:	03/21/23 17:49
Solids:		Preparation:	EPA 1633	Dilution:	10
Initial/Final:	581.1 mL / 2 mL			Instrument:	Saphira
Batch:	BCC0177	Sequence:	SC01124	Calibration:	2310010



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23C0146-01RE1 @10  
 DF, IV: 1, 1.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (19)  
 Acquired: 2023/03/21 - 17:49

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) 9566 (413.0 / 169.0) 2781	(6.96, 1.00) (-0.01, N/A, -1.1)	27.5 13307.2	0.2907 83.4 95.3	0.0236	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



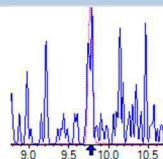
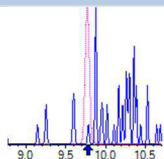
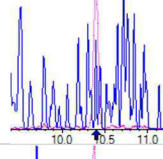
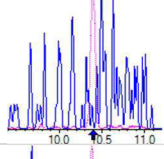
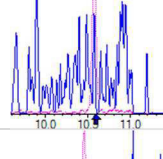
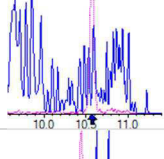
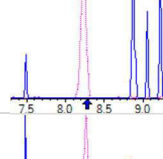
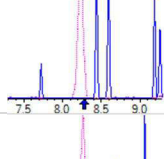
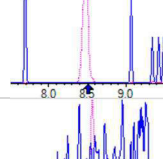
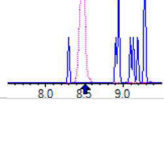
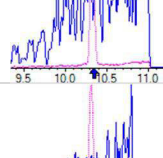
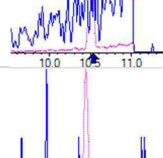
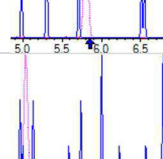
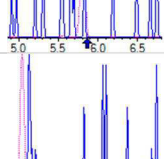
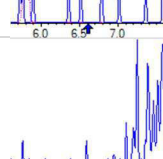
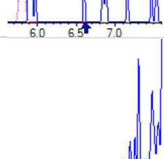
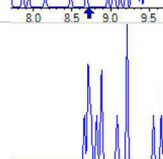
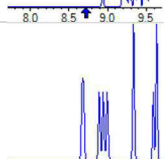
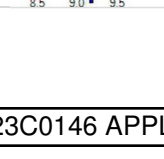
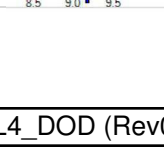


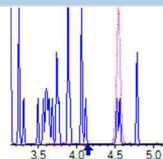
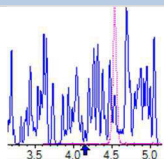
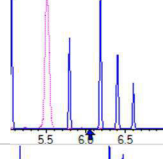
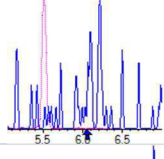
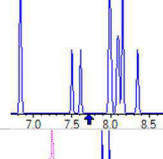
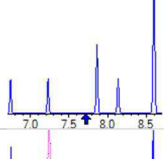
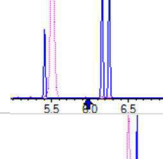
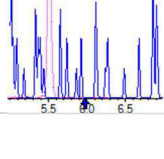
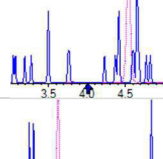
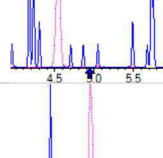
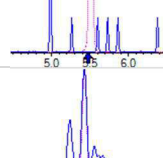
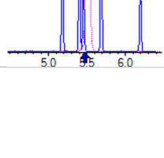
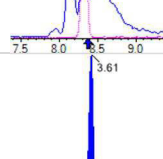
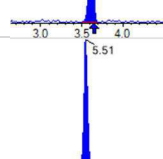
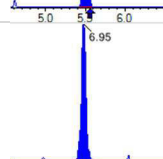
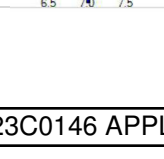
Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

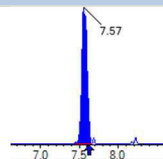
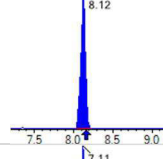
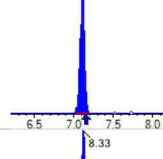
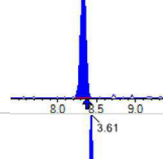
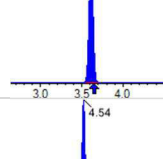
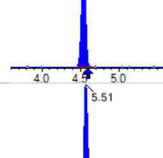
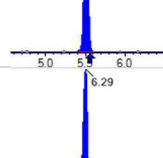
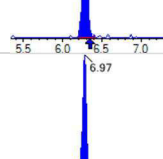
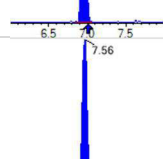
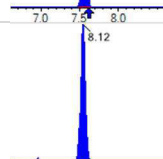
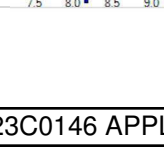
Sample I.D.: 23C0146-01RE1 @10  
 DF, IV: 1, 1.0µL  
 Acquisition Method: 1633 2023-03-07.dam

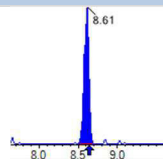
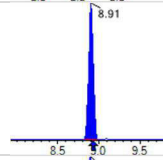
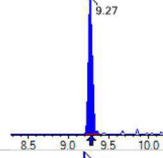
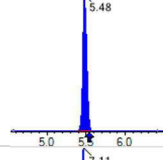
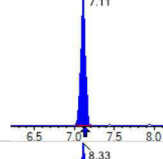
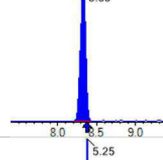
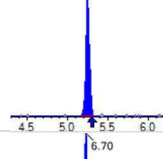
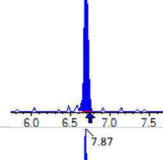
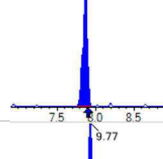
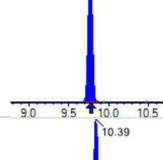
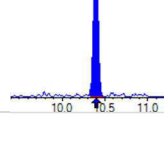
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 Path: S2023-03-21A (19)  
 Acquired: 2023/03/21 - 17:49

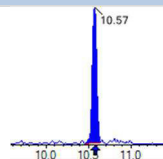

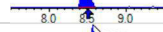


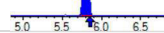
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	( 299.0 / 80.0 ) N/A ( 299.0 / 99.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	( 349.0 / 80.0 ) N/A ( 349.0 / 99.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	( 399.0 / 80.0 ) N/A ( 399.0 / 99.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	( 449.0 / 80.0 ) N/A ( 449.0 / 99.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	( 499.0 / 80.0 ) N/A ( 499.0 / 99.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	( 549.0 / 80.0 ) N/A ( 549.0 / 99.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	( 599.0 / 80.0 ) N/A ( 599.0 / 99.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	( 699.0 / 80.0 ) N/A ( 699.0 / 99.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	( 327.0 / 307.0 ) N/A ( 327.0 / 81.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	( 427.0 / 407.0 ) N/A ( 427.0 / 81.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	( 527.0 / 507.0 ) N/A ( 527.0 / 81.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 15802	(3.61, N/A) (N/A, -0.03, N/A)	309.1	N/A	0.7377 [ 1.0000 ]	73.8% { 10.8% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 20890	(5.51, N/A) (N/A, -0.06, N/A)	296.8	N/A	0.6651 [ 1.0000 ]	66.5% { 10.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 41720	(6.95, N/A) (N/A, -0.06, N/A)	11116.2	N/A	0.9034 [ 1.0000 ]	90.3% { 10.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 41346	(7.57, N/A) (N/A, -0.05, N/A)	1670.5	N/A	0.9907 [ 1.0000 ]	99.1% { 10.4% }			
13C2_PFDA_IIS	(515.0 / 470.1) 41636	(8.12, N/A) (N/A, -0.04, N/A)	370.3	N/A	1.0367 [ 1.0000 ]	103.7% { 11.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 58318	(7.11, N/A) (N/A, -0.05, N/A)	16322.5	N/A	0.8590 [ 1.0000 ]	85.9% { 12.8% }			
13C4_PFOS_IIS	(503.0 / 79.9) 101013	(8.33, N/A) (N/A, -0.04, N/A)	369.8	N/A	1.1772 [ 1.0000 ]	117.7% { 11.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 139764	(3.61, N/A) (N/A, -0.03, N/A)	1972.8	N/A	0.7432 [ 0.8000 ]	92.9% { 9.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 104937	(4.54, N/A) (N/A, -0.05, N/A)	815.9	N/A	0.4348 [ 0.4000 ]	108.7% { 9.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 64177	(5.51, N/A) (N/A, -0.05, N/A)	888.3	N/A	0.2204 [ 0.2000 ]	110.2% { 8.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 65594	(6.29, N/A) (N/A, -0.05, N/A)	425.8	N/A	0.2365 [ 0.2000 ]	118.2% { 8.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 89228	(6.97, N/A) (N/A, -0.04, N/A)	970.9	N/A	0.1969 [ 0.2000 ]	98.4% { 9.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 48767	(7.56, N/A) (N/A, -0.05, N/A)	4049.0	N/A	0.1110 [ 0.1000 ]	111.0% { 10.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 45919	(8.12, N/A) (N/A, -0.04, N/A)	374.3	N/A	0.0916 [ 0.1000 ]	91.6% { 9.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 45831	(8.61, N/A) (N/A, -0.03, N/A)	389.7	N/A	0.0820 [0.1000]	82.0% {8.6%}			
13C2_PFDa_EIS	(615.0 / 570.0) 40903	(8.91, N/A) (N/A, -0.02, N/A)	305.6	N/A	0.0838 [0.1000]	83.8% {8.8%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 38993	(9.27, N/A) (N/A, -0.02, N/A)	394.1	N/A	0.0757 [0.1000]	75.7% {10.1%}			
13C3_PFBs_EIS	(302.0 / 80.0) 157910	(5.48, N/A) (N/A, -0.06, N/A)	1415.2	N/A	0.1709 [0.2000]	85.5% {9.4%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 96015	(7.11, N/A) (N/A, -0.03, N/A)	20623.7	N/A	0.1600 [0.2000]	80.0% {7.3%}			
13C8_PFOS_EIS	(507.0 / 80.0) 231600	(8.33, N/A) (N/A, -0.04, N/A)	601.7	N/A	0.1710 [0.2000]	85.5% {8.7%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 38384	(5.25, N/A) (N/A, -0.06, N/A)	646.1	N/A	0.6550 [0.4000]	163.7% {13.2%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 32272	(6.70, N/A) (N/A, -0.05, N/A)	276.8	N/A	0.4194 [0.4000]	104.9% {8.4%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 55479	(7.87, N/A) (N/A, -0.04, N/A)	980.3	N/A	0.6656 [0.4000]	166.4% {11.7%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 332660	(9.77, N/A) (N/A, -0.01, N/A)	1297.0	N/A	0.1436 [0.2000]	71.8% {8.5%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 34771	(10.39, N/A) (N/A, -0.01, N/A)	201.6	N/A	0.0587 [0.2000]	29.3% {5.5%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT- CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 27394	(10.57, N/A) (N/A, -0.01, N/A)	231.2	N/A	0.0508 [ 0.2000 ]	25.4% { 4.9% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 96248	(8.24, N/A) (N/A, -0.04, N/A)	586.8	N/A	0.4156 [ 0.4000 ]	103.9% { 9.9% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 95198	(8.48, N/A) (N/A, -0.02, N/A)	15911.9	N/A	0.3668 [ 0.4000 ]	91.7% { 11.5% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 174662	(10.32, N/A) (N/A, -0.01, N/A)	260.3	N/A	0.9470 [ 2.0000 ]	47.4% { 6.9% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 199097	(10.51, N/A) (N/A, -0.01, N/A)	227.9	N/A	0.9146 [ 2.0000 ]	45.7% { 6.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 147653	(5.80, N/A) (N/A, -0.05, N/A)	1320.0	N/A	0.9183 [ 0.8000 ]	114.8% { 9.4% }			

# FORM I

## ANALYSIS DATA SHEET

RHS-EF-TRAIN-01-031523-N

Laboratory:	APPL, LLC	Work Order:	23C0146
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	23C0146-02
		File ID:	S2023-03-21A (20)
Sampled:	03/15/23 11:25	Prepared:	03/17/23 11:22
		Analyzed:	03/21/23 18:02
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	565 mL / 2 mL	Instrument:	Saphira
Batch:	BCC0177	Sequence:	SC01124
		Calibration:	2310010

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.63 J	1.4	0.71	0.18	
PFPEA	0.35 U	0.71	0.35	0.058	
PFHXA	0.18 U	0.35	0.18	0.049	
PFHPA	0.18 U	0.35	0.18	0.036	
PFOA	0.27 U	0.35	0.27	0.13	
PFNA	0.18 U	0.35	0.18	0.072	
PFDA	0.18 U	0.35	0.18	0.090	
PFUnA	0.27 U	0.35	0.27	0.14	
PFDOA	0.18 U	0.35	0.18	0.099	
PFTRDA	0.27 U	0.35	0.27	0.18	
PFTEDA	0.27 U	0.35	0.27	0.18	
PFBS	0.037 J	0.35	0.18	0.033	IR2,
PFPEs	0.18 U	0.35	0.18	0.055	IR1,
PFHXS	0.18 U	0.35	0.18	0.028	
PFHPS	0.18 U	0.35	0.18	0.045	
PFOS	0.11 J	0.35	0.18	0.056	
PFNS	0.18 U	0.35	0.18	0.11	
PFDS	0.27 U	0.35	0.27	0.13	
PFDOS	0.18 U	0.35	0.18	0.11	
4:2FTS	0.71 U	1.4	0.71	0.26	
6:2FTS	0.71 U	1.4	0.71	0.28	
8:2FTS	0.14 J	1.4	0.71	0.073	
PFOSA	0.18 U	0.35	0.18	0.092	
NMeFOSA	0.71 U	1.4	0.71	0.42	
NEtFOSA	0.71 U	1.4	0.71	0.37	
NMeFOSAA	0.18 U	0.35	0.18	0.094	
NEtFOSAA	0.18 U	0.35	0.18	0.10	
NMeFOSE	1.1 U	1.4	1.1	0.90	
NEtFOSE	1.1 U	1.4	1.1	0.93	
HFPO-DA	0.35 U	0.71	0.35	0.15	

# FORM I

## ANALYSIS DATA SHEET

RHS-EF-TRAIN-01-031523-N

Laboratory:	APPL, LLC	Work Order:	23C0146
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	23C0146-02
		File ID:	S2023-03-21A (20)
Sampled:	03/15/23 11:25	Prepared:	03/17/23 11:22
		Analyzed:	03/21/23 18:02
Solids:		Preparation:	EPA 1633
		Dilution:	1
Initial/Final:	565 mL / 2 mL	Instrument:	Saphira
Batch:	BCC0177	Sequence:	SC01124
		Calibration:	2310010

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.35 U	0.71	0.35	0.11	
PFEESA	0.35 U	0.71	0.35	0.096	
PFMPA	0.35 U	0.71	0.35	0.048	
PFMBA	0.35 U	0.71	0.35	0.080	
NFDHA	0.35 U	0.71	0.35	0.27	
9CL-PF3ONS	0.35 U	0.71	0.35	0.19	
11CL-PF3OUDS	0.35 U	0.71	0.35	0.18	
3:3FTCA	0.71 U	1.4	0.71	0.51	
5:3FTCA	0.71 U	1.4	0.71	0.39	
7:3FTCA	0.71 U	1.4	0.71	0.49	





Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23C0146-02  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (20)  
 Acquired: 2023/03/21 - 18:02

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 21327	(3.61, 1.00) (0.00, N/A, 0.0)	44.7	N/A 0.0 0.0	0.1769	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23C0146-02  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (20)  
 Acquired: 2023/03/21 - 18:02

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 4639 (299.0 / 99.0) 4692	(5.47, 1.00) (-0.01, N/A, -0.6)	2348.1 64.5	1.0114 172.4 154.7	0.0104	N/A			IR2,
PFPeS	(349.0 / 80.0) 1706 (349.0 / 99.0) N/A	(6.36, 0.90) (N/A, -0.06, #Value!)	878.1 N/A	N/A 0.0 0.0	0.0021	N/A			IR1,
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) 36999 (499.0 / 99.0) 7861	(8.31, 1.00) (-0.01, N/A, -0.9)	30.4 38.3	0.2125 98.2 97.7	0.0307	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) 7143 (527.0 / 81.0) 4973	(7.85, 1.00) (0.00, N/A, -0.7)	2120.5 40.0	0.6962 103.1 89.6	0.0395	N/A			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23C0146-02  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (20)  
 Acquired: 2023/03/21 - 18:02

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	( 498.0 / 78.0 ) 19310 ( 498.0 / 478.0 ) 733	( 9.76 , 1.00 ) ( 0.00 , N/A , -1.3)	94.5 7.1	0.0379 170.7 160.3	0.0163	N/A			
NMeFOSA	( 512.0 / 219.0 ) N/A ( 512.0 / 169.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	( 526.0 / 219.0 ) N/A ( 526.0 / 169.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	( 570.0 / 419.0 ) N/A ( 570.0 / 483.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	( 584.0 / 419.0 ) N/A ( 584.0 / 526.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	( 616.0 / 59.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	( 630.0 / 59.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	( 285.0 / 169.0 ) N/A ( 285.0 / 185.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	( 377.0 / 85.0 ) N/A ( 377.0 / 251.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	( 531.0 / 351.0 ) N/A ( 533.0 / 353.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	( 631.0 / 451.0 ) N/A ( 633.0 / 453.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

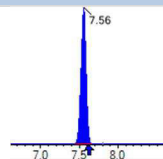
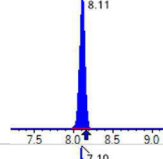
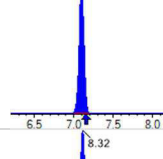
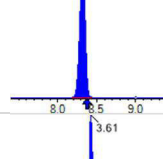
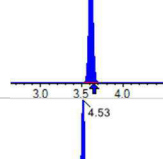
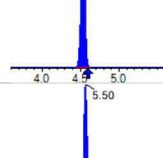
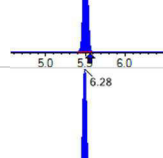
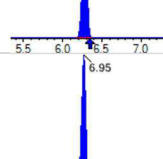
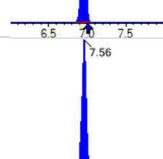
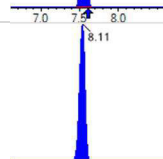
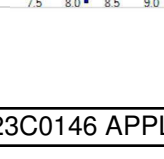


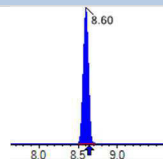
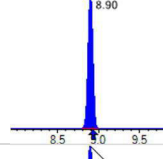
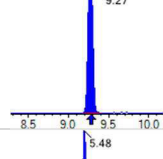
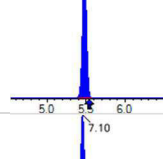
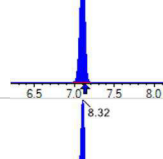
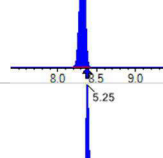
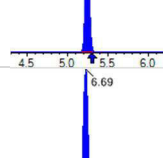
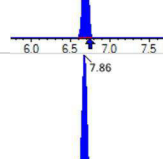
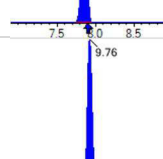
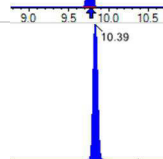
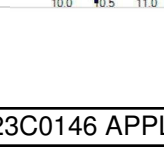
Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23C0146-02  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (20)  
 Acquired: 2023/03/21 - 18:02

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) 377	(N/A, N/A) (N/A, N/A, N/A)	N/A 58.1	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 156261	(3.61, N/A) (N/A, -0.03, N/A)	1776.9	N/A	0.7295 [ 1.0000 ]	72.9% { 107.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 171663	(5.51, N/A) (N/A, -0.06, N/A)	1493.8	N/A	0.5466 [ 1.0000 ]	54.7% { 84.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 391917	(6.95, N/A) (N/A, -0.06, N/A)	2514.0	N/A	0.8486 [ 1.0000 ]	84.9% { 101.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 421334	(7.56, N/A) (N/A, -0.06, N/A)	2807.0	N/A	1.0096 [ 1.0000 ]	101.0% { 106.1% }			
13C2_PFDA_IIS	(515.0 / 470.1) 401842	(8.11, N/A) (N/A, -0.05, N/A)	2202.4	N/A	1.0006 [ 1.0000 ]	100.1% { 109.5% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 528058	(7.10, N/A) (N/A, -0.06, N/A)	5748.7	N/A	0.7778 [ 1.0000 ]	77.8% { 115.7% }			
13C4_PFOS_IIS	(503.0 / 79.9) 981056	(8.32, N/A) (N/A, -0.05, N/A)	1085.5	N/A	1.1433 [ 1.0000 ]	114.3% { 111.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1167610	(3.61, N/A) (N/A, -0.03, N/A)	7130.1	N/A	6.2788 [ 8.0000 ]	78.5% { 78.6% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 921791	(4.53, N/A) (N/A, -0.06, N/A)	3202.4	N/A	4.6483 [ 4.0000 ]	116.2% { 78.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 583455	(5.50, N/A) (N/A, -0.06, N/A)	3367.2	N/A	2.4385 [ 2.0000 ]	121.9% { 76.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 606250	(6.28, N/A) (N/A, -0.06, N/A)	2247.2	N/A	2.6599 [ 2.0000 ]	133.0% { 80.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 784020	(6.95, N/A) (N/A, -0.05, N/A)	3212.2	N/A	1.8414 [ 2.0000 ]	92.1% { 82.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 377098	(7.56, N/A) (N/A, -0.05, N/A)	100215.9	N/A	0.8423 [ 1.0000 ]	84.2% { 83.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 431200	(8.11, N/A) (N/A, -0.05, N/A)	10522.8	N/A	0.8916 [ 1.0000 ]	89.2% { 85.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT- CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 435875	(8.60, N/A) (N/A, -0.04, N/A)	1641.9	N/A	0.8083 [ 1.0000 ]	80.8% { 82.1% }			
13C2_PFDa_EIS	(615.0 / 570.0) 381418	(8.90, N/A) (N/A, -0.02, N/A)	19934.0	N/A	0.8092 [ 1.0000 ]	80.9% { 82.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 366583	(9.27, N/A) (N/A, -0.01, N/A)	931.1	N/A	0.7374 [ 1.0000 ]	73.7% { 95.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1376675	(5.48, N/A) (N/A, -0.06, N/A)	2880.5	N/A	1.6456 [ 2.0000 ]	82.3% { 82.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 965645	(7.10, N/A) (N/A, -0.04, N/A)	2472.4	N/A	1.7774 [ 2.0000 ]	88.9% { 73.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2138276	(8.32, N/A) (N/A, -0.05, N/A)	1924.4	N/A	1.6256 [ 2.0000 ]	81.3% { 80.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 459744	(5.25, N/A) (N/A, -0.06, N/A)	2645.6	N/A	8.6638 [ 4.0000 ]	216.6% { 157.8% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 323514	(6.69, N/A) (N/A, -0.06, N/A)	1427.7	N/A	4.6435 [ 4.0000 ]	116.1% { 84.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 540877	(7.86, N/A) (N/A, -0.05, N/A)	1797.4	N/A	7.1661 [ 4.0000 ]	179.2% { 114.4% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 2852712	(9.76, N/A) (N/A, -0.02, N/A)	2867.1	N/A	1.2679 [ 2.0000 ]	63.4% { 73.2% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 283651	(10.39, N/A) (N/A, -0.01, N/A)	1201.4	N/A	0.4928 [ 2.0000 ]	24.6% { 45.3% }			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23C0146-02  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (20)  
 Acquired: 2023/03/21 - 18:02

Analyte	( Q1 / Q3 ) Area Counts*min	R.T. ( R.T [min], R.R.T. ) ( ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEIFOSA_EIS	( 531.0 / 169.0 ) 233777	( 10.56 , N/A ) ( N/A , -0.02 , N/A )	1992.4	N/A	0.4462 [ 2.0000 ]	22.3% { 42.0% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 934988	( 8.23 , N/A ) ( N/A , -0.05 , N/A )	1998.6	N/A	4.1568 [ 4.0000 ]	103.9% { 96.3% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 830667	( 8.46 , N/A ) ( N/A , -0.04 , N/A )	564163.7	N/A	3.2953 [ 4.0000 ]	82.4% { 99.9% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 1244090	( 10.32 , N/A ) ( N/A , -0.01 , N/A )	1114.8	N/A	6.9453 [ 20.0000 ]	34.7% { 49.1% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 1829886	( 10.50 , N/A ) ( N/A , -0.02 , N/A )	952.3	N/A	8.6552 [ 20.0000 ]	43.3% { 58.5% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1278142	( 5.80 , N/A ) ( N/A , -0.06 , N/A )	4086.6	N/A	9.6731 [ 8.0000 ]	120.9% { 81.5% }			

# FORM I

## ANALYSIS DATA SHEET

RHS-EF-TRAIN-01-031523-N

Laboratory:	APPL, LLC	Work Order:	23C0146		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling		
Matrix:	Water	Laboratory ID:	23C0146-02RE1	File ID:	S2023-03-21A (21)
Sampled:	03/15/23 11:25	Prepared:	03/17/23 11:22	Analyzed:	03/21/23 18:15
Solids:		Preparation:	EPA 1633	Dilution:	10
Initial/Final:	565 mL / 2 mL			Instrument:	Saphira
Batch:	BCC0177	Sequence:	SC01124	Calibration:	2310010





Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: 23C0146-02RE1 @10  
 DF, IV: 1, 1.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (21)  
 Acquired: 2023/03/21 - 18:15

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



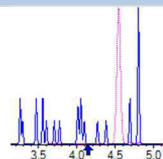
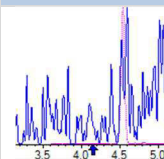
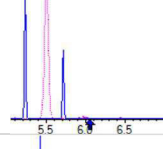
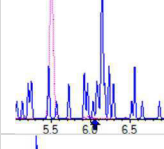
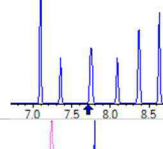
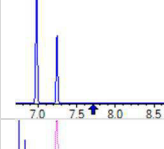
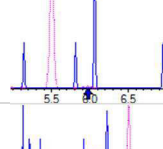
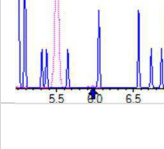
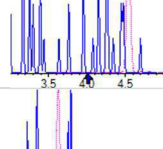
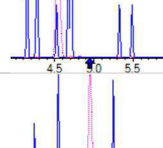
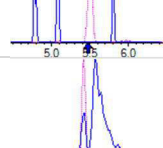
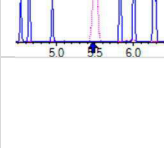
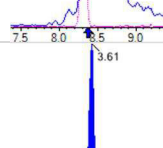
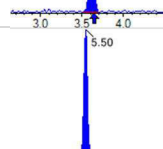
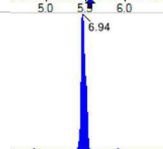
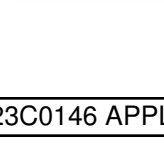
Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

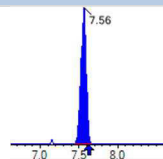
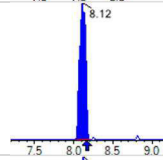
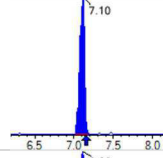
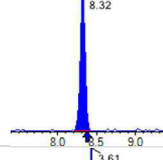
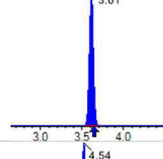
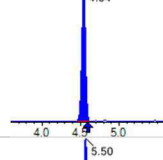
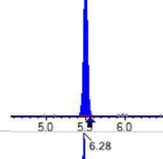
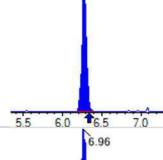
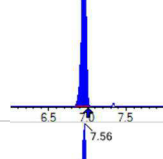
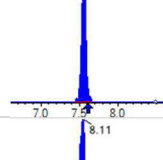
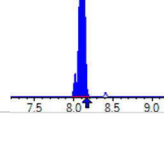
Sample I.D.: 23C0146-02RE1 @10  
 DF, IV: 1, 1.0µL  
 Acquisition Method: 1633 2023-03-07.dam

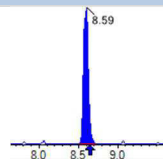
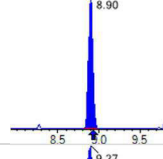
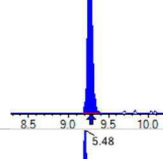
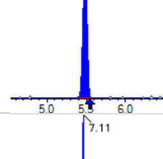
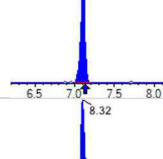
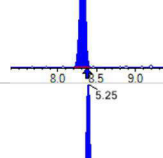
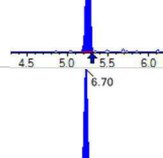
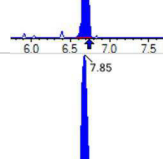
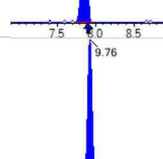
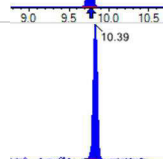
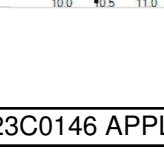
Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (21)  
 Acquired: 2023/03/21 - 18:15

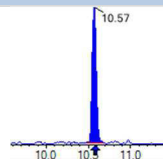
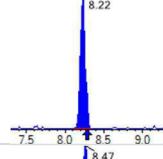
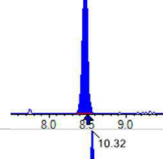
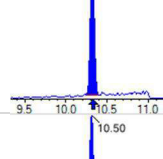
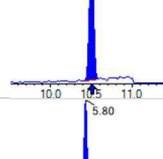
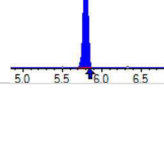
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) N/A (349.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-PF3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBa_IIS	(216.0 / 172.0) 15910	(3.61, N/A) (N/A, -0.03, N/A)	302.4	N/A	0.7428 [ 1.0000 ]	74.3% { 10.9% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 18916	(5.50, N/A) (N/A, -0.06, N/A)	2103.4	N/A	0.6023 [ 1.0000 ]	60.2% { 9.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 38693	(6.94, N/A) (N/A, -0.07, N/A)	150091.9	N/A	0.8378 [ 1.0000 ]	83.8% { 10.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNAlIS	(468.0 / 423.0) 38188	(7.56, N/A) (N/A, -0.06, N/A)	1086859.3	N/A	0.9151 [ 1.0000 ]	91.5% { 9.6% }			
13C2_PFDA_IIS	(515.0 / 470.1) 44413	(8.12, N/A) (N/A, -0.05, N/A)	93788.2	N/A	1.1059 [ 1.0000 ]	110.6% { 12.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 43703	(7.10, N/A) (N/A, -0.06, N/A)	2068.0	N/A	0.6437 [ 1.0000 ]	64.4% { 9.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 101138	(8.32, N/A) (N/A, -0.05, N/A)	365.8	N/A	1.1787 [ 1.0000 ]	117.9% { 11.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 119702	(3.61, N/A) (N/A, -0.03, N/A)	1666.0	N/A	0.6322 [ 0.8000 ]	79.0% { 8.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 95963	(4.54, N/A) (N/A, -0.05, N/A)	997.5	N/A	0.4391 [ 0.4000 ]	109.8% { 8.2% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 58257	(5.50, N/A) (N/A, -0.06, N/A)	1472.4	N/A	0.2210 [ 0.2000 ]	110.5% { 7.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 44123	(6.28, N/A) (N/A, -0.06, N/A)	3292.2	N/A	0.1757 [ 0.2000 ]	87.8% { 5.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 70224	(6.96, N/A) (N/A, -0.05, N/A)	198.5	N/A	0.1671 [ 0.2000 ]	83.5% { 7.4% }			
13C9_PFNAlIS	(472.0 / 427.0) 35184	(7.56, N/A) (N/A, -0.06, N/A)	976531.9	N/A	0.0867 [ 0.1000 ]	86.7% { 7.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 43530	(8.11, N/A) (N/A, -0.06, N/A)	719517.9	N/A	0.0814 [ 0.1000 ]	81.4% { 8.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT- CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 47938	(8.59, N/A) (N/A, -0.04, N/A)	891.3	N/A	0.0804 [0.1000]	80.4% {9.0%}			
13C2_PFDa_EIS	(615.0 / 570.0) 31521	(8.90, N/A) (N/A, -0.02, N/A)	9093.7	N/A	0.0605 [0.1000]	60.5% {6.8%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 29878	(9.27, N/A) (N/A, -0.02, N/A)	421.0	N/A	0.0544 [0.1000]	54.4% {7.8%}			
13C3_PFBs_EIS	(302.0 / 80.0) 135773	(5.48, N/A) (N/A, -0.06, N/A)	734.1	N/A	0.1961 [0.2000]	98.0% {8.1%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 107557	(7.11, N/A) (N/A, -0.04, N/A)	843.7	N/A	0.2392 [0.2000]	119.6% {8.2%}			
13C8_PFOS_EIS	(507.0 / 80.0) 230433	(8.32, N/A) (N/A, -0.05, N/A)	524.6	N/A	0.1699 [0.2000]	85.0% {8.6%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 37994	(5.25, N/A) (N/A, -0.05, N/A)	547.1	N/A	0.8651 [0.4000]	216.3% {13.0%}			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 32191	(6.70, N/A) (N/A, -0.05, N/A)	1187.1	N/A	0.5583 [0.4000]	139.6% {8.4%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 38706	(7.85, N/A) (N/A, -0.05, N/A)	516.1	N/A	0.6196 [0.4000]	154.9% {8.2%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 299175	(9.76, N/A) (N/A, -0.02, N/A)	1079.1	N/A	0.1290 [0.2000]	64.5% {7.7%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 26848	(10.39, N/A) (N/A, -0.01, N/A)	263.8	N/A	0.0452 [0.2000]	22.6% {4.3%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT- CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEIFOSA_EIS	(531.0 / 169.0) 27112	(10.57, N/A) (N/A, -0.01, N/A)	271.0	N/A	0.0502 [ 0.2000 ]	25.1% { 4.9% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 75377	(8.22, N/A) (N/A, -0.05, N/A)	446.9	N/A	0.3251 [ 0.4000 ]	81.3% { 7.8% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 68450	(8.47, N/A) (N/A, -0.03, N/A)	156029.2	N/A	0.2634 [ 0.4000 ]	65.9% { 8.2% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 159605	(10.32, N/A) (N/A, -0.01, N/A)	213.2	N/A	0.8643 [ 2.0000 ]	43.2% { 6.3% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 188494	(10.50, N/A) (N/A, -0.01, N/A)	241.1	N/A	0.8648 [ 2.0000 ]	43.2% { 6.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 129784	(5.80, N/A) (N/A, -0.06, N/A)	977.8	N/A	0.8913 [ 0.8000 ]	111.4% { 8.3% }			

# QUALITY CONTROL



## SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM  
 Work Order: 23C0146  
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
<b>RHSF-PUMP-PR-01-031523-N (23C0146-01) . ng/L</b>				
		Lab File ID: S2023-03-21A (18)		Analyzed: 03/21/23 17:37
13C4-PFBA	27.5	81.7	10 - 130	
13C5-PFPEA	13.8	92.7	35 - 150	
13C5-PFHXA	6.88	97.1	55 - 150	
13C4-PFHPA	6.88	102	55 - 150	
13C8-PFOA	6.88	89.9	60 - 140	
13C9-PFNA	3.44	95.4	55 - 140	
13C6-PFDA	3.44	90.9	50 - 140	
13C7-PFUnA	3.44	75.6	30 - 140	
13C2-PFDOA	3.44	82.0	10 - 150	
13C2-PFTEDA	3.44	62.6	10 - 130	
13C3-PFBS	6.88	84.6	55 - 150	
13C3-PFHXS	6.88	87.6	55 - 150	
13C8-PFOS	6.88	86.3	45 - 140	
13C2-4:2FTS	13.8	196	60 - 200	
13C2-6:2FTS	13.8	137	60 - 200	
13C2-8:2FTS	13.8	209	50 - 200	*
13C8-PFOSA	6.88	65.9	30 - 130	
D3-NMEFOSA	6.88	24.5	15 - 130	
D5-NETFOSA	6.88	22.4	10 - 130	
D3-NMEFOSAA	13.8	118	45 - 200	
D5-NETFOSAA	13.8	84.7	10 - 200	
D7-NMEFOSE	68.8	33.9	10 - 150	
D9-NETFOSSE	68.8	42.3	10 - 150	
13C3-HFPO-DA	27.5	98.9	25 - 160	
<b>RHSF-PUMP-PR-01-031523-N (23C0146-01RE1) . ng/L</b>				
		Lab File ID: S2023-03-21A (19)		Analyzed: 03/21/23 17:49
13C2-8:2FTS	13.8	166	50 - 200	

# SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM  
 Work Order: 23C0146  
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
<b>RHS-EF-TRAIN-01-031523-N (23C0146-02) ng/L</b>				
		Lab File ID: S2023-03-21A (20)		Analyzed: 03/21/23 18:02
13C4-PFBA	28.3	78.5	10 - 130	
13C5-PFPEA	14.2	116	35 - 150	
13C5-PFHXA	7.08	122	55 - 150	
13C4-PFHPA	7.08	133	55 - 150	
13C8-PFOA	7.08	92.1	60 - 140	
13C9-PFNA	3.54	84.2	55 - 140	
13C6-PFDA	3.54	89.2	50 - 140	
13C7-PFUnA	3.54	80.8	30 - 140	
13C2-PFDOA	3.54	80.9	10 - 150	
13C2-PFTEDA	3.54	73.7	10 - 130	
13C3-PFBS	7.08	82.3	55 - 150	
13C3-PFHXS	7.08	88.9	55 - 150	
13C8-PFOS	7.08	81.3	45 - 140	
13C2-4:2FTS	14.2	217	60 - 200	*
13C2-6:2FTS	14.2	116	60 - 200	
13C2-8:2FTS	14.2	179	50 - 200	
13C8-PFOSA	7.08	63.4	30 - 130	
D3-NMEFOSA	7.08	24.6	15 - 130	
D5-NETFOSA	7.08	22.3	10 - 130	
D3-NMEFOSAA	14.2	104	45 - 200	
D5-NETFOSAA	14.2	82.4	10 - 200	
D7-NMEFOSE	70.8	34.7	10 - 150	
D9-NETFOSSE	70.8	43.3	10 - 150	
13C3-HFPO-DA	28.3	121	25 - 160	
<b>RHS-EF-TRAIN-01-031523-N (23C0146-02RE1) ng/L</b>				
		Lab File ID: S2023-03-21A (21)		Analyzed: 03/21/23 18:15
13C2-4:2FTS	14.2	216	60 - 200	*

## SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM  
 Work Order: 23C0146  
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
<b>Blank (BCC0177-BLK1) . ng/L</b>				
	Lab File ID: S2023-03-21A (13)			Analyzed: 03/21/23 16:32
13C4-PFBA	32.0	93.9	10 - 130	
13C5-PFPEA	16.0	146	35 - 150	
13C5-PFHXA	8.00	147	55 - 150	
13C4-PFHPA	8.00	168	55 - 150	*
13C8-PFOA	8.00	114	60 - 140	
13C9-PFNA	4.00	93.2	55 - 140	
13C6-PFDA	4.00	97.5	50 - 140	
13C7-PFUnA	4.00	92.7	30 - 140	
13C2-PFDOA	4.00	87.2	10 - 150	
13C2-PFTEDA	4.00	84.4	10 - 130	
13C3-PFBS	8.00	96.8	55 - 150	
13C3-PFHXS	8.00	93.9	55 - 150	
13C8-PFOS	8.00	88.1	45 - 140	
13C2-4:2FTS	16.0	231	60 - 200	*
13C2-6:2FTS	16.0	147	60 - 200	
13C2-8:2FTS	16.0	149	50 - 200	
13C8-PFOSA	8.00	79.4	30 - 130	
D3-NMEFOSA	8.00	34.4	15 - 130	
D5-NETFOSA	8.00	35.7	10 - 130	
D3-NMEFOSAA	16.0	104	45 - 200	
D5-NETFOSAA	16.0	79.6	10 - 200	
D7-NMEFOSE	80.0	47.1	10 - 150	
D9-NETFOSSE	80.0	57.7	10 - 150	
13C3-HFPO-DA	32.0	137	25 - 160	

## SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM  
 Work Order: 23C0146  
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
<b>LCS (BCC0177-BS1) . ng/L</b>	Lab File ID: S2023-03-21A (14)		Analyzed: 03/21/23 16:45	
13C4-PFBA	32.0	98.4	10 - 130	
13C5-PFPEA	16.0	146	35 - 150	
13C5-PFHXA	8.00	146	55 - 150	
13C4-PFHPA	8.00	160	55 - 150	*
13C8-PFOA	8.00	105	60 - 140	
13C9-PFNA	4.00	99.4	55 - 140	
13C6-PFDA	4.00	102	50 - 140	
13C7-PFUnA	4.00	90.9	30 - 140	
13C2-PFDOA	4.00	93.2	10 - 150	
13C2-PFTEDA	4.00	82.6	10 - 130	
13C3-PFBS	8.00	85.7	55 - 150	
13C3-PFHXS	8.00	91.5	55 - 150	
13C8-PFOS	8.00	98.5	45 - 140	
13C2-4:2FTS	16.0	218	60 - 200	*
13C2-6:2FTS	16.0	120	60 - 200	
13C2-8:2FTS	16.0	149	50 - 200	
13C8-PFOSA	8.00	78.1	30 - 130	
D3-NMEFOSA	8.00	27.4	15 - 130	
D5-NETFOSA	8.00	26.0	10 - 130	
D3-NMEFOSAA	16.0	108	45 - 200	
D5-NETFOSAA	16.0	85.9	10 - 200	
D7-NMEFOSE	80.0	42.1	10 - 150	
D9-NETFOSSE	80.0	50.6	10 - 150	
13C3-HFPO-DA	32.0	136	25 - 160	

# SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM  
 Work Order: 23C0146  
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
<b>MRL Check (BCC0177-MRL1) . ng/L</b>	Lab File ID: S2023-03-21A (15)			Analyzed: 03/21/23 16:58
13C4-PFBA	32.0	90.7	10 - 130	
13C5-PFPEA	16.0	111	35 - 150	
13C5-PFHXA	8.00	110	55 - 150	
13C4-PFHPA	8.00	121	55 - 150	
13C8-PFOA	8.00	93.9	60 - 140	
13C9-PFNA	4.00	99.0	55 - 140	
13C6-PFDA	4.00	96.0	50 - 140	
13C7-PFUnA	4.00	96.2	30 - 140	
13C2-PFDOA	4.00	90.9	10 - 150	
13C2-PFTEDA	4.00	80.3	10 - 130	
13C3-PFBS	8.00	94.7	55 - 150	
13C3-PFHXS	8.00	98.3	55 - 150	
13C8-PFOS	8.00	87.5	45 - 140	
13C2-4:2FTS	16.0	239	60 - 200	*
13C2-6:2FTS	16.0	152	60 - 200	
13C2-8:2FTS	16.0	163	50 - 200	
13C8-PFOSA	8.00	78.5	30 - 130	
D3-NMEFOSA	8.00	30.6	15 - 130	
D5-NETFOSA	8.00	28.3	10 - 130	
D3-NMEFOSAA	16.0	101	45 - 200	
D5-NETFOSAA	16.0	79.1	10 - 200	
D7-NMEFOSE	80.0	40.9	10 - 150	
D9-NETFOSSE	80.0	48.5	10 - 150	
13C3-HFPO-DA	32.0	104	25 - 160	

# METHOD BLANK SUMMARY

EPA 1633

Laboratory: APPL, LLC

Work Order: 23C0146

Client: AECOM

Project: Red Hill AFFF Assessment Sampling

Blank ID: BCC0177-BLK1

Batch: BCC0177

Prepared: 03/17/2023 11:22

Client Sample ID	Laboratory Sample ID	Lab File ID	Time Analyzed
LCS	BCC0177-BS1	S2023-03-21A (14)	16:45
MRL Check	BCC0177-MRL1	S2023-03-21A (15)	16:58
RHSF-PUMP-PR-01-031523-N	23C0146-01	S2023-03-21A (18)	17:37
DF 10	23C0146-01RE1	S2023-03-21A (19)	17:49
RHS-EF-TRAIN-01-031523-N	23C0146-02	S2023-03-21A (20)	18:02
DF 10	23C0146-02RE1	S2023-03-21A (21)	18:15

# ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	23C0146
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCC0177-BLK1
Sampled:		Prepared:	03/17/23 11:22
Solids:		Preparation:	EPA 1633
Batch:	BCC0177	Sequence:	SC01124
Column:	1	Calibration:	2310010
		Instrument:	Saphira

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.80 U	1.6	0.80	0.21	U
PFPEA	0.40 U	0.80	0.40	0.065	U
PFHXA	0.20 U	0.40	0.20	0.055	U
PFHPA	0.20 U	0.40	0.20	0.041	U
PFOA	0.30 U	0.40	0.30	0.15	U
PFNA	0.20 U	0.40	0.20	0.082	U
PFDA	0.20 U	0.40	0.20	0.10	U
PFUnA	0.30 U	0.40	0.30	0.16	U
PFDOA	0.20 U	0.40	0.20	0.11	U
PFTRDA	0.30 U	0.40	0.30	0.20	U
PFTEDA	0.30 U	0.40	0.30	0.20	U
PFBS	0.20 U	0.40	0.20	0.037	U
PFPEs	0.20 U	0.40	0.20	0.063	IR2, U
PFHXS	0.20 U	0.40	0.20	0.032	U
PFHPS	0.20 U	0.40	0.20	0.051	U
PFOS	0.0941 J	0.40	0.20	0.064	MI2, J
PFNS	0.20 U	0.40	0.20	0.12	U
PFDS	0.30 U	0.40	0.30	0.15	U
PFDOS	0.20 U	0.40	0.20	0.12	U
4:2FTS	0.80 U	1.6	0.80	0.29	U
6:2FTS	0.80 U	1.6	0.80	0.31	U
8:2FTS	0.80 U	1.6	0.80	0.082	U
PFOSA	0.295 J	0.40	0.20	0.10	J
NMeFOSA	0.80 U	1.6	0.80	0.47	U
NEtFOSA	0.80 U	1.6	0.80	0.41	U
NMeFOSAA	0.20 U	0.40	0.20	0.11	U
NEtFOSAA	0.20 U	0.40	0.20	0.11	U
NMeFOSE	1.2 U	1.6	1.2	1.0	U
NEtFOSE	1.2 U	1.6	1.2	1.0	U
HFPO-DA	0.40 U	0.80	0.40	0.17	U

**ANALYSIS DATA SHEET**

Blank

Laboratory:	APPL, LLC	Work Order:	23C0146
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCC0177-BLK1
Sampled:		File ID:	S2023-03-21A (13)
Solids:		Prepared:	03/17/23 11:22
Batch:	BCC0177	Analyzed:	03/21/23 16:32
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Sequence:	SC01124
		Calibration:	2310010
		Instrument:	Saphira

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.40 U	0.80	0.40	0.12	U
PFEESA	0.40 U	0.80	0.40	0.11	U
PFMPA	0.40 U	0.80	0.40	0.054	U
PFMBA	0.40 U	0.80	0.40	0.091	U
NFDHA	0.40 U	0.80	0.40	0.30	U
9CL-PF3ONS	0.40 U	0.80	0.40	0.21	U
11CL-PF3OUDS	0.40 U	0.80	0.40	0.21	U
3:3FTCA	0.80 U	1.6	0.80	0.57	U
5:3FTCA	0.80 U	1.6	0.80	0.44	U
7:3FTCA	0.80 U	1.6	0.80	0.55	U



**LCS / LCS DUPLICATE RECOVERY**

EPA 1633

Laboratory: APPL, LLC

Work Order: 23C0146

Client: AECOM

Project: Red Hill AFFF Assessment Sampling

Matrix: Water

Preparation: EPA 1633

Batch: BCC0177

Laboratory ID: BCC0177-BS1

Column:

<b>ANALYTE</b>	<b>SPIKE ADDED (ng/L)</b>	<b>LCS CONCENTRATION (ng/L)</b>	<b>LCS % REC.</b>	<b>QC LIMITS REC.</b>
PFBA	16.0	16.0	100	58 - 148
PFPEA	8.00	8.01	100	54 - 152
PFHXA	4.00	4.00	100	55 - 152
PFHPA	4.00	3.60	90.1	54 - 154
PFOA	4.00	4.10	103	52 - 161
PFNA	4.00	3.67	91.8	59 - 149
PFDA	4.00	3.72	93.0	52 - 147
PFUnA	4.00	3.76	94.0	48 - 159
PFDOA	4.00	3.85	96.2	64 - 142
PFTRDA	4.00	3.65	91.4	49 - 148
PFTEDA	4.00	3.91	97.6	47 - 161
PFBS	3.54	3.49	98.7	62 - 144
PFPEs	3.76	4.48	119	59 - 151
PFHXS	3.66	3.69	101	57 - 146
PFHPS	3.82	3.02	79.0	55 - 152
PFOS	3.72	3.16	85.1	58 - 149
PFNS	3.84	3.31	86.3	52 - 148
PFDS	3.86	3.16	81.8	51 - 147
PFDOS	3.88	2.82	72.7	36 - 145
4:2FTS	15.0	14.5	97.0	67 - 146
6:2FTS	15.2	16.0	105	61 - 151
8:2FTS	15.4	14.4	94.0	63 - 152
PFOSA	4.00	3.89	97.2	61 - 148
NMeFOSA	16.0	16.1	101	63 - 145
NEtFOSA	16.0	15.5	97.1	65 - 139
NMeFOSAA	4.00	3.01	75.2	58 - 144
NEtFOSAA	4.00	4.17	104	59 - 146
NMeFOSE	16.0	15.3	95.6	71 - 136
NEtFOSE	16.0	14.8	92.3	69 - 137
HFPO-DA	8.00	9.88	123	63 - 144
ADONA	7.56	7.88	104	68 - 146
PFEESA	7.12	7.91	111	56 - 151
PFMPA	8.00	7.06	88.3	51 - 145
PFMBA	8.00	8.51	106	55 - 148

**LCS / LCS DUPLICATE RECOVERY**

EPA 1633

Laboratory: APPL, LLC

Work Order: 23C0146

Client: AECOM

Project: Red Hill AFFF Assessment Sampling

Matrix: Water

Preparation: EPA 1633

Batch: BCC0177

Laboratory ID: BCC0177-BS1

Column:

<b>ANALYTE</b>	<b>SPIKE ADDED (ng/L)</b>	<b>LCS CONCENTRATION (ng/L)</b>	<b>LCS % REC.</b>	<b>QC LIMITS REC.</b>
NFDHA	8.00	7.58	94.7	48 - 161
9CL-PF3ONS	7.48	10.1	134	56 - 156
11CL-PF3OUDS	7.56	9.70	128	46 - 156
3:3FTCA	16.0	14.7	92.1	62 - 129
5:3FTCA	16.0	12.4	77.3	63 - 134
7:3FTCA	16.0	14.4	89.7	50 - 138

# CALIBRATION SUMMARY

Analyte	( Q1 / Q3 )	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
PFBA	( 213.0 / 169.0 )	13C4_PFBA_EIS	4.0000	1.0000	$y = 0.41290 x$ (std. dev. = 0.03312) (weighting: None)	%RSE=8.0
PFPeA	( 263.0 / 219.0 )	13C5_PFPeA_EIS	2.0000	1.0000	$y = 0.43980 x$ (std. dev. = 0.03113) (weighting: None)	%RSE=7.1
PFHxA	( 313.0 / 269.0 )	13C5_PFHxA_EIS	1.0000	1.0000	$y = 0.44449 x$ (std. dev. = 0.04009) (weighting: None)	%RSE=9.0
PFHpA	( 363.0 / 319.0 )	13C4_PFHpA_EIS	1.0000	1.0000	$y = 0.42187 x$ (std. dev. = 0.02711) (weighting: None)	%RSE=6.4
PFOA	( 413.0 / 369.0 )	13C8_PFOA_EIS	1.0000	1.0000	$y = 0.45383 x$ (std. dev. = 0.03832) (weighting: None)	%RSE=8.4
PFNA	( 463.0 / 419.0 )	13C9_PFNA_EIS	1.0000	1.0000	$y = 0.86535 x$ (std. dev. = 0.07412) (weighting: None)	%RSE=8.6
PFDA	( 513.0 / 469.0 )	13C6_PFDA_EIS	1.0000	1.0000	$y = 0.94333 x$ (std. dev. = 0.07988) (weighting: None)	%RSE=8.5
PFUnA	( 563.0 / 519.0 )	13C7_PFUnA_EIS	1.0000	1.0000	$y = 0.79869 x$ (std. dev. = 0.05781) (weighting: None)	%RSE=7.2
PFDoA	( 613.0 / 569.0 )	13C2_PFDoA_EIS	1.0000	1.0000	$y = 0.84124 x$ (std. dev. = 0.10124) (weighting: None)	%RSE=12.0
PFTrDA	( 663.0 / 619.0 )	13C2_PFTDoA_EIS	1.0000	1.0000	$y = 0.80675 x$ (std. dev. = 0.11790) (weighting: None)	%RSE=14.6
PFTeDA	( 713.0 / 669.0 )	13C2_PFTeDA_EIS	1.0000	1.0000	$y = 0.85378 x$ (std. dev. = 0.07141) (weighting: None)	%RSE=8.4
PFBS	( 299.0 / 80.0 )	13C3_PFBS_EIS	1.0000	0.8847	$y = 0.28556 x$ (std. dev. = 0.02284) (weighting: None)	%RSE=8.0
PFPeS	( 349.0 / 80.0 )	13C3_PFHxS_EIS	1.0000	0.9384	$y = 0.77376 x$ (std. dev. = 0.07201) (weighting: None)	%RSE=9.3
PFHxS	( 399.0 / 80.0 )	13C3_PFHxS_EIS	1.0000	0.9110	$y = 0.68334 x$ (std. dev. = 0.05740) (weighting: None)	%RSE=8.4
PFHpS	( 449.0 / 80.0 )	13C8_PFOS_EIS	1.0000	0.9514	$y = 0.43179 x$ (std. dev. = 0.04361) (weighting: None)	%RSE=10.1
PFOS	( 499.0 / 80.0 )	13C8_PFOS_EIS	1.0000	0.9275	$y = 0.52318 x$ (std. dev. = 0.04717) (weighting: None)	%RSE=9.0
PFNS	( 549.0 / 80.0 )	13C8_PFOS_EIS	1.0000	0.9599	$y = 0.51347 x$ (std. dev. = 0.06280) (weighting: None)	%RSE=12.2
PFDS	( 599.0 / 80.0 )	13C8_PFOS_EIS	1.0000	0.9631	$y = 0.59519 x$ (std. dev. = 0.06386) (weighting: None)	%RSE=10.7
PFDoS	( 699.0 / 80.0 )	13C8_PFOS_EIS	1.0000	0.9696	$y = 0.47895 x$ (std. dev. = 0.05511) (weighting: None)	%RSE=11.5
4:2FTS	( 327.0 / 307.0 )	13C2_4:2FTS_EIS	4.0000	0.9345	$y = 2.72578 x$ (std. dev. = 0.19026) (weighting: None)	%RSE=7.0
6:2FTS	( 427.0 / 407.0 )	13C2_6:2FTS_EIS	4.0000	0.9490	$y = 1.36327 x$ (std. dev. = 0.10794) (weighting: None)	%RSE=7.9
8:2FTS	( 527.0 / 507.0 )	13C2_8:2FTS_EIS	4.0000	0.9583	$y = 1.28278 x$ (std. dev. = 0.12090) (weighting: None)	%RSE=9.4
PFOSA	( 498.0 / 78.0 )	13C8_PFOSA_EIS	1.0000	1.0000	$y = 0.41497 x$ (std. dev. = 0.05066) (weighting: None)	%RSE=12.2
NMeFOSA	( 512.0 / 219.0 )	D3_NMeFOSA_EIS	4.0000	1.0000	$y = 1.64452 x$ (std. dev. = 0.23713) (weighting: None)	%RSE=14.4
NEtFOSA	( 526.0 / 219.0 )	D5_NEtFOSA_EIS	4.0000	1.0000	$y = 1.90390 x$ (std. dev. = 0.15461) (weighting: None)	%RSE=8.1
NMeFOSAA	( 570.0 / 419.0 )	D3_MeFOSAA_EIS	1.0000	1.0000	$y = 0.25748 x$ (std. dev. = 0.01412) (weighting: None)	%RSE=5.5
NEtFOSAA	( 584.0 / 419.0 )	D5_EtFOSAA_EIS	1.0000	1.0000	$y = 0.20946 x$ (std. dev. = 0.01764) (weighting: None)	%RSE=8.4
NMeFOSE	( 616.0 / 59.0 )	D7_NMeFOSE_EIS	4.0000	1.0000	$y = 0.19808 x$ (std. dev. = 0.01304) (weighting: None)	%RSE=6.6
NEtFOSE	( 630.0 / 59.0 )	D9_NEtFOSE_EIS	4.0000	1.0000	$y = 0.19331 x$ (std. dev. = 0.01460) (weighting: None)	%RSE=7.6
HFPO-DA	( 285.0 / 169.0 )	13C3_HFPODA_EIS	2.0000	1.0000	$y = 0.19874 x$ (std. dev. = 0.01010) (weighting: None)	%RSE=5.1
ADONA	( 377.0 / 85.0 )	13C3_HFPODA_EIS	2.0000	0.9427	$y = 0.73656 x$ (std. dev. = 0.09823) (weighting: None)	%RSE=13.3
9Cl-Pf3ONS	( 531.0 / 351.0 )	13C3_HFPODA_EIS	2.0000	0.9333	$y = 1.96553 x$ (std. dev. = 0.22111) (weighting: None)	%RSE=11.2
11Cl-Pf3OUDS	( 631.0 / 451.0 )	13C3_HFPODA_EIS	2.0000	0.9432	$y = -0.01035 x^2 + 1.24228 x + -0.02804$ ( $r = 0.99901$ ) (weighting: 1 / x)	%RSE=14.5
3:3FTCA	( 241.0 / 177.0 )	13C5_PFPeA_EIS	4.0000	1.0000	$y = 0.02648 x$ (std. dev. = 0.00205) (weighting: None)	%RSE=7.7
5:3FTCA	( 341.0 / 236.7 )	13C5_PFHxA_EIS	4.0000	1.0000	$y = 0.30351 x$ (std. dev. = 0.02590) (weighting: None)	%RSE=8.5
7:3FTCA	( 441.0 / 317.0 )	13C5_PFHxA_EIS	4.0000	1.0000	$y = 0.50940 x$ (std. dev. = 0.06257) (weighting: None)	%RSE=12.3
PFEESA	( 315.0 / 135.0 )	13C5_PFHxA_EIS	2.0000	0.8925	$y = 0.98953 x$ (std. dev. = 0.10665) (weighting: None)	%RSE=10.8
PFMPA	( 229.0 / 85.0 )	13C5_PFPeA_EIS	2.0000	1.0000	$y = 0.11321 x$ (std. dev. = 0.00840) (weighting: None)	%RSE=7.4
PFMBA	( 279.0 / 85.0 )	13C5_PFPeA_EIS	2.0000	1.0000	$y = 0.36159 x$ (std. dev. = 0.02800) (weighting: None)	%RSE=7.7
NFDHA	( 295.0 / 201.0 )	13C5_PFHxA_EIS	2.0000	1.0000	$y = 0.50402 x$ (std. dev. = 0.05770) (weighting: None)	%RSE=11.4
13C3_PFBA_IIS	( 216.0 / 172.0 )	13C3_PFBA_IIS	1.0000	1.0000	$y = 214202.8301 x$	%RSD=16.9
13C2_PFHxA_IIS	( 315.0 / 270.0 )	13C2_PFHxA_IIS	1.0000	1.0000	$y = 314071.0945 x$	%RSD=4.3
13C4_PFOA_IIS	( 417.0 / 372.0 )	13C4_PFOA_IIS	1.0000	1.0000	$y = 461817.5022 x$	%RSD=8.1
13C5_PFNA_IIS	( 468.0 / 423.0 )	13C5_PFNA_IIS	1.0000	1.0000	$y = 417317.5271 x$	%RSD=6.9

Analyte	( Q1 / Q3 )	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
13C2_PFDA_IIS	( 515.0 / 470.1 )	13C2_PFDA_IIS	1.0000	1.0000	y = 401616.3949 x	%RSD=5.4
18O2_PFHxS_IIS	( 403.0 / 83.9 )	18O2_PFHxS_IIS	1.0000	1.0000	y = 678923.6439 x	%RSD=8.1
13C4_PFOS_IIS	( 503.0 / 79.9 )	13C4_PFOS_IIS	1.0000	1.0000	y = 858061.4123 x	%RSD=10.8
13C4_PFBA_EIS	( 217.0 / 172.0 )	13C3_PFBA_IIS	8.0000	1.0000	y = 9.5205 x	%RSD=6.8
13C5_PFPeA_EIS	( 268.0 / 223.0 )	13C2_PFHxA_IIS	4.0000	1.0000	y = 4.6208 x	%RSD=8.8
13C5_PFHxA_EIS	( 318.0 / 273.0 )	13C2_PFHxA_IIS	2.0000	1.0000	y = 2.7877 x	%RSD=9.4
13C4_PFHpA_EIS	( 367.0 / 322.0 )	13C2_PFHxA_IIS	2.0000	1.0000	y = 2.6555 x	%RSD=7.7
13C8_PFOA_EIS	( 421.0 / 376.0 )	13C4_PFOA_IIS	2.0000	1.0000	y = 2.1728 x	%RSD=9.4
13C9_PFNA_EIS	( 472.0 / 427.0 )	13C5_PFNA_IIS	1.0000	1.0000	y = 1.0625 x	%RSD=10.5
13C6_PFDA_EIS	( 519.0 / 474.0 )	13C2_PFDA_IIS	1.0000	1.0000	y = 1.2035 x	%RSD=8.4
13C7_PFUxA_EIS	( 570.0 / 525.0 )	13C2_PFDA_IIS	1.0000	1.0000	y = 1.3419 x	%RSD=10.9
13C2_PFDxA_EIS	( 615.0 / 570.0 )	13C2_PFDA_IIS	1.0000	1.0000	y = 1.1730 x	%RSD=9.7
13C2_PFTeDA_EIS	( 715.0 / 670.0 )	13C2_PFDA_IIS	1.0000	1.0000	y = 1.2371 x	%RSD=7.4
13C3_PFBS_EIS	( 302.0 / 80.0 )	18O2_PFHxS_IIS	2.0000	1.0000	y = 3.1685 x	%RSD=13.5
13C3_PFHxS_EIS	( 402.0 / 80.0 )	18O2_PFHxS_IIS	2.0000	1.0000	y = 2.0577 x	%RSD=8.9
13C8_PFOS_EIS	( 507.0 / 80.0 )	13C4_PFOS_IIS	2.0000	1.0000	y = 2.6815 x	%RSD=8.0
13C2_4:2FTS_EIS	( 329.0 / 81.0 )	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.4020 x	%RSD=7.8
13C2_6:2FTS_EIS	( 429.0 / 81.0 )	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.5277 x	%RSD=10.3
13C2_8:2FTS_EIS	( 529.0 / 81.0 )	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.5717 x	%RSD=11.5
13C8_PFOA_EIS	( 506.0 / 78.0 )	13C4_PFOS_IIS	2.0000	1.0000	y = 4.5866 x	%RSD=11.2
D3_NMeFOSA_EIS	( 515.0 / 169.0 )	13C4_PFOS_IIS	2.0000	1.0000	y = 1.1735 x	%RSD=16.0
D5_NEtFOSA_EIS	( 531.0 / 169.0 )	13C4_PFOS_IIS	2.0000	1.0000	y = 1.0682 x	%RSD=14.3
D3_MeFOSAA_EIS	( 573.0 / 419.0 )	13C4_PFOS_IIS	4.0000	1.0000	y = 0.9171 x	%RSD=10.1
D5_EtFOSAA_EIS	( 589.0 / 419.0 )	13C4_PFOS_IIS	4.0000	1.0000	y = 1.0278 x	%RSD=14.4
D7_NMeFOSE_EIS	( 623.0 / 58.9 )	13C4_PFOS_IIS	20.0000	1.0000	y = 3.6517 x	%RSD=11.2
D9_NEtFOSE_EIS	( 639.0 / 58.9 )	13C4_PFOS_IIS	20.0000	1.0000	y = 4.3101 x	%RSD=16.2
13C3_HFPODA_EIS	( 287.0 / 169.0 )	13C2_PFHxA_IIS	8.0000	1.0000	y = 6.1578 x	%RSD=7.7

x=Concentration Analyte

$$y = \text{Area Ratio} = \frac{\text{Area Analyte}}{\text{Area Internal Standard}}$$

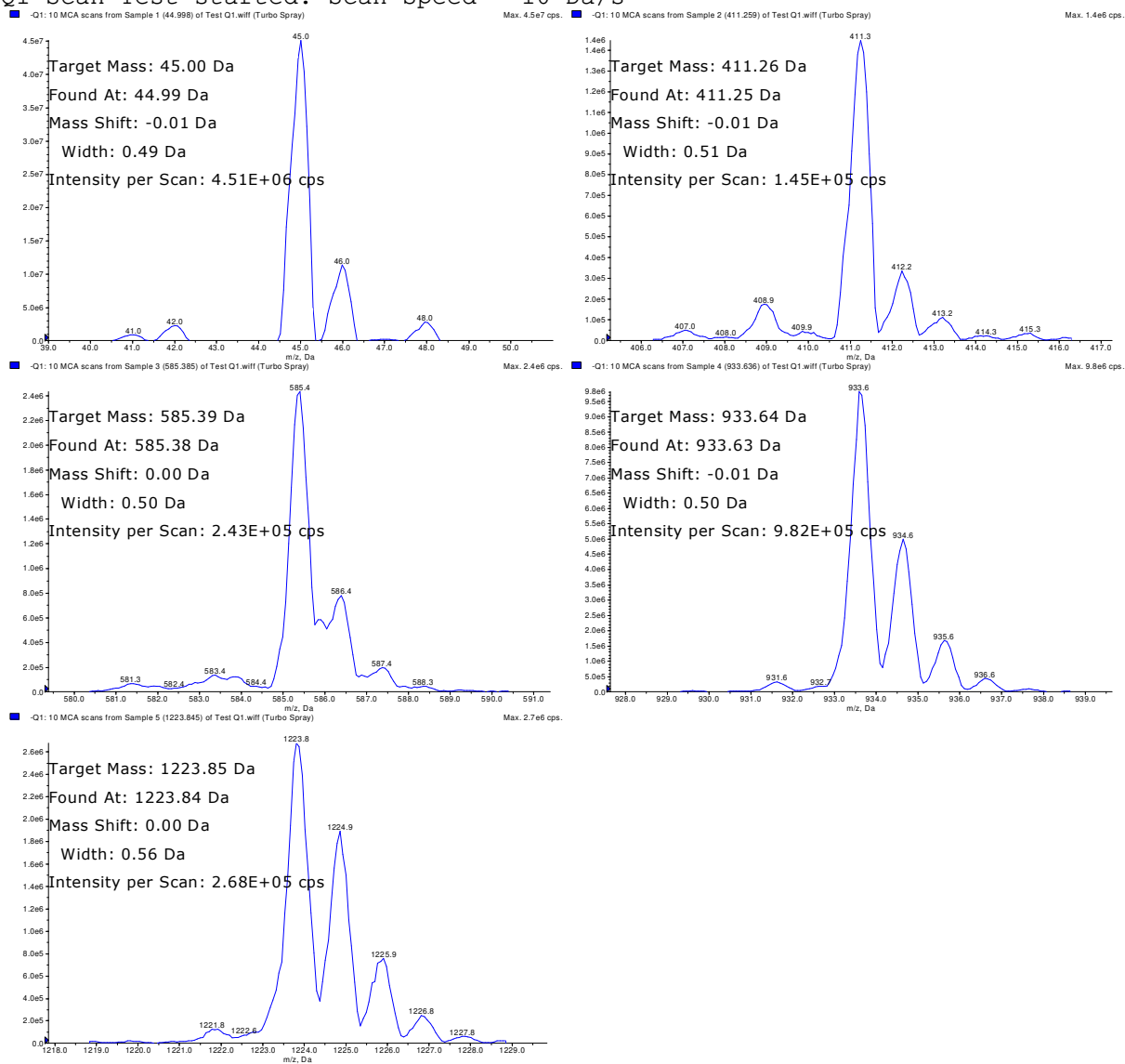
$$\text{Acid Factor} = \frac{\text{Molecular weight Acid}}{\text{Molecular weight Salt}}$$

$$\text{Multiplier} = \frac{\text{Concentration of Analyte}}{\text{Concentration of PFOA}} \text{ in curve standard mix}$$

$$\text{Result} \left( \frac{\text{ng}}{\text{mL}} \right) = x * \text{Multiplier} * \text{Acid Factor}$$

Tune 2021-11-23 Q1 NEG @ 10Da/s

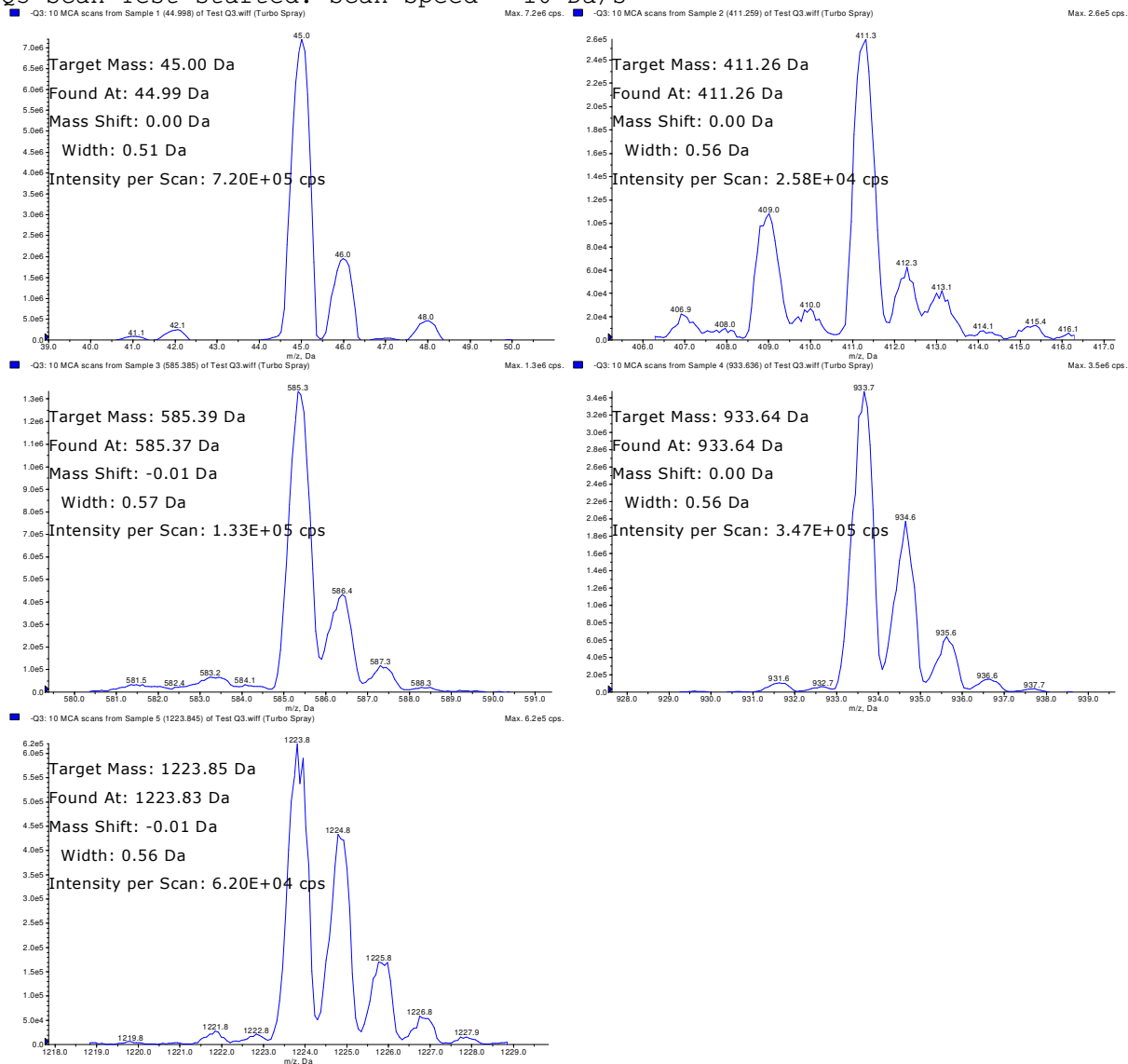
Q1 Scan Test started. Scan Speed = 10 Da/s



Target Mass	Found At	Delta	Width	Intensity	0.4<Width<0.6
45.00	44.99	-0.01	0.49	4.51E+06	PASS
411.26	411.25	-0.01	0.51	1.45E+05	PASS
585.39	585.38	0.00	0.50	2.43E+05	PASS
933.64	933.63	-0.01	0.50	9.82E+05	PASS
1223.85	1223.84	0.00	0.56	2.68E+05	PASS

Tune 2021-11-23 Q3 NEG @ 10Da/s

Q3 Scan Test started. Scan Speed = 10 Da/s



Target Mass	Found At	Delta	Width	Intensity	0.4<Width<0.6
45.00	44.99	0.00	0.51	7.20E+05	PASS
411.26	411.26	0.00	0.56	2.58E+04	PASS
585.39	585.37	-0.01	0.57	1.33E+05	PASS
933.64	933.64	0.00	0.56	3.47E+05	PASS
1223.85	1223.83	-0.01	0.56	6.20E+04	PASS

# EPA 1633

Initial Calibration: SC00916





Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (1)  
 Acquired: 2023/03/07 - 15:26

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 100623	(3.69, 1.00) (0.00, N/A, 0.0)	143.3	N/A 0.0 0.0	0.4338 [0.4000]	108.4%			
PFPeA	(263.0 / 219.0) 72126 (263.0 / 69.0) 1407	(4.76, 1.00) (0.00, N/A, -0.5)	407.2 23.0	0.0195 172.3 172.3	0.2163 [0.2000]	108.2%			
PFHxA	(313.0 / 269.0) 45876 (313.0 / 119.0) 4088	(5.70, 1.00) (0.00, N/A, 0.3)	460.5 4146.1	0.0891 84.6 84.6	0.1133 [0.1000]	113.3%			
PFHpA	(363.0 / 319.0) 37757 (363.0 / 169.0) 15046	(6.51, 1.00) (0.00, N/A, -0.3)	723.6 612.4	0.3985 122.3 122.3	0.1066 [0.1000]	106.6%			
PFOA	(413.0 / 369.0) 51733 (413.0 / 169.0) 18740	(7.20, 1.00) (0.00, N/A, -0.8)	1290.4 539.6	0.3622 103.9 103.9	0.1122 [0.1000]	112.2%			
PFNA	(463.0 / 419.0) 45098 (463.0 / 169.0) 7902	(7.82, 1.00) (0.00, N/A, 0.0)	5810.4 465.2	0.1752 74.8 74.8	0.1074 [0.1000]	107.4%			
PFDA	(513.0 / 469.0) 51659 (513.0 / 169.0) 5188	(8.39, 1.00) (0.00, N/A, 2.9)	113.3 28330.7	0.1004 94.4 94.4	0.1170 [0.1000]	117.0%			
PFUnA	(563.0 / 519.0) 49608 (563.0 / 169.0) 6200	(8.79, 1.00) (0.00, N/A, -1.1)	195.1 715.1	0.1250 104.2 104.2	0.1069 [0.1000]	106.9%			
PFDoA	(613.0 / 569.0) 48455 (613.0 / 169.0) 4914	(9.04, 1.00) (0.00, N/A, -0.4)	233.5 92.5	0.1014 62.3 62.3	0.1182 [0.1000]	118.2%			
PFTTrDA	(663.0 / 619.0) 47162 (663.0 / 169.0) 9170	(9.23, 1.02) (N/A, 0.00, -0.1)	427.7 871.5	0.1944 79.7 79.7	0.1199 [0.1000]	119.9%			
PFTeDA	(713.0 / 669.0) 47580 (713.0 / 169.0) 9130	(9.40, 1.00) (0.00, N/A, -0.2)	148.8 153.6	0.1919 100.4 100.4	0.1125 [0.1000]	112.5%			

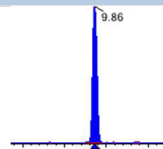
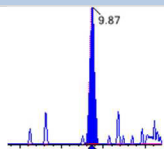
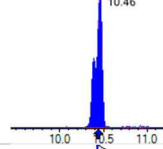
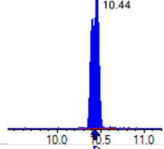
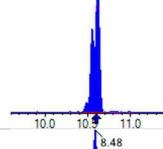
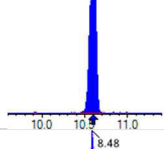
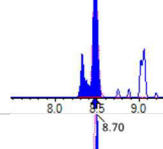
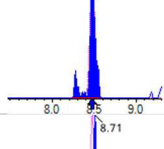
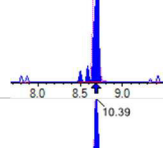
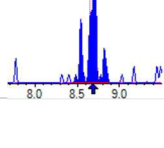
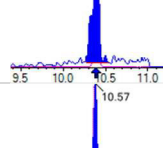
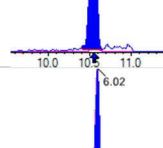
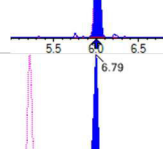
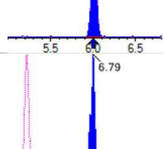
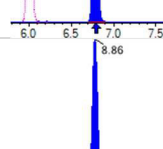
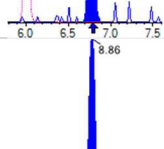
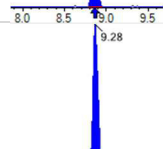
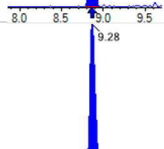
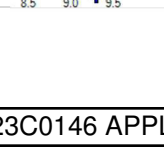
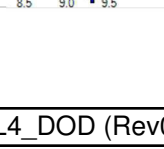


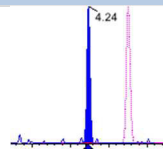
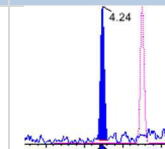
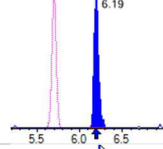
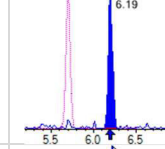
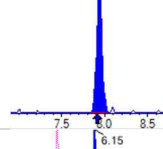
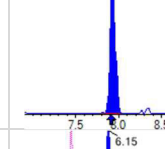
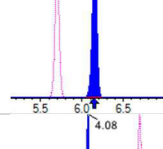
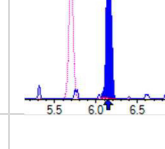
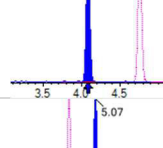
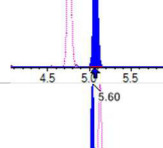
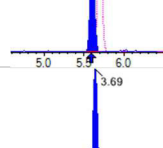
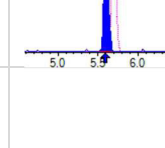
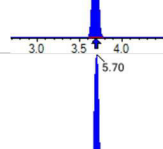
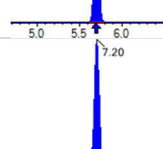
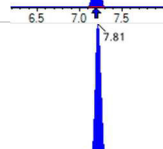

Chemist: DAG  
Instrument: Saphira  
Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL1  
DF, IV: 1, 10.0µL  
Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
Path: S2023-03-07A (1)  
Acquired: 2023/03/07 - 15:26

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 66587 (299.0 / 99.0) 45749	(5.70, 1.00) (0.00, N/A, -0.4)	1202.9 307.4	0.6871 117.1 117.1	0.0961 [0.0885]	108.6%			
PFPeS	(349.0 / 80.0) 123010 (349.0 / 99.0) 48389	(6.63, 0.90) (N/A, 0.01, 0.4)	4042072.8 129363.9	0.3934 115.1 115.1	0.1053 [0.0938]	112.2%			
PFHxS	(399.0 / 80.0) 107562 (399.0 / 99.0) 37781	(7.39, 1.00) (0.01, N/A, 0.9)	771.5 33763.9	0.3512 102.5 102.5	0.1012 [0.0911]	111.1%			
PFHpS	(449.0 / 80.0) 118700 (449.0 / 99.0) 37679	(8.03, 0.93) (N/A, 0.01, -0.2)	1297.5 1296.4	0.3174 111.7 111.7	0.1100 [0.0951]	115.6%			
PFOS	(499.0 / 80.0) 145672 (499.0 / 99.0) 27572	(8.59, 1.00) (0.00, N/A, 0.0)	121.1 176.6	0.1893 87.4 87.4	0.1086 [0.0927]	117.1%			
PFNS	(549.0 / 80.0) 124807 (549.0 / 99.0) 31839	(8.93, 1.04) (N/A, 0.00, 0.4)	541.8 18340351.9	0.2551 111.3 111.3	0.0981 [0.0960]	102.2%			
PFDs	(599.0 / 80.0) 147059 (599.0 / 99.0) 32368	(9.14, 1.06) (N/A, -0.01, 0.0)	740.9 158.6	0.2201 97.2 97.2	0.1001 [0.0963]	103.9%			
PFDoS	(699.0 / 80.0) 115626 (699.0 / 99.0) 28024	(9.48, 1.10) (N/A, 0.00, -0.1)	380.4 168.0	0.2424 111.2 111.2	0.0984 [0.0970]	101.5%			
4:2FTS	(327.0 / 307.0) 79358 (327.0 / 81.0) 54222	(5.42, 1.00) (0.00, N/A, 0.0)	675.4 136.1	0.6833 110.3 110.3	0.3952 [0.3738]	105.7%			
6:2FTS	(427.0 / 407.0) 48648 (427.0 / 81.0) 39181	(6.93, 1.00) (0.00, N/A, 0.1)	11426.5 246.1	0.8054 116.6 116.6	0.3672 [0.3796]	96.7%			
8:2FTS	(527.0 / 507.0) 52744 (527.0 / 81.0) 38298	(8.12, 1.00) (0.00, N/A, 0.0)	2578.9 264.9	0.7261 107.5 107.5	0.4219 [0.3833]	110.1%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-Imin, $\Delta$ RT-CVmin, $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 186438 (498.0 / 478.0) 4400	(9.86, 1.00) (0.00, N/A, -0.4)	803.2 59.9	0.0236 106.2 106.2	0.1171 [0.1000]	117.1%			
NMeFOSA	(512.0 / 219.0) 166391 (512.0 / 169.0) 138357	(10.46, 1.00) (0.00, N/A, 1.4)	1014.7 766.3	0.8315 99.4 99.4	0.4635 [0.4000]	115.9%			
NEIFOSA	(526.0 / 219.0) 175832 (526.0 / 169.0) 226419	(10.61, 1.00) (-0.01, N/A, 0.6)	1093.2 1122.5	1.2877 100.9 100.9	0.4428 [0.4000]	110.7%			
NMeFOSAA	(570.0 / 419.0) 19700 (570.0 / 483.0) 13248	(8.48, 1.00) (0.00, N/A, -0.1)	35175.9 205.2	0.6725 143.2 143.2	0.0960 [0.1000]	96.0%			
NEIFOSAA	(584.0 / 419.0) 19298 (584.0 / 526.0) 12274	(8.70, 1.00) (0.02, N/A, -0.4)	44019.0 129.1	0.6360 99.6 99.6	0.1095 [0.1000]	109.5%			
NMeFOSE	(616.0 / 59.0) 61888	(10.39, 1.00) (0.01, N/A, 0.0)	135.0	N/A 0.0 0.0	0.4137 [0.4000]	103.4%			
NEtFOSE	(630.0 / 59.0) 64257	(10.57, 1.00) (0.01, N/A, 0.0)	193.3	N/A 0.0 0.0	0.4297 [0.4000]	107.4%			
HFPO-DA	(285.0 / 169.0) 41967 (285.0 / 185.0) 120558	(6.02, 1.00) (0.00, N/A, 0.3)	857.1 665.9	2.8727 106.7 106.7	0.2191 [0.2000]	109.6%			
ADONA	(377.0 / 85.0) 165344 (377.0 / 251.0) 14256	(6.79, 1.13) (N/A, 0.01, -0.2)	1463.0 107.6	0.0862 89.3 89.3	0.2196 [0.1885]	116.5%			
9CI-Pf3ONS	(531.0 / 351.0) 430006 (533.0 / 353.0) 127403	(8.86, 1.47) (N/A, 0.00, -0.1)	1022.9 405.0	0.2963 92.9 92.9	0.2119 [0.1867]	113.5%			
11CI-PF3OUDS	(631.0 / 451.0) 244672 (633.0 / 453.0) 79947	(9.28, 1.54) (N/A, -0.01, 0.0)	895.0 502.4	0.3268 98.1 98.1	0.2356 [0.1886]	124.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-Imin, $\Delta$ RT-CVmin, $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 4185 (241.0 / 117.0) 9296	(4.24, 0.89) (N/A, 0.01, 0.1)	272.8 71.8	2.2214 109.0 109.0	0.4170 [0.4000]	104.2%			
5:3FTCA	(341.0 / 236.7) 29657 (341.0 / 217.0) 47909	(6.19, 1.09) (N/A, 0.01, -0.1)	9934.4 153.8	1.6154 98.1 98.1	0.4290 [0.4000]	107.3%			
7:3FTCA	(441.0 / 317.0) 41397 (441.0 / 337.0) 48336	(7.94, 1.39) (N/A, 0.03, 0.7)	645.7 640.2	1.1676 136.3 136.3	0.3568 [0.4000]	89.2%			
PFEESA	(315.0 / 135.0) 102111 (315.0 / 83.0) 27179	(6.15, 1.08) (N/A, 0.01, 0.0)	1773.5 139.8	0.2662 102.7 102.7	0.2022 [0.1785]	113.3%			
PFMPA	(229.0 / 85.0) 18646	(4.08, 0.86) (N/A, 0.01, 0.0)	617.6	N/A 0.0 0.0	0.2173 [0.2000]	108.6%			
PFMBA	(279.0 / 85.0) 61437	(5.07, 1.07) (N/A, 0.01, 0.0)	1900.8	N/A 0.0 0.0	0.2241 [0.2000]	112.1%			
NFDHA	(295.0 / 201.0) 54791 (295.0 / 85.0) 46854	(5.60, 0.98) (N/A, 0.01, 0.0)	893.4 1184.5	0.8551 85.1 85.1	0.2386 [0.2000]	119.3%			
13C3_PFBA_IIS	(216.0 / 172.0) 257918	(3.69, N/A) (N/A, 0.00, N/A)	2018.6	N/A	1.2041 [1.0000]	120.4% {127.4%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 323197	(5.70, N/A) (N/A, 0.01, N/A)	4417.7	N/A	1.0291 [1.0000]	102.9% {113.3%}			
13C4_PFOA_IIS	(417.0 / 372.0) 524921	(7.20, N/A) (N/A, 0.01, N/A)	39679.1	N/A	1.1366 [1.0000]	113.7% {125.2%}			
13C5_PFNA_IIS	(468.0 / 423.0) 435769	(7.81, N/A) (N/A, 0.02, N/A)	423027.3	N/A	1.0442 [1.0000]	104.4% {112.9%}			

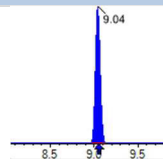
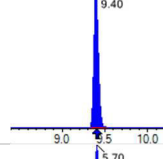
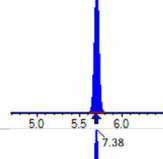
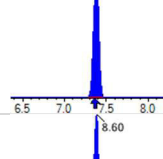
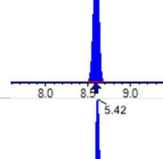
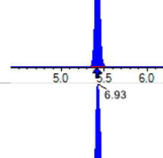
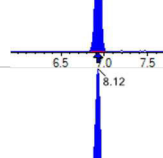
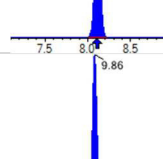
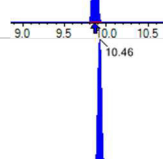
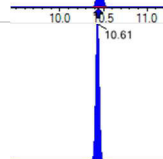
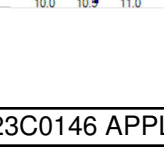


Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (1)  
 Acquired: 2023/03/07 - 15:26

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 439207	(8.39, N/A) (N/A, 0.01, N/A)	5379088.4	N/A	1.0936 [1.0000]	109.4% {114.2%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 781493	(7.38, N/A) (N/A, 0.02, N/A)	4693.2	N/A	1.1511 [1.0000]	115.1% {130.6%}			
13C4_PFOS_IIS	(503.0 / 79.9) 974029	(8.60, N/A) (N/A, 0.01, N/A)	2253.4	N/A	1.1352 [1.0000]	113.5% {117.1%}			
13C4_PFBA_EIS	(217.0 / 172.0) 2247239	(3.69, N/A) (N/A, 0.01, N/A)	6928.3	N/A	7.3214 [8.0000]	91.5% {106.2%}			
13C5_PFPeA_EIS	(268.0 / 223.0) 1516060	(4.76, N/A) (N/A, 0.01, N/A)	4147.9	N/A	4.0606 [4.0000]	101.5% {100.6%}			
13C5_PFHxA_EIS	(318.0 / 273.0) 911034	(5.70, N/A) (N/A, 0.01, N/A)	6134.1	N/A	2.0223 [2.0000]	101.1% {104.3%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 839521	(6.51, N/A) (N/A, 0.00, N/A)	3235.7	N/A	1.9564 [2.0000]	97.8% {99.3%}			
13C8_PFOA_EIS	(421.0 / 376.0) 1016021	(7.20, N/A) (N/A, 0.01, N/A)	2188.5	N/A	1.7816 [2.0000]	89.1% {100.5%}			
13C9_PFNA_EIS	(472.0 / 427.0) 485073	(7.81, N/A) (N/A, 0.02, N/A)	33068.8	N/A	1.0476 [1.0000]	104.8% {104.6%}			
13C6_PFDA_EIS	(519.0 / 474.0) 468071	(8.38, N/A) (N/A, 0.01, N/A)	3151.7	N/A	0.8855 [1.0000]	88.5% {93.1%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 581278	(8.80, N/A) (N/A, 0.00, N/A)	291828.8	N/A	0.9863 [1.0000]	98.6% {110.7%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-lmin, $\Delta$ RT-CVmin, $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 487430	(9.04, N/A) (N/A, 0.00, N/A)	1548.9	N/A	0.9461 [1.0000]	94.6% {106.5%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 495435	(9.40, N/A) (N/A, 0.00, N/A)	2629.5	N/A	0.9118 [1.0000]	91.2% {99.4%}			
13C3_PFBs_EIS	(302.0 / 80.0) 2146215	(5.70, N/A) (N/A, 0.01, N/A)	4252.9	N/A	1.7335 [2.0000]	86.7% {94.6%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 1416425	(7.38, N/A) (N/A, 0.02, N/A)	2389.4	N/A	1.7616 [2.0000]	88.1% {99.8%}			
13C8_PFOS_EIS	(507.0 / 80.0) 2377734	(8.60, N/A) (N/A, 0.01, N/A)	3434.3	N/A	1.8207 [2.0000]	91.0% {101.7%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 275365	(5.42, N/A) (N/A, 0.01, N/A)	1245.3	N/A	3.5064 [4.0000]	87.7% {101.9%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 368883	(6.93, N/A) (N/A, 0.00, N/A)	1148.9	N/A	3.5776 [4.0000]	89.4% {99.8%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 373555	(8.12, N/A) (N/A, 0.02, N/A)	1527.7	N/A	3.3442 [4.0000]	83.6% {97.4%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 3837415	(9.86, N/A) (N/A, 0.00, N/A)	3337.3	N/A	1.7179 [2.0000]	85.9% {91.3%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 873116	(10.46, N/A) (N/A, 0.02, N/A)	3031.4	N/A	1.5277 [2.0000]	76.4% {80.1%}			
D5_NEiFOSA_EIS	(531.0 / 169.0) 834358	(10.61, N/A) (N/A, 0.02, N/A)	3102.4	N/A	1.6039 [2.0000]	80.2% {80.5%}			

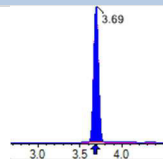
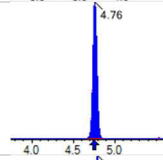
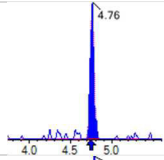
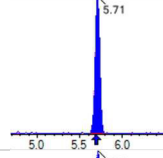
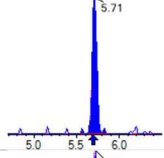
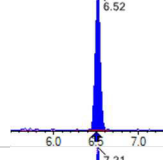
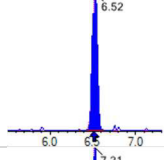
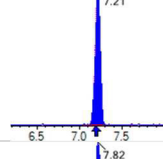
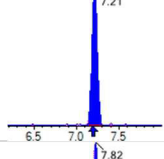
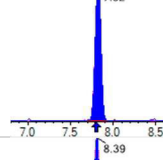
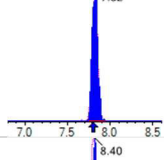
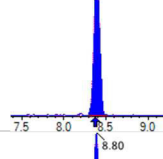
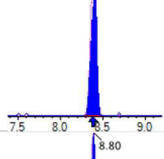
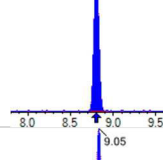
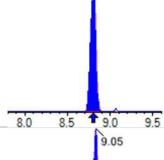
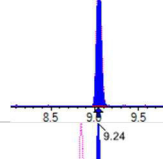
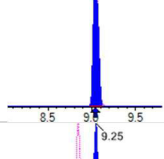
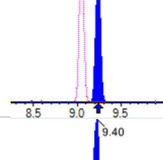
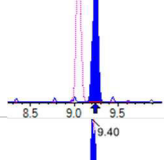
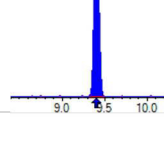
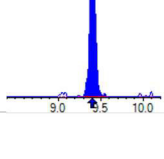


Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

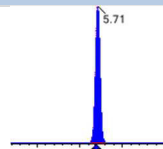
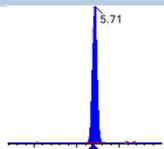
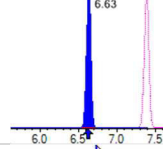
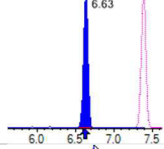
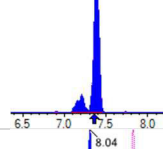
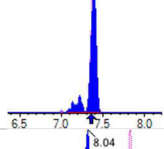
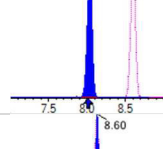
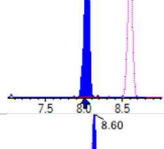
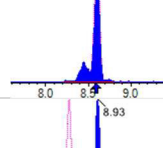
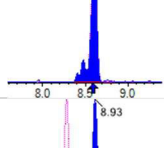
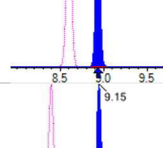
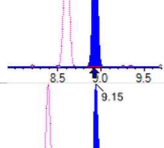
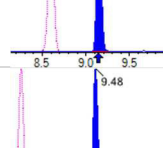
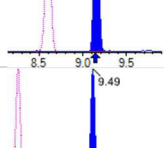
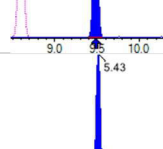
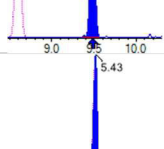
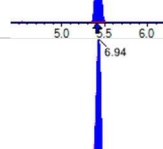
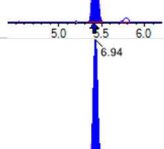
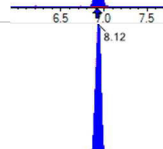
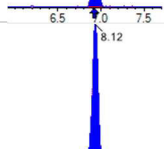
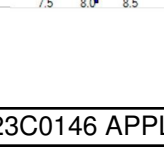
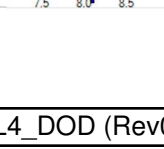
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 Acquisition Method: 1633 2023-03-07.dam

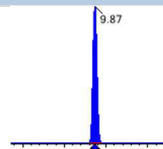
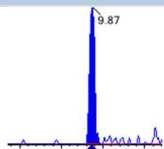
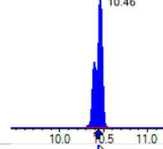
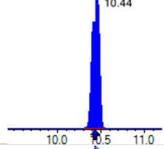
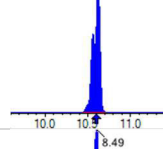
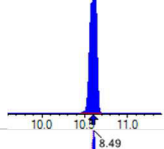
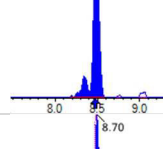
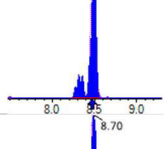
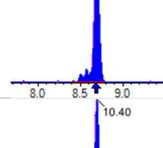
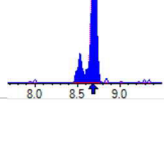
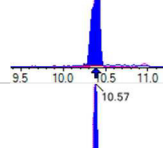
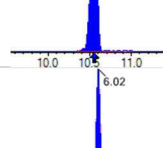
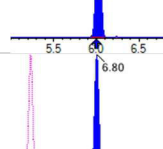
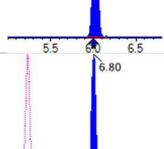
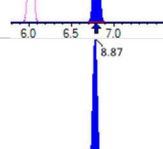
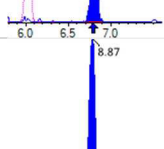
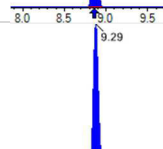
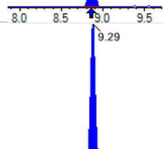
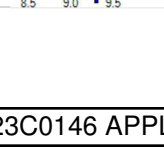
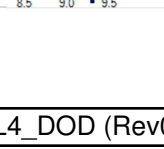
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 Acquired: 2023/03/07 - 15:26

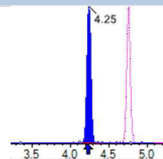
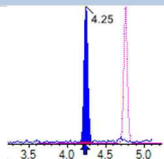
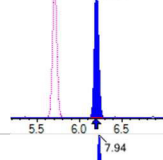
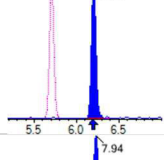
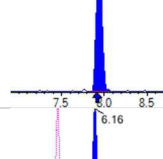
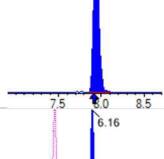
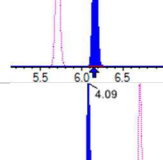
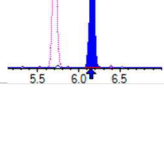
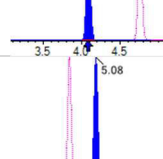
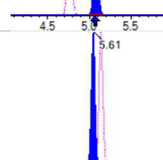
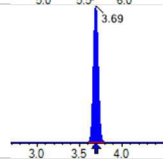

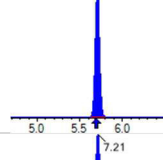
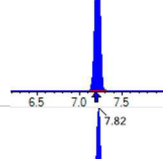
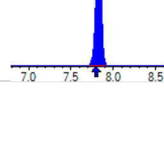
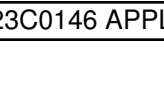
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 796982	(8.48, N/A) (N/A, 0.01, N/A)	3152.7	N/A	3.5688 [4.0000]	89.2% {99.5%}			
D5_EtFOSAA_EIS	(589.0 / 419.0) 841623	(8.68, N/A) (N/A, 0.01, N/A)	9213.0	N/A	3.3628 [4.0000]	84.1% {98.1%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 3021000	(10.39, N/A) (N/A, 0.02, N/A)	1780.0	N/A	16.9868 [20.0000]	84.9% {89.6%}			
D9_NEtFOSE_EIS	(639.0 / 58.9) 3094582	(10.55, N/A) (N/A, 0.02, N/A)	1545.9	N/A	14.7426 [20.0000]	73.7% {74.5%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 1927474	(6.01, N/A) (N/A, 0.01, N/A)	4848.5	N/A	7.7480 [8.0000]	96.8% {95.5%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 455227	(3.69, 1.00) (0.00, N/A, 0.0)	224.7	N/A 0.0 0.0	1.7898 [2.0000]	89.5%			
PFPeA	(263.0 / 219.0) 328099 (263.0 / 69.0) 4345	(4.76, 1.00) (0.00, N/A, 0.2)	1471.1 119.8	0.0132 117.0 117.0	0.9226 [1.0000]	92.3%			
PFHxA	(313.0 / 269.0) 190755 (313.0 / 119.0) 17900	(5.71, 1.00) (0.00, N/A, 0.1)	1071.9 996930.8	0.0938 89.1 89.1	0.4379 [0.5000]	87.6%			
PFHpA	(363.0 / 319.0) 183325 (363.0 / 169.0) 54605	(6.52, 1.00) (0.00, N/A, -0.3)	6717.1 1612616.1	0.2979 91.4 91.4	0.4744 [0.5000]	94.9%			
PFOA	(413.0 / 369.0) 257420 (413.0 / 169.0) 66595	(7.21, 1.00) (0.00, N/A, 0.2)	5929.9 2988.3	0.2587 74.2 74.2	0.5237 [0.5000]	104.7%			
PFNA	(463.0 / 419.0) 193249 (463.0 / 169.0) 36131	(7.82, 1.00) (0.00, N/A, 0.2)	220427.4 65363.8	0.1870 79.9 79.9	0.4440 [0.5000]	88.8%			
PFDA	(513.0 / 469.0) 230567 (513.0 / 169.0) 28620	(8.39, 1.00) (0.00, N/A, -0.6)	513.3 1960.6	0.1241 116.7 116.7	0.4778 [0.5000]	95.6%			
PFUnA	(563.0 / 519.0) 221078 (563.0 / 169.0) 22013	(8.80, 1.00) (0.00, N/A, 0.1)	538.4 280.6	0.0996 83.0 83.0	0.4615 [0.5000]	92.3%			
PFDoA	(613.0 / 569.0) 204043 (613.0 / 169.0) 38178	(9.05, 1.00) (0.00, N/A, 0.1)	898.5 504.6	0.1871 115.0 115.0	0.4596 [0.5000]	91.9%			
PFTTrDA	(663.0 / 619.0) 208748 (663.0 / 169.0) 39960	(9.24, 1.02) (N/A, 0.00, -0.4)	1078.3 449.6	0.1914 78.4 78.4	0.4903 [0.5000]	98.1%			
PFTeDA	(713.0 / 669.0) 226933 (713.0 / 169.0) 49334	(9.40, 1.00) (0.00, N/A, 0.1)	703.5 229.2	0.2174 113.7 113.7	0.5221 [0.5000]	104.4%			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 316246 (299.0 / 99.0) 196788	(5.71, 1.00) (0.00, N/A, 0.0)	1678.2 776.6	0.6223 106.1 106.1	0.4087 [0.4424]	92.4%			
PFPeS	(349.0 / 80.0) 527204 (349.0 / 99.0) 189586	(6.63, 0.90) (N/A, 0.02, 0.0)	13141.5 8074.6	0.3596 105.3 105.3	0.4257 [0.4692]	90.7%			
PFHxS	(399.0 / 80.0) 465434 (399.0 / 99.0) 154312	(7.39, 1.00) (0.00, N/A, -0.2)	964.4 4798.4	0.3315 96.7 96.7	0.4132 [0.4555]	90.7%			
PFHpS	(449.0 / 80.0) 521809 (449.0 / 99.0) 143392	(8.04, 0.93) (N/A, 0.02, -0.2)	2749.5 16469.5	0.2748 96.7 96.7	0.4605 [0.4757]	96.8%			
PFOS	(499.0 / 80.0) 676229 (499.0 / 99.0) 139692	(8.60, 1.00) (0.00, N/A, 0.0)	956.0 326.0	0.2066 95.4 95.4	0.4801 [0.4637]	103.5%			
PFNS	(549.0 / 80.0) 596385 (549.0 / 99.0) 150729	(8.93, 1.04) (N/A, 0.01, 0.0)	592856.6 3474961.5	0.2527 110.2 110.2	0.4465 [0.4799]	93.0%			
PFDS	(599.0 / 80.0) 735875 (599.0 / 99.0) 156051	(9.15, 1.06) (N/A, 0.00, 0.0)	1967.8 877.2	0.2121 93.7 93.7	0.4769 [0.4816]	99.0%			
PFDoS	(699.0 / 80.0) 504938 (699.0 / 99.0) 130712	(9.48, 1.10) (N/A, 0.00, -0.2)	1018.8 724.9	0.2589 118.7 118.7	0.4094 [0.4848]	84.4%			
4:2FTS	(327.0 / 307.0) 386759 (327.0 / 81.0) 237345	(5.43, 1.00) (0.00, N/A, -0.2)	2126.8 802.1	0.6137 99.1 99.1	1.8002 [1.8691]	96.3%			
6:2FTS	(427.0 / 407.0) 257827 (427.0 / 81.0) 196330	(6.94, 1.00) (0.00, N/A, 0.1)	2075563.3 820.3	0.7615 110.2 110.2	1.9585 [1.8981]	103.2%			
8:2FTS	(527.0 / 507.0) 235758 (527.0 / 81.0) 158061	(8.12, 1.00) (0.00, N/A, 0.1)	3748859.8 423.3	0.6704 99.3 99.3	1.8998 [1.9166]	99.1%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 854679 (498.0 / 478.0) 18444	(9.87, 1.00) (0.00, N/A, -0.3)	2169.4 108.1	0.0216 97.1 97.1	0.4736 [ 0.5000 ]	94.7%			
NMeFOSA	(512.0 / 219.0) 832092 (512.0 / 169.0) 691913	(10.46, 1.00) (0.00, N/A, 1.1)	2834.8 2529.2	0.8315 99.4 99.4	1.9987 [ 2.0000 ]	99.9%			
NEIFOSA	(526.0 / 219.0) 890901 (526.0 / 169.0) 1086997	(10.62, 1.00) (0.00, N/A, 0.7)	4115.2 3001.3	1.2201 95.6 95.6	1.8946 [ 2.0000 ]	94.7%			
NMeFOSAA	(570.0 / 419.0) 98636 (570.0 / 483.0) 50529	(8.49, 1.00) (0.00, N/A, -0.4)	95407.0 519.8	0.5123 109.1 109.1	0.4775 [ 0.5000 ]	95.5%			
NEIFOSAA	(584.0 / 419.0) 92111 (584.0 / 526.0) 61102	(8.70, 1.00) (0.01, N/A, 0.0)	2470949.5 1556.1	0.6634 103.9 103.9	0.4852 [ 0.5000 ]	97.0%			
NMeFOSE	(616.0 / 59.0) 310153	(10.40, 1.00) (0.01, N/A, 0.0)	663.2	N/A 0.0 0.0	1.8434 [ 2.0000 ]	92.2%			
NEtFOSE	(630.0 / 59.0) 367566	(10.57, 1.00) (0.01, N/A, 0.0)	600.8	N/A 0.0 0.0	1.8862 [ 2.0000 ]	94.3%			
HFPO-DA	(285.0 / 169.0) 208541 (285.0 / 185.0) 532496	(6.02, 1.00) (0.00, N/A, 0.0)	3299.1 1641.0	2.5534 94.9 94.9	0.9922 [ 1.0000 ]	99.2%			
ADONA	(377.0 / 85.0) 795288 (377.0 / 251.0) 78107	(6.80, 1.13) (N/A, 0.01, 0.1)	2279.0 401.4	0.0982 101.7 101.7	0.9625 [ 0.9427 ]	102.1%			
9CI-Pf3ONS	(531.0 / 351.0) 1961185 (533.0 / 353.0) 565812	(8.87, 1.47) (N/A, 0.01, -0.1)	2236.9 840.7	0.2885 90.4 90.4	0.8805 [ 0.9333 ]	94.3%			
11CI-PF3OUDS	(631.0 / 451.0) 1040449 (633.0 / 453.0) 385409	(9.29, 1.54) (N/A, 0.00, -0.1)	1895.1 1508.9	0.3704 111.2 111.2	0.7923 [ 0.9432 ]	84.0%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 19845 (241.0 / 117.0) 37411	(4.25, 0.89) (N/A, 0.02, 0.0)	508.6 234.6	1.8852 92.5 92.5	1.8536 [2.0000]	92.7%			
5:3FTCA	(341.0 / 236.7) 128484 (341.0 / 217.0) 203042	(6.20, 1.09) (N/A, 0.01, -0.2)	4279.2 524.6	1.5803 95.9 95.9	1.7280 [2.0000]	86.4%			
7:3FTCA	(441.0 / 317.0) 224708 (441.0 / 337.0) 196165	(7.94, 1.39) (N/A, 0.03, 0.0)	590.1 2280.8	0.8730 101.9 101.9	1.8006 [2.0000]	90.0%			
PFEESA	(315.0 / 135.0) 443375 (315.0 / 83.0) 122369	(6.16, 1.08) (N/A, 0.02, -0.2)	2525.7 798.5	0.2760 106.5 106.5	0.8161 [0.8925]	91.4%			
PFMPA	(229.0 / 85.0) 89548	(4.09, 0.86) (N/A, 0.01, 0.0)	2484.0	N/A 0.0 0.0	0.9782 [1.0000]	97.8%			
PFMBA	(279.0 / 85.0) 277376	(5.08, 1.07) (N/A, 0.02, 0.0)	2509.0	N/A 0.0 0.0	0.9487 [1.0000]	94.9%			
NFDHA	(295.0 / 201.0) 220153 (295.0 / 85.0) 222534	(5.61, 0.98) (N/A, 0.02, 0.0)	15813.8 2532.8	1.0108 100.6 100.6	0.8915 [1.0000]	89.1%			
13C3_PFBA_IIS	(216.0 / 172.0) 242927	(3.69, N/A) (N/A, 0.01, N/A)	1826.8	N/A	1.1341 [1.0000]	113.4% {120.0%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 329316	(5.71, N/A) (N/A, 0.02, N/A)	8544.9	N/A	1.0485 [1.0000]	104.9% {115.4%}			
13C4_PFOA_IIS	(417.0 / 372.0) 449439	(7.21, N/A) (N/A, 0.02, N/A)	2275.9	N/A	0.9732 [1.0000]	97.3% {107.2%}			
13C5_PFNA_IIS	(468.0 / 423.0) 428731	(7.82, N/A) (N/A, 0.03, N/A)	8569.8	N/A	1.0273 [1.0000]	102.7% {111.1%}			

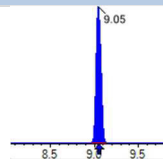
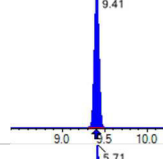
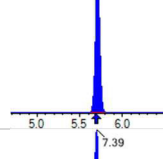
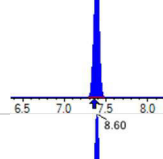
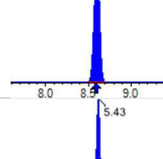
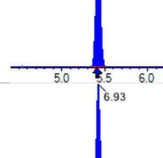
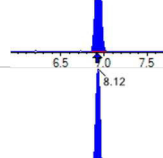
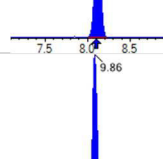
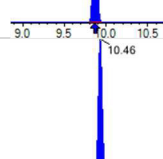
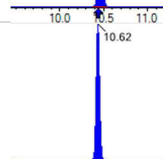
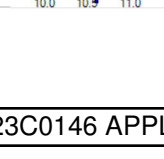


Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (2)  
 Acquired: 2023/03/07 - 15:38

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 405427	(8.39, N/A) (N/A, 0.02, N/A)	5092452.6	N/A	1.0095 [ 1.0000 ]	100.9% { 105.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 697940	(7.39, N/A) (N/A, 0.03, N/A)	2770.9	N/A	1.0280 [ 1.0000 ]	102.8% { 116.6% }			
13C4_PFOS_IIS	(503.0 / 79.9) 897280	(8.60, N/A) (N/A, 0.02, N/A)	1604.6	N/A	1.0457 [ 1.0000 ]	104.6% { 107.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2463970	(3.69, N/A) (N/A, 0.01, N/A)	9039.7	N/A	8.5229 [ 8.0000 ]	106.5% { 116.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1617212	(4.76, N/A) (N/A, 0.02, N/A)	4929.1	N/A	4.2511 [ 4.0000 ]	106.3% { 107.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 979923	(5.71, N/A) (N/A, 0.02, N/A)	5857.5	N/A	2.1349 [ 2.0000 ]	106.7% { 112.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 916054	(6.52, N/A) (N/A, 0.01, N/A)	11435.7	N/A	2.0950 [ 2.0000 ]	104.8% { 108.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 1083163	(7.21, N/A) (N/A, 0.02, N/A)	3719.5	N/A	2.2183 [ 2.0000 ]	110.9% { 107.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 502984	(7.82, N/A) (N/A, 0.03, N/A)	2106.0	N/A	1.1041 [ 1.0000 ]	110.4% { 108.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 511574	(8.39, N/A) (N/A, 0.02, N/A)	6049.7	N/A	1.0484 [ 1.0000 ]	104.8% { 101.7% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 599841	(8.80, N/A) (N/A, 0.01, N/A)	3793.6	N/A	1.1026 [ 1.0000 ]	110.3% { 114.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 527697	(9.05, N/A) (N/A, 0.00, N/A)	3454.7	N/A	1.1096 [ 1.0000 ]	111.0% { 115.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 509082	(9.41, N/A) (N/A, 0.01, N/A)	1868.5	N/A	1.0150 [ 1.0000 ]	101.5% { 102.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2397478	(5.71, N/A) (N/A, 0.02, N/A)	7429.2	N/A	2.1683 [ 2.0000 ]	108.4% { 105.6% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1501777	(7.39, N/A) (N/A, 0.03, N/A)	2781.4	N/A	2.0914 [ 2.0000 ]	104.6% { 105.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2496896	(8.60, N/A) (N/A, 0.01, N/A)	2408.5	N/A	2.0755 [ 2.0000 ]	103.8% { 106.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 294629	(5.43, N/A) (N/A, 0.02, N/A)	1737.0	N/A	4.2008 [ 4.0000 ]	105.0% { 109.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 366584	(6.93, N/A) (N/A, 0.01, N/A)	1231.9	N/A	3.9810 [ 4.0000 ]	99.5% { 99.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 370815	(8.12, N/A) (N/A, 0.02, N/A)	1405.7	N/A	3.7171 [ 4.0000 ]	92.9% { 96.7% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 4348406	(9.86, N/A) (N/A, 0.01, N/A)	4293.1	N/A	2.1132 [ 2.0000 ]	105.7% { 103.5% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 1012642	(10.46, N/A) (N/A, 0.02, N/A)	2873.7	N/A	1.9234 [ 2.0000 ]	96.2% { 92.9% }			
D5_NEiFOsa_EIS	(531.0 / 169.0) 987911	(10.62, N/A) (N/A, 0.02, N/A)	4580.8	N/A	2.0615 [ 2.0000 ]	103.1% { 95.4% }			



Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (2)  
 Acquired: 2023/03/07 - 15:38

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 802280	( 8.48 , N/A ) ( N/A , 0.02 , N/A )	1842.4	N/A	3.8998 [ 4.0000 ]	97.5% { 100.2% }			
D5_EtFOSAA_EIS	( 589.0 / 419.0 ) 906390	( 8.69 , N/A ) ( N/A , 0.01 , N/A )	11760.9	N/A	3.9314 [ 4.0000 ]	98.3% { 105.6% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 3397576	( 10.39 , N/A ) ( N/A , 0.02 , N/A )	1623.3	N/A	20.7383 [ 20.0000 ]	103.7% { 100.8% }			
D9_NEtFOSE_EIS	( 639.0 / 58.9 ) 4032210	( 10.56 , N/A ) ( N/A , 0.02 , N/A )	1930.3	N/A	20.8526 [ 20.0000 ]	104.3% { 97.0% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 2115142	( 6.02 , N/A ) ( N/A , 0.02 , N/A )	3997.1	N/A	8.3443 [ 8.0000 ]	104.3% { 104.8% }			



Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (3)  
 Acquired: 2023/03/07 - 15:51

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 899583	(3.69, 1.00) (0.00, N/A, 0.0)	233.3	N/A 0.0 0.0	3.8750 [ 4.0000 ]	96.9%			
PFPeA	(263.0 / 219.0) 675582 (263.0 / 69.0) 8867	(4.76, 1.00) (0.00, N/A, 0.1)	2191.6 300.6	0.0131 115.9 115.9	1.9529 [ 2.0000 ]	97.6%			
PFHxA	(313.0 / 269.0) 424895 (313.0 / 119.0) 37252	(5.71, 1.00) (0.00, N/A, 0.0)	2976.9 3851.0	0.0877 83.2 83.2	1.0040 [ 1.0000 ]	100.4%			
PFHpA	(363.0 / 319.0) 405820 (363.0 / 169.0) 117751	(6.52, 1.00) (0.00, N/A, -0.1)	7261.0 1907.9	0.2902 89.0 89.0	1.0637 [ 1.0000 ]	106.4%			
PFOA	(413.0 / 369.0) 440285 (413.0 / 169.0) 145747	(7.22, 1.00) (0.00, N/A, -0.1)	7768.8 2921.5	0.3310 95.0 95.0	0.9220 [ 1.0000 ]	92.2%			
PFNA	(463.0 / 419.0) 390987 (463.0 / 169.0) 87664	(7.83, 1.00) (0.00, N/A, 0.0)	72875.1 8318.5	0.2242 95.8 95.8	1.0853 [ 1.0000 ]	108.5%			
PFDA	(513.0 / 469.0) 465069 (513.0 / 169.0) 46675	(8.39, 1.00) (0.00, N/A, -0.1)	820.5 2094.2	0.1004 94.4 94.4	0.9801 [ 1.0000 ]	98.0%			
PFUnA	(563.0 / 519.0) 432933 (563.0 / 169.0) 50105	(8.81, 1.00) (0.00, N/A, 0.1)	1014.0 62932.3	0.1157 96.5 96.5	0.9185 [ 1.0000 ]	91.9%			
PFDoA	(613.0 / 569.0) 398515 (613.0 / 169.0) 50836	(9.05, 1.00) (0.00, N/A, -0.1)	1045.6 12833.9	0.1276 78.4 78.4	0.9757 [ 1.0000 ]	97.6%			
PFTTrDA	(663.0 / 619.0) 418211 (663.0 / 169.0) 95943	(9.24, 1.02) (N/A, 0.00, 0.1)	1247.2 9863.0	0.2294 94.0 94.0	1.0678 [ 1.0000 ]	106.8%			
PFTeDA	(713.0 / 669.0) 458171 (713.0 / 169.0) 80613	(9.40, 1.00) (0.00, N/A, -0.2)	1401.2 1107.6	0.1759 92.1 92.1	1.0311 [ 1.0000 ]	103.1%			



Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (3)  
 Acquired: 2023/03/07 - 15:51

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 615389 (299.0 / 99.0) 398293	(5.71, 1.00) (0.00, N/A, 0.0)	3478.3 1787.2	0.6472 110.3 110.3	0.8019 [0.8847]	90.6%			
PFPeS	(349.0 / 80.0) 1058429 (349.0 / 99.0) 345280	(6.64, 0.90) (N/A, 0.02, 0.0)	149574.9 33207.6	0.3262 95.5 95.5	0.8809 [0.9384]	93.9%			
PFHxS	(399.0 / 80.0) 1001120 (399.0 / 99.0) 324544	(7.39, 1.00) (0.00, N/A, -0.1)	958926.2 4445.9	0.3242 94.6 94.6	0.9159 [0.9110]	100.5%			
PFHpS	(449.0 / 80.0) 1006957 (449.0 / 99.0) 307697	(8.04, 0.93) (N/A, 0.03, -0.1)	1171086.0 6762.9	0.3056 107.5 107.5	0.8910 [0.9514]	93.7%			
PFOS	(499.0 / 80.0) 1192555 (499.0 / 99.0) 271910	(8.61, 1.00) (0.00, N/A, 0.3)	925.9 283.0	0.2280 105.3 105.3	0.8490 [0.9275]	91.5%			
PFNS	(549.0 / 80.0) 1227937 (549.0 / 99.0) 306323	(8.94, 1.04) (N/A, 0.01, -0.2)	7413.5 6281866.2	0.2495 108.8 108.8	0.9219 [0.9599]	96.0%			
PFDS	(599.0 / 80.0) 1438750 (599.0 / 99.0) 323735	(9.15, 1.06) (N/A, 0.01, 0.0)	2168.1 1345.4	0.2250 99.4 99.4	0.9349 [0.9631]	97.1%			
PFDoS	(699.0 / 80.0) 1135032 (699.0 / 99.0) 239155	(9.48, 1.10) (N/A, 0.01, -0.1)	2208.1 871.3	0.2107 96.6 96.6	0.9227 [0.9696]	95.2%			
4:2FTS	(327.0 / 307.0) 797684 (327.0 / 81.0) 463911	(5.43, 1.00) (0.00, N/A, -0.1)	2630.2 1010.4	0.5816 93.9 93.9	4.0135 [3.7381]	107.4%			
6:2FTS	(427.0 / 407.0) 496112 (427.0 / 81.0) 365759	(6.94, 1.00) (0.00, N/A, -0.1)	10732.5 2049.8	0.7373 106.7 106.7	3.7567 [3.7962]	99.0%			
8:2FTS	(527.0 / 507.0) 506485 (527.0 / 81.0) 360588	(8.12, 1.00) (0.01, N/A, 0.2)	2971154.2 1405.3	0.7119 105.4 105.4	4.0025 [3.8332]	104.4%			



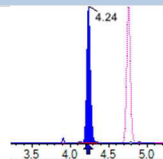
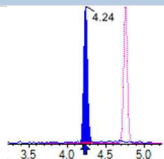
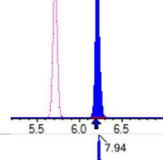
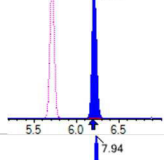
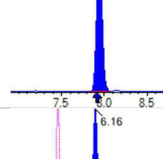
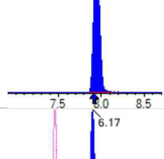
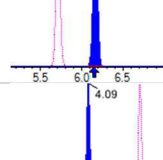
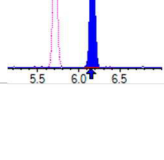
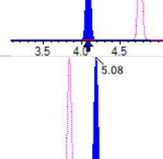
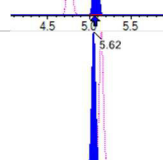
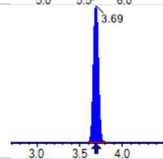

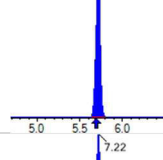
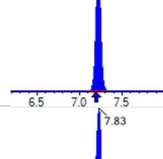
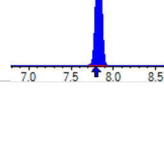
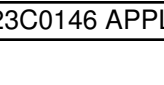


Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (3)  
 Acquired: 2023/03/07 - 15:51

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 1733815 (498.0 / 478.0) 41303	(9.87, 1.00) (0.00, N/A, -0.1)	3820.9 317.0	0.0238 107.2 107.2	0.9965 [ 1.0000 ]	99.7%			
NMeFOSEA	(512.0 / 219.0) 1804160 (512.0 / 169.0) 1466966	(10.47, 1.00) (0.00, N/A, 1.0)	5320.7 3512.8	0.8131 97.2 97.2	4.2050 [ 4.0000 ]	105.1%			
NEIFOSA	(526.0 / 219.0) 1924663 (526.0 / 169.0) 2364022	(10.62, 1.00) (0.00, N/A, 0.9)	5871.8 5658.9	1.2283 96.2 96.2	3.9752 [ 4.0000 ]	99.4%			
NMeFOSAA	(570.0 / 419.0) 209471 (570.0 / 483.0) 97761	(8.49, 1.00) (0.00, N/A, 0.1)	5055.4 1376.0	0.4667 99.4 99.4	0.9998 [ 1.0000 ]	100.0%			
NEIFOSAA	(584.0 / 419.0) 182265 (584.0 / 526.0) 95982	(8.69, 1.00) (0.00, N/A, -0.3)	190588.3 992.3	0.5266 82.5 82.5	0.9131 [ 1.0000 ]	91.3%			
NMeFOSE	(616.0 / 59.0) 641996	(10.41, 1.00) (0.01, N/A, 0.0)	912.7	N/A 0.0 0.0	3.9310 [ 4.0000 ]	98.3%			
NEtFOSE	(630.0 / 59.0) 785939	(10.57, 1.00) (0.01, N/A, 0.0)	979.4	N/A 0.0 0.0	3.8482 [ 4.0000 ]	96.2%			
HFPO-DA	(285.0 / 169.0) 379118 (285.0 / 185.0) 1021866	(6.03, 1.00) (0.00, N/A, -0.1)	1971.1 3001.7	2.6954 100.1 100.1	2.0057 [ 2.0000 ]	100.3%			
ADONA	(377.0 / 85.0) 1508398 (377.0 / 251.0) 178454	(6.81, 1.13) (N/A, 0.02, -0.1)	3205.3 782.7	0.1183 122.5 122.5	2.0299 [ 1.8854 ]	107.7%			
9CI-Pf3ONS	(531.0 / 351.0) 4092531 (533.0 / 353.0) 1268614	(8.87, 1.47) (N/A, 0.01, 0.1)	3430.5 1626.8	0.3100 97.2 97.2	2.0432 [ 1.8665 ]	109.5%			
11CI-PF3OUDS	(631.0 / 451.0) 2243763 (633.0 / 453.0) 757471	(9.29, 1.54) (N/A, 0.00, 0.0)	4136.5 11423.2	0.3376 101.4 101.4	1.8489 [ 1.8864 ]	98.0%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 39190 (241.0 / 117.0) 69278	(4.24, 0.89) (N/A, 0.01, 0.0)	853.0 384.6	1.7678 86.7 86.7	3.7631 [4.0000]	94.1%			
5:3FTCA	(341.0 / 236.7) 282646 (341.0 / 217.0) 452482	(6.21, 1.09) (N/A, 0.03, 0.1)	1702.4 1217.0	1.6009 97.2 97.2	3.9123 [4.0000]	97.8%			
7:3FTCA	(441.0 / 317.0) 421980 (441.0 / 337.0) 371193	(7.94, 1.39) (N/A, 0.03, -0.3)	1090.9 1049.1	0.8796 102.7 102.7	3.4801 [4.0000]	87.0%			
PFEESA	(315.0 / 135.0) 892808 (315.0 / 83.0) 256798	(6.16, 1.08) (N/A, 0.02, -0.1)	3617.4 756.5	0.2876 111.0 111.0	1.6914 [1.7849]	94.8%			
PFMPA	(229.0 / 85.0) 166754	(4.09, 0.86) (N/A, 0.01, 0.0)	4633.2	N/A 0.0 0.0	1.8726 [2.0000]	93.6%			
PFMBA	(279.0 / 85.0) 556248	(5.08, 1.07) (N/A, 0.02, 0.0)	3540.3	N/A 0.0 0.0	1.9558 [2.0000]	97.8%			
NFDHA	(295.0 / 201.0) 441885 (295.0 / 85.0) 434993	(5.62, 0.98) (N/A, 0.02, -0.1)	2916.2 2312.3	0.9844 98.0 98.0	1.8416 [2.0000]	92.1%			
13C3_PFBA_IIS	(216.0 / 172.0) 229958	(3.69, N/A) (N/A, 0.01, N/A)	2206.8	N/A	1.0736 [1.0000]	107.4% {113.6%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 323301	(5.72, N/A) (N/A, 0.03, N/A)	2814.3	N/A	1.0294 [1.0000]	102.9% {113.3%}			
13C4_PFOA_IIS	(417.0 / 372.0) 473706	(7.22, N/A) (N/A, 0.03, N/A)	353.5	N/A	1.0257 [1.0000]	102.6% {113.0%}			
13C5_PFNA_IIS	(468.0 / 423.0) 415237	(7.83, N/A) (N/A, 0.03, N/A)	7018.9	N/A	0.9950 [1.0000]	99.5% {107.6%}			

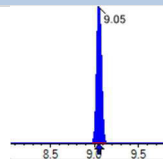
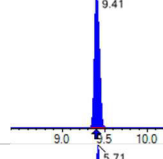
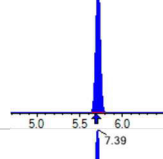
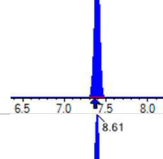
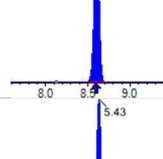
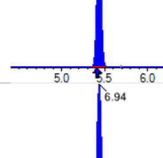
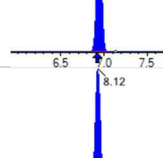
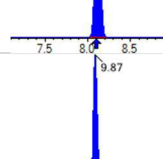
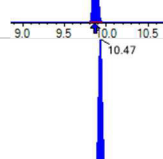
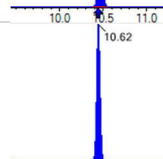
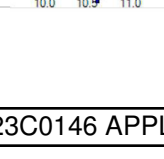


Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (3)  
 Acquired: 2023/03/07 - 15:51

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 373543	(8.40, N/A) (N/A, 0.02, N/A)	297.7	N/A	0.9301 [ 1.0000 ]	93.0% { 97.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 670924	(7.39, N/A) (N/A, 0.04, N/A)	3693.4	N/A	0.9882 [ 1.0000 ]	98.8% { 112.1% }			
13C4_PFOS_IIS	(503.0 / 79.9) 872005	(8.61, N/A) (N/A, 0.02, N/A)	1193.8	N/A	1.0162 [ 1.0000 ]	101.6% { 104.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2248973	(3.69, N/A) (N/A, 0.01, N/A)	6273.9	N/A	8.2180 [ 8.0000 ]	102.7% { 106.3% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1573121	(4.76, N/A) (N/A, 0.02, N/A)	4085.3	N/A	4.2121 [ 4.0000 ]	105.3% { 104.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 952129	(5.71, N/A) (N/A, 0.02, N/A)	2897.9	N/A	2.1129 [ 2.0000 ]	105.6% { 109.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 904375	(6.52, N/A) (N/A, 0.02, N/A)	3801.6	N/A	2.1068 [ 2.0000 ]	105.3% { 107.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 1052237	(7.22, N/A) (N/A, 0.03, N/A)	8472.9	N/A	2.0446 [ 2.0000 ]	102.2% { 104.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 416332	(7.83, N/A) (N/A, 0.04, N/A)	50832.2	N/A	0.9436 [ 1.0000 ]	94.4% { 89.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 503009	(8.39, N/A) (N/A, 0.02, N/A)	6142.5	N/A	1.1189 [ 1.0000 ]	111.9% { 100.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 590145	(8.81, N/A) (N/A, 0.01, N/A)	9698.8	N/A	1.1774 [ 1.0000 ]	117.7% { 112.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 485494	(9.05, N/A) (N/A, 0.01, N/A)	50290.7	N/A	1.1080 [ 1.0000 ]	110.8% { 106.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 520469	(9.41, N/A) (N/A, 0.01, N/A)	2897.3	N/A	1.1263 [ 1.0000 ]	112.6% { 104.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2377635	(5.71, N/A) (N/A, 0.03, N/A)	4276.3	N/A	2.2369 [ 2.0000 ]	111.8% { 104.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1457103	(7.39, N/A) (N/A, 0.03, N/A)	1949.9	N/A	2.1109 [ 2.0000 ]	105.5% { 102.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2490101	(8.61, N/A) (N/A, 0.02, N/A)	2350.5	N/A	2.1299 [ 2.0000 ]	106.5% { 106.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 272564	(5.43, N/A) (N/A, 0.02, N/A)	1232.8	N/A	4.0427 [ 4.0000 ]	101.1% { 100.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 367740	(6.94, N/A) (N/A, 0.02, N/A)	1880.2	N/A	4.1543 [ 4.0000 ]	103.9% { 99.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 378126	(8.12, N/A) (N/A, 0.02, N/A)	1848.9	N/A	3.9430 [ 4.0000 ]	98.6% { 98.6% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 4192639	(9.87, N/A) (N/A, 0.01, N/A)	3885.8	N/A	2.0965 [ 2.0000 ]	104.8% { 99.8% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 1043595	(10.47, N/A) (N/A, 0.03, N/A)	2728.0	N/A	2.0397 [ 2.0000 ]	102.0% { 95.7% }			
D5_NEiFOSA_EIS	(531.0 / 169.0) 1017207	(10.62, N/A) (N/A, 0.03, N/A)	4606.7	N/A	2.1842 [ 2.0000 ]	109.2% { 98.2% }			

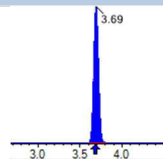
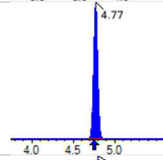
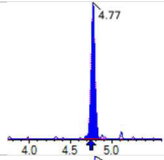
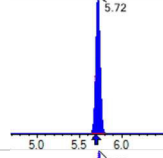
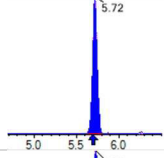
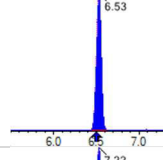
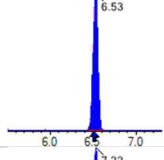
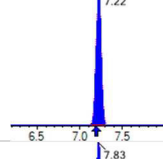
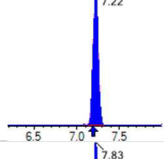
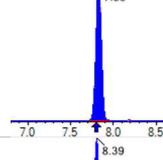
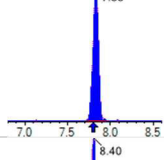
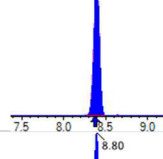
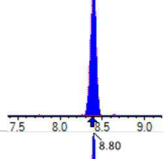
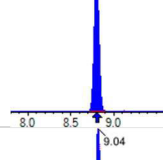
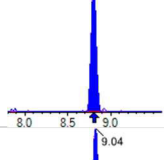
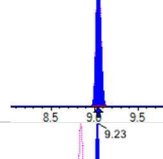
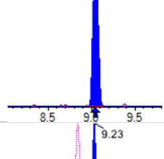
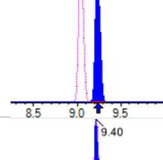
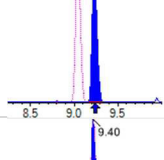
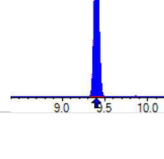
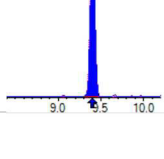


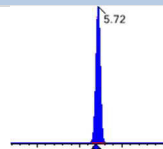
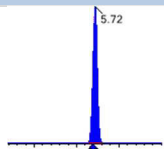
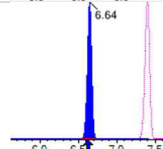
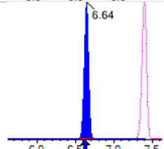
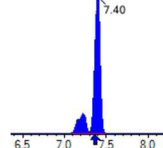
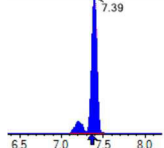
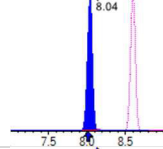
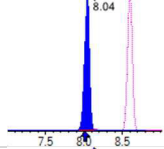
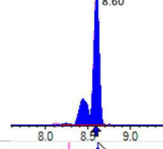
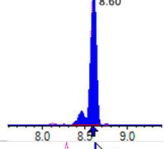
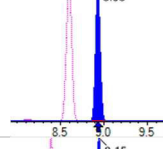
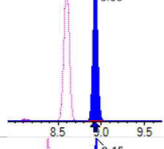
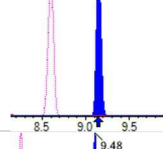
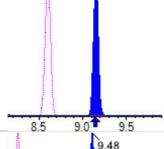
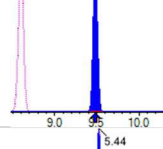
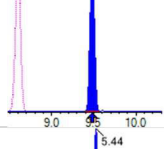
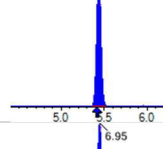
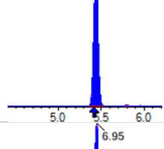
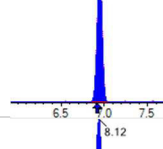
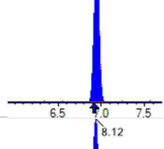
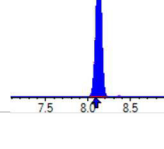
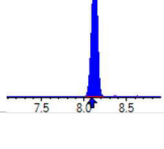
Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (3)  
 Acquired: 2023/03/07 - 15:51

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 813696	( 8.49 , N/A ) ( N/A , 0.02 , N/A )	4157.5	N/A	4.0700 [ 4.0000 ]	101.7% { 101.6% }			
D5_EtFOSAA_EIS	( 589.0 / 419.0 ) 952968	( 8.69 , N/A ) ( N/A , 0.02 , N/A )	694005.0	N/A	4.2532 [ 4.0000 ]	106.3% { 111.0% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 3298043	( 10.40 , N/A ) ( N/A , 0.03 , N/A )	1524.5	N/A	20.7142 [ 20.0000 ]	103.6% { 97.9% }			
D9_NEtFOSE_EIS	( 639.0 / 58.9 ) 4225952	( 10.56 , N/A ) ( N/A , 0.03 , N/A )	1928.0	N/A	22.4880 [ 20.0000 ]	112.4% { 101.7% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1902126	( 6.02 , N/A ) ( N/A , 0.02 , N/A )	3072.4	N/A	7.6436 [ 8.0000 ]	95.5% { 94.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 1849907	(3.69, 1.00) (0.00, N/A, 0.0)	323.3	N/A 0.0 0.0	8.1022 [ 8.0000 ]	101.3%			
PFPeA	(263.0 / 219.0) 1294642 (263.0 / 69.0) 15077	(4.77, 1.00) (0.00, N/A, 0.0)	3404.4 299.0	0.0116 102.8 102.8	4.0826 [ 4.0000 ]	102.1%			
PFHxA	(313.0 / 269.0) 820543 (313.0 / 119.0) 85586	(5.72, 1.00) (0.00, N/A, 0.0)	7201.6 17397.8	0.1043 99.0 99.0	1.9672 [ 2.0000 ]	98.4%			
PFHpA	(363.0 / 319.0) 663043 (363.0 / 169.0) 199777	(6.53, 1.00) (0.00, N/A, 0.0)	144596.8 9449.4	0.3013 92.4 92.4	1.8653 [ 2.0000 ]	93.3%			
PFOA	(413.0 / 369.0) 908175 (413.0 / 169.0) 302595	(7.22, 1.00) (0.00, N/A, 0.0)	26262.5 7678.6	0.3332 95.6 95.6	1.9752 [ 2.0000 ]	98.8%			
PFNA	(463.0 / 419.0) 751547 (463.0 / 169.0) 160378	(7.83, 1.00) (0.00, N/A, -0.2)	14925.3 6102.5	0.2134 91.2 91.2	1.9216 [ 2.0000 ]	96.1%			
PFDA	(513.0 / 469.0) 893653 (513.0 / 169.0) 111167	(8.39, 1.00) (0.00, N/A, -0.2)	1373.3 25309.0	0.1244 116.9 116.9	1.9297 [ 2.0000 ]	96.5%			
PFUnA	(563.0 / 519.0) 888048 (563.0 / 169.0) 105722	(8.80, 1.00) (0.00, N/A, -0.1)	2145.5 992.5	0.1191 99.3 99.3	1.9211 [ 2.0000 ]	96.1%			
PFDoA	(613.0 / 569.0) 822634 (613.0 / 169.0) 118861	(9.04, 1.00) (0.00, N/A, -0.2)	1854.1 961.5	0.1445 88.8 88.8	1.9432 [ 2.0000 ]	97.2%			
PFTrDA	(663.0 / 619.0) 773173 (663.0 / 169.0) 182237	(9.23, 1.02) (N/A, 0.00, 0.1)	1462.0 1650.8	0.2357 96.6 96.6	1.9044 [ 2.0000 ]	95.2%			
PFTeDA	(713.0 / 669.0) 833839 (713.0 / 169.0) 181859	(9.40, 1.00) (0.00, N/A, -0.1)	2446.2 974.2	0.2181 114.1 114.1	2.0479 [ 2.0000 ]	102.4%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 1329915 (299.0 / 99.0) 818514	(5.72, 1.00) (0.00, N/A, 0.0)	2864.0 2405.9	0.6155 104.9 104.9	1.7696 [ 1.7695 ]	100.0%			
PFPeS	(349.0 / 80.0) 2279446 (349.0 / 99.0) 813391	(6.64, 0.90) (N/A, 0.03, 0.1)	5177.9 2382.8	0.3568 104.4 104.4	1.9167 [ 1.8768 ]	102.1%			
PFHxS	(399.0 / 80.0) 1895693 (399.0 / 99.0) 645001	(7.40, 1.00) (0.00, N/A, 0.2)	1134585.9 1960.8	0.3402 99.3 99.3	1.7523 [ 1.8220 ]	96.2%			
PFHpS	(449.0 / 80.0) 2026857 (449.0 / 99.0) 590814	(8.04, 0.93) (N/A, 0.03, -0.2)	1595077.5 3310.8	0.2915 102.6 102.6	1.8706 [ 1.9028 ]	98.3%			
PFOS	(499.0 / 80.0) 2470448 (499.0 / 99.0) 550553	(8.60, 1.00) (0.00, N/A, -0.1)	1721.0 821.1	0.2229 103.0 103.0	1.8345 [ 1.8550 ]	98.9%			
PFNS	(549.0 / 80.0) 2609531 (549.0 / 99.0) 645319	(8.93, 1.04) (N/A, 0.00, -0.1)	1186513.1 16939.5	0.2473 107.8 107.8	2.0433 [ 1.9198 ]	106.4%			
PFDS	(599.0 / 80.0) 2700710 (599.0 / 99.0) 603288	(9.15, 1.06) (N/A, 0.00, -0.1)	3278.4 1934.6	0.2234 98.7 98.7	1.8305 [ 1.9262 ]	95.0%			
PFDoS	(699.0 / 80.0) 2384829 (699.0 / 99.0) 542518	(9.48, 1.10) (N/A, 0.00, 0.0)	2589.2 920.5	0.2275 104.3 104.3	2.0222 [ 1.9391 ]	104.3%			
4:2FTS	(327.0 / 307.0) 1477302 (327.0 / 81.0) 951283	(5.44, 1.00) (0.00, N/A, 0.0)	4573.2 2203.8	0.6439 104.0 104.0	7.6654 [ 7.4762 ]	102.5%			
6:2FTS	(427.0 / 407.0) 982816 (427.0 / 81.0) 708608	(6.95, 1.00) (0.00, N/A, 0.0)	2028.0 1710.9	0.7210 104.4 104.4	8.2282 [ 7.5923 ]	108.4%			
8:2FTS	(527.0 / 507.0) 1014731 (527.0 / 81.0) 673071	(8.12, 1.00) (0.00, N/A, 0.1)	2795.6 1482.0	0.6633 98.2 98.2	8.1499 [ 7.6663 ]	106.3%			



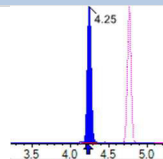
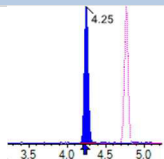
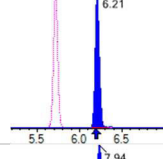
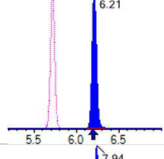
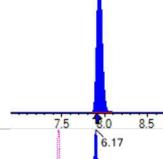
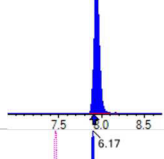
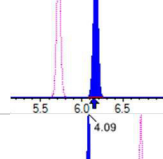
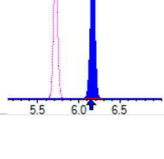
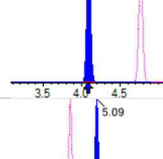
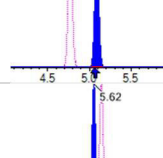
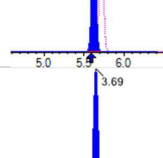
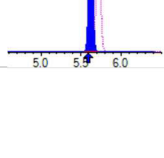
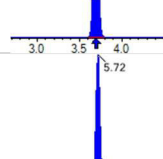
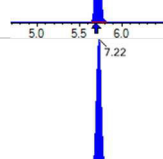
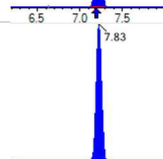
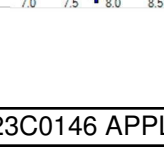
Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL4  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (4)  
 Acquired: 2023/03/07 - 16:04

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 3574964 (498.0 / 478.0) 72595	(9.86, 1.00) (0.00, N/A, -0.1)	3964.0 400.7	0.0203 91.4 91.4	2.0098 [2.0000]	100.5%			
NMeFOSA	(512.0 / 219.0) 3568843 (512.0 / 169.0) 2972036	(10.46, 1.00) (0.00, N/A, 1.1)	5747.5 5583.2	0.8328 99.6 99.6	8.7504 [8.0000]	109.4%			
NEIFOSA	(526.0 / 219.0) 3758190 (526.0 / 169.0) 4606849	(10.62, 1.00) (0.00, N/A, 1.0)	7512.8 9488.3	1.2258 96.0 96.0	8.2450 [8.0000]	103.1%			
NMeFOSAA	(570.0 / 419.0) 428380 (570.0 / 483.0) 207064	(8.48, 1.00) (0.00, N/A, -0.3)	135213.9 629.3	0.4834 102.9 102.9	2.1091 [2.0000]	105.5%			
NEIFOSAA	(584.0 / 419.0) 384457 (584.0 / 526.0) 191644	(8.69, 1.00) (0.00, N/A, -0.1)	9554.8 793.5	0.4985 78.1 78.1	1.9895 [2.0000]	99.5%			
NMeFOSE	(616.0 / 59.0) 1320905	(10.40, 1.00) (0.01, N/A, 0.0)	1699.7	N/A 0.0 0.0	7.9859 [8.0000]	99.8%			
NEIFOSE	(630.0 / 59.0) 1562452	(10.57, 1.00) (0.01, N/A, 0.0)	1827.5	N/A 0.0 0.0	7.8671 [8.0000]	98.3%			
HFPO-DA	(285.0 / 169.0) 771348 (285.0 / 185.0) 2190901	(6.03, 1.00) (0.00, N/A, -0.1)	2300.3 2990.1	2.8404 105.5 105.5	3.8303 [4.0000]	95.8%			
ADONA	(377.0 / 85.0) 2940301 (377.0 / 251.0) 309332	(6.81, 1.13) (N/A, 0.02, -0.2)	3936.8 1080.2	0.1052 108.9 108.9	3.7139 [3.7708]	98.5%			
9CI-Pf3ONS	(531.0 / 351.0) 8449291 (533.0 / 353.0) 2630210	(8.87, 1.47) (N/A, 0.01, 0.1)	3811.2 2678.5	0.3113 97.6 97.6	3.9592 [3.7330]	106.1%			
11CI-PF3OUDS	(631.0 / 451.0) 4441626 (633.0 / 453.0) 1563440	(9.29, 1.54) (N/A, 0.00, 0.0)	4320.3 2560.0	0.3520 105.7 105.7	3.4225 [3.7728]	90.7%			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 75885 (241.0 / 117.0) 153703	(4.25, 0.89) (N/A, 0.02, 0.0)	1274.3 776.6	2.0255 99.4 99.4	7.9490 [ 8.0000 ]	99.4%			
5:3FTCA	(341.0 / 236.7) 536060 (341.0 / 217.0) 812702	(6.21, 1.09) (N/A, 0.02, -0.1)	1781.7 1510.3	1.5161 92.0 92.0	7.5284 [ 8.0000 ]	94.1%			
7:3FTCA	(441.0 / 317.0) 933185 (441.0 / 337.0) 730861	(7.94, 1.39) (N/A, 0.03, -0.2)	1190.1 1352.0	0.7832 91.4 91.4	7.8087 [ 8.0000 ]	97.6%			
PFEESA	(315.0 / 135.0) 1789549 (315.0 / 83.0) 503296	(6.17, 1.08) (N/A, 0.03, 0.1)	4493.1 2090.7	0.2812 108.5 108.5	3.4399 [ 3.5698 ]	96.4%			
PFMPA	(229.0 / 85.0) 357853	(4.09, 0.86) (N/A, 0.02, 0.0)	3097.0	N/A 0.0 0.0	4.3839 [ 4.0000 ]	109.6%			
PFMBA	(279.0 / 85.0) 1086933	(5.09, 1.07) (N/A, 0.03, 0.0)	4311.6	N/A 0.0 0.0	4.1690 [ 4.0000 ]	104.2%			
NFDHA	(295.0 / 201.0) 891682 (295.0 / 85.0) 925802	(5.62, 0.98) (N/A, 0.03, 0.0)	3535.6 3290.3	1.0383 103.4 103.4	3.7705 [ 4.0000 ]	94.3%			
13C3_PFBA_IIS	(216.0 / 172.0) 247750	(3.69, N/A) (N/A, 0.01, N/A)	2370.3	N/A	1.1566 [ 1.0000 ]	115.7% { 122.4% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 310993	(5.72, N/A) (N/A, 0.03, N/A)	3117.6	N/A	0.9902 [ 1.0000 ]	99.0% { 109.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 506851	(7.22, N/A) (N/A, 0.03, N/A)	3984.4	N/A	1.0975 [ 1.0000 ]	109.8% { 120.9% }			
13C5_PFNA_IIS	(468.0 / 423.0) 464822	(7.83, N/A) (N/A, 0.03, N/A)	2448.2	N/A	1.1138 [ 1.0000 ]	111.4% { 120.4% }			

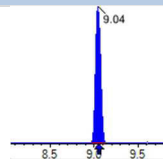
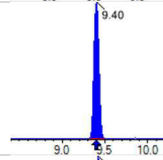
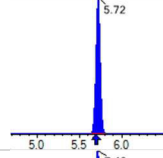
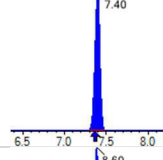
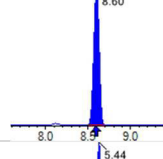
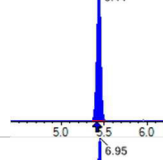
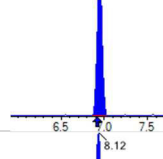
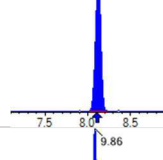
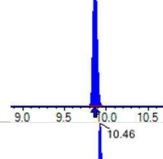
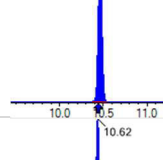
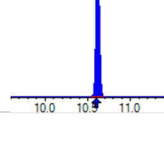


Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL4  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (4)  
 Acquired: 2023/03/07 - 16:04

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 421840	(8.39, N/A) (N/A, 0.02, N/A)	3055.2	N/A	1.0504 [ 1.0000 ]	105.0% { 109.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 709350	(7.40, N/A) (N/A, 0.04, N/A)	2597.5	N/A	1.0448 [ 1.0000 ]	104.5% { 118.5% }			
13C4_PFOS_IIS	(503.0 / 79.9) 964234	(8.60, N/A) (N/A, 0.01, N/A)	1382.7	N/A	1.1237 [ 1.0000 ]	112.4% { 115.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2211871	(3.69, N/A) (N/A, 0.01, N/A)	5892.5	N/A	7.5019 [ 8.0000 ]	93.8% { 104.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1442056	(4.77, N/A) (N/A, 0.03, N/A)	4413.1	N/A	4.0140 [ 4.0000 ]	100.3% { 95.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 938406	(5.72, N/A) (N/A, 0.03, N/A)	2648.8	N/A	2.1649 [ 2.0000 ]	108.2% { 107.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 842582	(6.53, N/A) (N/A, 0.02, N/A)	3209.3	N/A	2.0405 [ 2.0000 ]	102.0% { 99.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 1013121	(7.22, N/A) (N/A, 0.03, N/A)	726435.9	N/A	1.8399 [ 2.0000 ]	92.0% { 100.2% }			
13C9_PFNA_EIS	(472.0 / 427.0) 451962	(7.83, N/A) (N/A, 0.04, N/A)	3637.9	N/A	0.9151 [ 1.0000 ]	91.5% { 97.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 490912	(8.39, N/A) (N/A, 0.02, N/A)	2368.7	N/A	0.9669 [ 1.0000 ]	96.7% { 97.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 578778	(8.80, N/A) (N/A, 0.01, N/A)	2409.2	N/A	1.0225 [ 1.0000 ]	102.2% { 110.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 503234	(9.04, N/A) (N/A, 0.00, N/A)	2868.6	N/A	1.0170 [ 1.0000 ]	101.7% { 109.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 476906	(9.40, N/A) (N/A, 0.00, N/A)	1606.4	N/A	0.9138 [ 1.0000 ]	91.4% { 95.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2328464	(5.72, N/A) (N/A, 0.03, N/A)	4566.4	N/A	2.0720 [ 2.0000 ]	103.6% { 102.6% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1442268	(7.40, N/A) (N/A, 0.04, N/A)	2492.3	N/A	1.9762 [ 2.0000 ]	98.8% { 101.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2387405	(8.60, N/A) (N/A, 0.01, N/A)	2982.9	N/A	1.8467 [ 2.0000 ]	92.3% { 102.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 264301	(5.44, N/A) (N/A, 0.03, N/A)	1554.1	N/A	3.7077 [ 4.0000 ]	92.7% { 97.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 332609	(6.95, N/A) (N/A, 0.02, N/A)	1586.3	N/A	3.5539 [ 4.0000 ]	88.8% { 90.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 372054	(8.12, N/A) (N/A, 0.03, N/A)	1357.8	N/A	3.6695 [ 4.0000 ]	91.7% { 97.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 4286473	(9.86, N/A) (N/A, 0.01, N/A)	3982.4	N/A	1.9384 [ 2.0000 ]	96.9% { 102.0% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 992019	(10.46, N/A) (N/A, 0.02, N/A)	3169.9	N/A	1.7534 [ 2.0000 ]	87.7% { 91.0% }			
D5_NEiFOsa_EIS	(531.0 / 169.0) 957642	(10.62, N/A) (N/A, 0.02, N/A)	3344.9	N/A	1.8596 [ 2.0000 ]	93.0% { 92.4% }			



Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL4  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (4)  
 Acquired: 2023/03/07 - 16:04

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 788848	( 8.48 , N/A ) ( N/A , 0.02 , N/A )	1642.6	N/A	3.5683 [ 4.0000 ]	89.2% { 98.5% }			
D5_EtFOSAA_EIS	( 589.0 / 419.0 ) 922571	( 8.69 , N/A ) ( N/A , 0.01 , N/A )	74159.3	N/A	3.7237 [ 4.0000 ]	93.1% { 107.5% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 3340167	( 10.39 , N/A ) ( N/A , 0.02 , N/A )	1498.5	N/A	18.9722 [ 20.0000 ]	94.9% { 99.1% }			
D9_NEtFOSE_EIS	( 639.0 / 58.9 ) 4109527	( 10.56 , N/A ) ( N/A , 0.02 , N/A )	2343.5	N/A	19.7767 [ 20.0000 ]	98.9% { 98.9% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 2026565	( 6.03 , N/A ) ( N/A , 0.03 , N/A )	5527.8	N/A	8.4660 [ 8.0000 ]	105.8% { 100.4% }			



Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL5  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (5)  
 Acquired: 2023/03/07 - 16:17

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 4314770	(3.68, 1.00) (0.00, N/A, 0.0)	303.4	N/A 0.0 0.0	19.7494 [ 20.0000 ]	98.7%			
PFPeA	(263.0 / 219.0) 3292599 (263.0 / 69.0) 37284	(4.74, 1.00) (0.00, N/A, 0.1)	5807.1 752.6	0.0113 100.0 100.0	9.9316 [ 10.0000 ]	99.3%			
PFHxA	(313.0 / 269.0) 1819361 (313.0 / 119.0) 191644	(5.69, 1.00) (0.00, N/A, 0.0)	7617.2 10259.4	0.1053 100.0 100.0	4.6839 [ 5.0000 ]	93.7%			
PFHpA	(363.0 / 319.0) 1631903 (363.0 / 169.0) 531953	(6.51, 1.00) (0.00, N/A, 0.0)	7658.1 16704.3	0.3260 100.0 100.0	4.5759 [ 5.0000 ]	91.5%			
PFOA	(413.0 / 369.0) 2141962 (413.0 / 169.0) 746553	(7.19, 1.00) (0.00, N/A, 0.0)	6728.6 16398481.8	0.3485 100.0 100.0	4.6678 [ 5.0000 ]	93.4%			
PFNA	(463.0 / 419.0) 1841847 (463.0 / 169.0) 431173	(7.80, 1.00) (0.01, N/A, -0.1)	10486.5 1047.6	0.2341 100.0 100.0	4.5888 [ 5.0000 ]	91.8%			
PFDA	(513.0 / 469.0) 2188019 (513.0 / 169.0) 232738	(8.37, 1.00) (0.00, N/A, 0.0)	2376.8 4348.3	0.1064 100.0 100.0	4.6111 [ 5.0000 ]	92.2%			
PFUnA	(563.0 / 519.0) 2071082 (563.0 / 169.0) 248377	(8.79, 1.00) (0.00, N/A, 0.0)	2261.0 1032.9	0.1199 100.0 100.0	4.9366 [ 5.0000 ]	98.7%			
PFDoA	(613.0 / 569.0) 1910401 (613.0 / 169.0) 310938	(9.04, 1.00) (0.00, N/A, 0.2)	2426.1 19684.3	0.1628 100.0 100.0	4.9616 [ 5.0000 ]	99.2%			
PFTrDA	(663.0 / 619.0) 1773794 (663.0 / 169.0) 432832	(9.24, 1.02) (N/A, 0.00, -0.1)	2432.2 1362.9	0.2440 100.0 100.0	4.8038 [ 5.0000 ]	96.1%			
PFTeDA	(713.0 / 669.0) 2119862 (713.0 / 169.0) 405166	(9.40, 1.00) (0.00, N/A, 0.2)	3506.1 2650.0	0.1911 100.0 100.0	4.9835 [ 5.0000 ]	99.7%			



Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL5  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (5)  
 Acquired: 2023/03/07 - 16:17

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 3184247 (299.0 / 99.0) 1868082	(5.69, 1.00) (0.00, N/A, 0.0)	3732.0 2826.3	0.5867 100.0 100.0	4.3464 [ 4.4237 ]	98.3%			
PFPeS	(349.0 / 80.0) 5511119 (349.0 / 99.0) 1882930	(6.62, 0.90) (N/A, 0.00, 0.0)	14463.2 10577.6	0.3417 100.0 100.0	4.7071 [ 4.6919 ]	100.3%			
PFHxS	(399.0 / 80.0) 4400564 (399.0 / 99.0) 1508515	(7.36, 1.00) (0.00, N/A, 0.0)	37748.7 2987.5	0.3428 100.0 100.0	4.1317 [ 4.5549 ]	90.7%			
PFHpS	(449.0 / 80.0) 4723479 (449.0 / 99.0) 1342163	(8.01, 0.93) (N/A, 0.00, -0.1)	237984.5 13682802.3	0.2841 100.0 100.0	4.4509 [ 4.7570 ]	93.6%			
PFOS	(499.0 / 80.0) 5818311 (499.0 / 99.0) 1259333	(8.59, 1.00) (0.00, N/A, 0.1)	2453.4 1137.4	0.2164 100.0 100.0	4.4111 [ 4.6375 ]	95.1%			
PFNS	(549.0 / 80.0) 6021740 (549.0 / 99.0) 1380746	(8.93, 1.04) (N/A, 0.00, 0.1)	14814.0 4250.0	0.2293 100.0 100.0	4.8142 [ 4.7994 ]	100.3%			
PFDS	(599.0 / 80.0) 7029909 (599.0 / 99.0) 1591235	(9.15, 1.06) (N/A, 0.00, 0.0)	5650.2 4928.8	0.2264 100.0 100.0	4.8648 [ 4.8155 ]	101.0%			
PFDoS	(699.0 / 80.0) 5889342 (699.0 / 99.0) 1284050	(9.48, 1.10) (N/A, 0.00, 0.0)	3296.4 3117.0	0.2180 100.0 100.0	5.0985 [ 4.8478 ]	105.2%			
4:2FTS	(327.0 / 307.0) 3660829 (327.0 / 81.0) 2266912	(5.41, 1.00) (0.00, N/A, 0.0)	6003.4 3400.5	0.6192 100.0 100.0	18.5752 [ 18.6906 ]	99.4%			
6:2FTS	(427.0 / 407.0) 2380284 (427.0 / 81.0) 1644539	(6.92, 1.00) (0.00, N/A, 0.0)	2766.3 4141.8	0.6909 100.0 100.0	17.9343 [ 18.9808 ]	94.5%			
8:2FTS	(527.0 / 507.0) 2381201 (527.0 / 81.0) 1608176	(8.10, 1.00) (0.00, N/A, 0.0)	2282.2 2104.3	0.6754 100.0 100.0	18.5604 [ 19.1658 ]	96.8%			

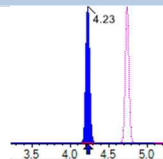
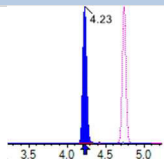
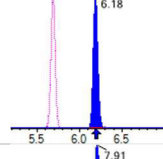
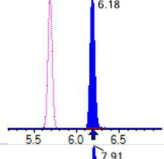
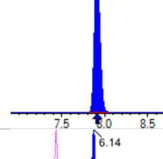
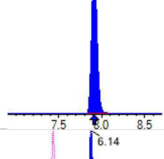
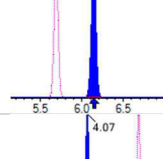
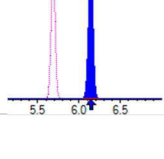
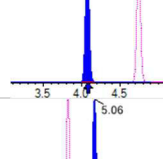
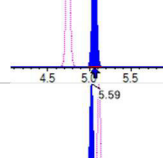
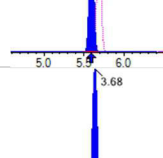
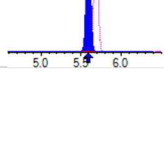
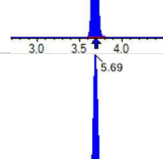
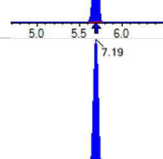
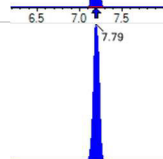
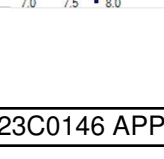


Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL5  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (5)  
 Acquired: 2023/03/07 - 16:17

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	( 498.0 / 78.0 ) 8764904 ( 498.0 / 478.0 ) 194763	( 9.86 , 1.00 ) ( 0.00 , N/A , 0.1 )	3924.6 1446.7	0.0222 100.0 100.0	5.0267 [ 5.0000 ]	100.5%			
NMeFOSA	( 512.0 / 219.0 ) 8429901 ( 512.0 / 169.0 ) 7048831	( 10.44 , 1.00 ) ( 0.00 , N/A , 1.2 )	6121.6 6632.6	0.8362 100.0 100.0	18.8117 [ 20.0000 ]	94.1%			
NEIFOSA	( 526.0 / 219.0 ) 9106900 ( 526.0 / 169.0 ) 11624129	( 10.59 , 1.00 ) ( 0.00 , N/A , 0.9 )	10421.3 10232.9	1.2764 100.0 100.0	18.4676 [ 20.0000 ]	92.3%			
NMeFOSAA	( 570.0 / 419.0 ) 967880 ( 570.0 / 483.0 ) 454645	( 8.47 , 1.00 ) ( 0.00 , N/A , 0.0 )	2406.0 497.0	0.4697 100.0 100.0	4.6931 [ 5.0000 ]	93.9%			
NEIFOSAA	( 584.0 / 419.0 ) 827259 ( 584.0 / 526.0 ) 528100	( 8.68 , 1.00 ) ( 0.00 , N/A , 0.0 )	2557.1 1843.5	0.6384 100.0 100.0	4.6023 [ 5.0000 ]	92.0%			
NMeFOSE	( 616.0 / 59.0 ) 3065855	( 10.38 , 1.00 ) ( 0.01 , N/A , 0.0 )	2493.0	N/A 0.0 0.0	18.3688 [ 20.0000 ]	91.8%			
NEIFOSE	( 630.0 / 59.0 ) 3713982	( 10.55 , 1.00 ) ( 0.01 , N/A , 0.0 )	1743.1	N/A 0.0 0.0	18.4930 [ 20.0000 ]	92.5%			
HFPO-DA	( 285.0 / 169.0 ) 1950795 ( 285.0 / 185.0 ) 5250896	( 6.00 , 1.00 ) ( 0.00 , N/A , -0.1 )	6057.9 4047.8	2.6917 100.0 100.0	9.7242 [ 10.0000 ]	97.2%			
ADONA	( 377.0 / 85.0 ) 7516722 ( 377.0 / 251.0 ) 726011	( 6.79 , 1.13 ) ( N/A , 0.00 , -0.1 )	4655.2 1887.4	0.0966 100.0 100.0	9.5307 [ 9.4270 ]	101.1%			
9CI-PI3ONS	( 531.0 / 351.0 ) 18998957 ( 533.0 / 353.0 ) 6061965	( 8.86 , 1.48 ) ( N/A , 0.00 , 0.0 )	4237.4 3111.4	0.3191 100.0 100.0	8.9368 [ 9.3325 ]	95.8%			
11CI-PF3OUDS	( 631.0 / 451.0 ) 11517834 ( 633.0 / 453.0 ) 3835435	( 9.29 , 1.55 ) ( N/A , 0.00 , 0.0 )	5594.5 3741.0	0.3330 100.0 100.0	9.0695 [ 9.4321 ]	96.2%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 177222 (241.0 / 117.0) 361209	(4.23, 0.89) (N/A, 0.00, 0.0)	2445.5 1356.9	2.0382 100.0 100.0	17.7566 [ 20.0000 ]	88.8%			
5:3FTCA	(341.0 / 236.7) 1237103 (341.0 / 217.0) 2037578	(6.18, 1.09) (N/A, 0.00, 0.0)	3647.4 2401.9	1.6471 100.0 100.0	18.6569 [ 20.0000 ]	93.3%			
7:3FTCA	(441.0 / 317.0) 2102004 (441.0 / 337.0) 1801002	(7.91, 1.39) (N/A, 0.00, -0.1)	1816.4 1778.4	0.8568 100.0 100.0	18.8880 [ 20.0000 ]	94.4%			
PFEESA	(315.0 / 135.0) 4461630 (315.0 / 83.0) 1156024	(6.14, 1.08) (N/A, 0.00, -0.1)	3865.9 2283.8	0.2591 100.0 100.0	9.2094 [ 8.9246 ]	103.2%			
PFMPA	(229.0 / 85.0) 812908	(4.07, 0.86) (N/A, 0.00, 0.0)	4981.9	N/A 0.0 0.0	9.5254 [ 10.0000 ]	95.3%			
PFMBA	(279.0 / 85.0) 2687457	(5.06, 1.07) (N/A, 0.00, 0.0)	6165.9	N/A 0.0 0.0	9.8597 [ 10.0000 ]	98.6%			
NFDHA	(295.0 / 201.0) 2076210 (295.0 / 85.0) 2085359	(5.59, 0.98) (N/A, 0.00, 0.1)	4862.4 4695.6	1.0044 100.0 100.0	9.4277 [ 10.0000 ]	94.3%			
13C3_PFBA_IIS	(216.0 / 172.0) 202451	(3.68, N/A) (N/A, 0.00, N/A)	1732.9	N/A	0.9451 [ 1.0000 ]	94.5% { 100.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 285310	(5.69, N/A) (N/A, 0.00, N/A)	423221.1	N/A	0.9084 [ 1.0000 ]	90.8% { 100.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 419320	(7.19, N/A) (N/A, 0.00, N/A)	567286.9	N/A	0.9080 [ 1.0000 ]	90.8% { 100.0% }			
13C5_PFNxA_IIS	(468.0 / 423.0) 385992	(7.79, N/A) (N/A, 0.00, N/A)	5201.5	N/A	0.9249 [ 1.0000 ]	92.5% { 100.0% }			



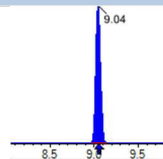
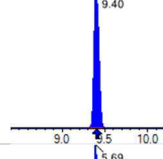
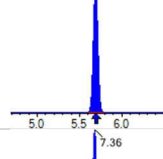
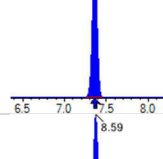
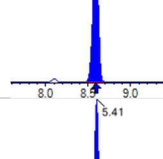
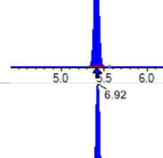
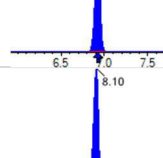
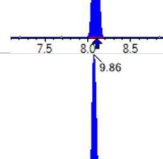
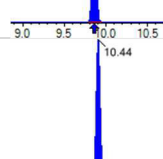
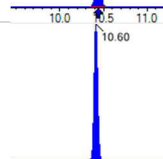
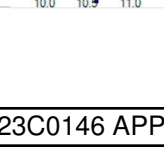


Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

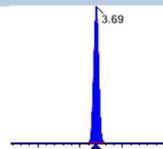
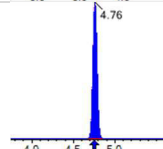
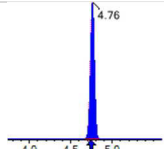
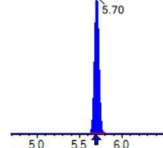
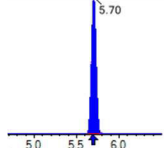
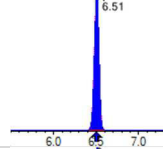
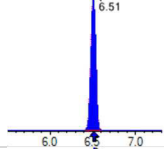
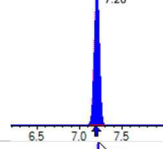
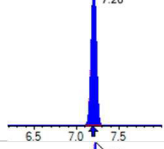
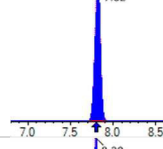
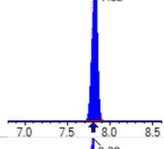
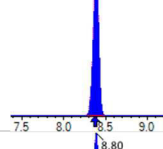
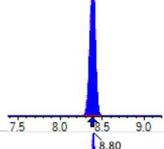
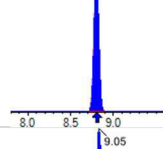
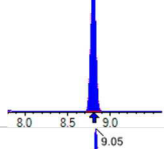
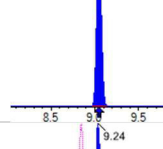
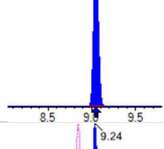
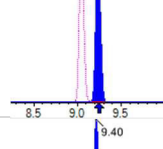
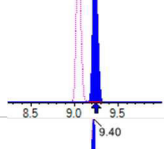
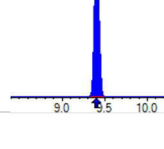
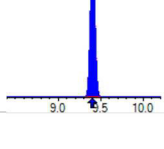
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 Acquisition Method: 1633 2023-03-07.dam

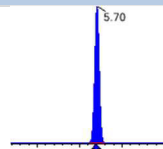
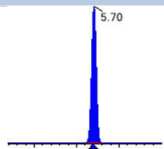
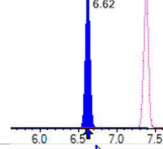
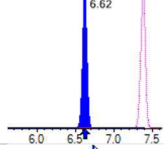
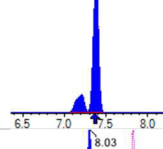
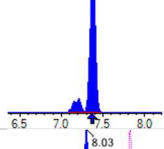
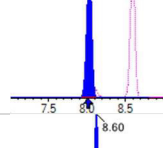
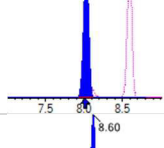
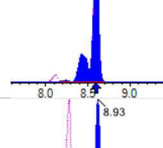
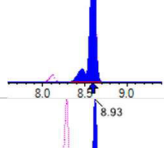
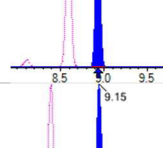
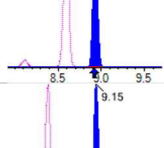
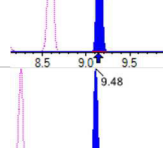
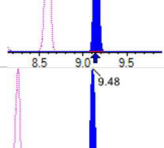
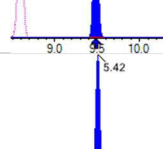
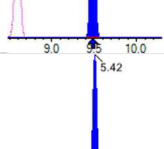
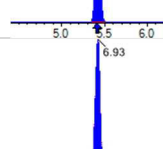
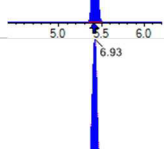
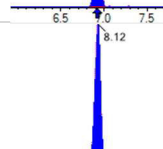
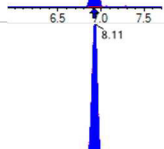
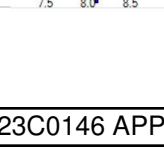
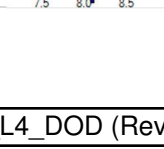
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 Path: S2023-03-07A (5)  
 Acquired: 2023/03/07 - 16:17

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 384541	(8.38, N/A) (N/A, 0.00, N/A)	4558685.7	N/A	0.9575 [ 1.0000 ]	95.7% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 598431	(7.36, N/A) (N/A, 0.00, N/A)	4079.2	N/A	0.8814 [ 1.0000 ]	88.1% { 100.0% }			
13C4_PFOS_IIS	(503.0 / 79.9) 831690	(8.59, N/A) (N/A, 0.00, N/A)	1562.3	N/A	0.9693 [ 1.0000 ]	96.9% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2116502	(3.68, N/A) (N/A, 0.00, N/A)	5745.2	N/A	8.7847 [ 8.0000 ]	109.8% { 100.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1507625	(4.74, N/A) (N/A, 0.00, N/A)	3806.4	N/A	4.5742 [ 4.0000 ]	114.4% { 100.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 873873	(5.69, N/A) (N/A, 0.00, N/A)	4000.5	N/A	2.1975 [ 2.0000 ]	109.9% { 100.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 845360	(6.51, N/A) (N/A, 0.00, N/A)	2681.8	N/A	2.2316 [ 2.0000 ]	111.6% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 1011129	(7.19, N/A) (N/A, 0.00, N/A)	3836.8	N/A	2.2196 [ 2.0000 ]	111.0% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 463835	(7.79, N/A) (N/A, 0.00, N/A)	468207.4	N/A	1.1309 [ 1.0000 ]	113.1% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 503015	(8.37, N/A) (N/A, 0.00, N/A)	333.3	N/A	1.0869 [ 1.0000 ]	108.7% { 100.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 525279	(8.80, N/A) (N/A, 0.00, N/A)	1875.5	N/A	1.0180 [ 1.0000 ]	101.8% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 457695	(9.04, N/A) (N/A, 0.00, N/A)	2608.7	N/A	1.0147 [ 1.0000 ]	101.5% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 498225	(9.40, N/A) (N/A, 0.00, N/A)	6470.5	N/A	1.0473 [ 1.0000 ]	104.7% { 100.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2269851	(5.69, N/A) (N/A, 0.00, N/A)	3665.4	N/A	2.3942 [ 2.0000 ]	119.7% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1419902	(7.36, N/A) (N/A, 0.00, N/A)	3443.3	N/A	2.3062 [ 2.0000 ]	115.3% { 100.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2338329	(8.59, N/A) (N/A, 0.00, N/A)	1608.7	N/A	2.0970 [ 2.0000 ]	104.8% { 100.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 270276	(5.41, N/A) (N/A, 0.00, N/A)	1239.4	N/A	4.4943 [ 4.0000 ]	112.4% { 100.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 369581	(6.92, N/A) (N/A, 0.00, N/A)	1785.9	N/A	4.6809 [ 4.0000 ]	117.0% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 383366	(8.10, N/A) (N/A, 0.00, N/A)	1245.4	N/A	4.4819 [ 4.0000 ]	112.0% { 100.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 4201922	(9.86, N/A) (N/A, 0.00, N/A)	4072.4	N/A	2.2030 [ 2.0000 ]	110.2% { 100.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 1089973	(10.44, N/A) (N/A, 0.00, N/A)	2751.6	N/A	2.2336 [ 2.0000 ]	111.7% { 100.0% }			
D5_NeIFOSA_EIS	(531.0 / 169.0) 1036040	(10.60, N/A) (N/A, 0.00, N/A)	4635.3	N/A	2.3324 [ 2.0000 ]	116.6% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 800976	( 8.47, N/A ) ( N/A, 0.00, N/A )	1718.7	N/A	4.2006 [ 4.0000 ]	105.0% { 100.0% }			
D5_EtFOSAA_EIS	( 589.0 / 419.0 ) 858151	( 8.67, N/A ) ( N/A, 0.00, N/A )	18086.3	N/A	4.0157 [ 4.0000 ]	100.4% { 100.0% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 3370502	( 10.37, N/A ) ( N/A, 0.00, N/A )	1674.2	N/A	22.1955 [ 20.0000 ]	111.0% { 100.0% }			
D9_NEtFOSE_EIS	( 639.0 / 58.9 ) 4155590	( 10.54, N/A ) ( N/A, 0.00, N/A )	1840.0	N/A	23.1855 [ 20.0000 ]	115.9% { 100.0% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 2018818	( 6.00, N/A ) ( N/A, 0.00, N/A )	3856.1	N/A	9.1927 [ 8.0000 ]	114.9% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 7996170	(3.69, 1.00) (0.00, N/A, 0.0)	332.4	N/A 0.0 0.0	45.4712 [ 40.0000 ]	113.7%			
PFPeA	(263.0 / 219.0) 6303654 (263.0 / 69.0) 68860	(4.76, 1.00) (0.00, N/A, -0.1)	11103.8 1621.0	0.0109 96.5 96.5	22.2289 [ 20.0000 ]	111.1%			
PFHxA	(313.0 / 269.0) 3695051 (313.0 / 119.0) 381396	(5.70, 1.00) (0.00, N/A, 0.0)	10462.7 7988.4	0.1032 98.0 98.0	11.2694 [ 10.0000 ]	112.7%			
PFHpA	(363.0 / 319.0) 3306989 (363.0 / 169.0) 1033501	(6.51, 1.00) (0.00, N/A, -0.1)	12732.1 13003.2	0.3125 95.9 95.9	10.7066 [ 10.0000 ]	107.1%			
PFOA	(413.0 / 369.0) 4269177 (413.0 / 169.0) 1448972	(7.20, 1.00) (0.00, N/A, 0.1)	6779.1 130886.0	0.3394 97.4 97.4	11.1591 [ 10.0000 ]	111.6%			
PFNA	(463.0 / 419.0) 3593727 (463.0 / 169.0) 785371	(7.82, 1.00) (0.00, N/A, -0.1)	34423.4 52396.6	0.2185 93.4 93.4	11.2601 [ 10.0000 ]	112.6%			
PFDA	(513.0 / 469.0) 4357130 (513.0 / 169.0) 455442	(8.39, 1.00) (0.00, N/A, 0.0)	3068.9 2516.3	0.1045 98.3 98.3	10.9022 [ 10.0000 ]	109.0%			
PFUnA	(563.0 / 519.0) 4076367 (563.0 / 169.0) 505324	(8.80, 1.00) (0.00, N/A, 0.0)	4201.4 2351.0	0.1240 103.4 103.4	11.3163 [ 10.0000 ]	113.2%			
PFDoA	(613.0 / 569.0) 3675190 (613.0 / 169.0) 575616	(9.05, 1.00) (0.00, N/A, 0.0)	3706.7 2084.2	0.1566 96.2 96.2	11.8616 [ 10.0000 ]	118.6%			
PFTrDA	(663.0 / 619.0) 3510237 (663.0 / 169.0) 804980	(9.24, 1.02) (N/A, 0.00, 0.0)	3627.1 11540.5	0.2293 94.0 94.0	11.8136 [ 10.0000 ]	118.1%			
PFTeDA	(713.0 / 669.0) 3960952 (713.0 / 169.0) 717233	(9.40, 1.00) (0.00, N/A, -0.1)	3406.2 1843.9	0.1811 94.7 94.7	10.1833 [ 10.0000 ]	101.8%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 6193634 (299.0 / 99.0) 3827218	(5.70, 1.00) (0.00, N/A, 0.0)	5759.3 4313.6	0.6179 105.3 105.3	10.1048 [ 8.8473 ]	114.2%			
PFPeS	(349.0 / 80.0) 10805698 (349.0 / 99.0) 3726447	(6.62, 0.90) (N/A, 0.00, 0.0)	439832.7 6763.0	0.3449 100.9 100.9	10.6880 [ 9.3838 ]	113.9%			
PFHxS	(399.0 / 80.0) 9481485 (399.0 / 99.0) 3197112	(7.38, 1.00) (0.00, N/A, 0.1)	53584.8 1424234.9	0.3372 98.4 98.4	10.3091 [ 9.1098 ]	113.2%			
PFHpS	(449.0 / 80.0) 9776182 (449.0 / 99.0) 2703954	(8.03, 0.93) (N/A, 0.02, 0.1)	48634.1 7160.6	0.2766 97.3 97.3	10.6328 [ 9.5141 ]	111.8%			
PFOS	(499.0 / 80.0) 11331591 (499.0 / 99.0) 2492053	(8.60, 1.00) (0.00, N/A, 0.1)	3266.5 1560.0	0.2199 101.6 101.6	9.9160 [ 9.2749 ]	106.9%			
PFNS	(549.0 / 80.0) 12109353 (549.0 / 99.0) 3052635	(8.93, 1.04) (N/A, 0.01, 0.1)	24466.1 2253637.3	0.2521 109.9 109.9	11.1740 [ 9.5989 ]	116.4%			
PFDS	(599.0 / 80.0) 14052434 (599.0 / 99.0) 3241900	(9.15, 1.06) (N/A, 0.00, 0.0)	6376.4 5185.8	0.2307 101.9 101.9	11.2242 [ 9.6311 ]	116.5%			
PFDoS	(699.0 / 80.0) 11082155 (699.0 / 99.0) 2497400	(9.48, 1.10) (N/A, 0.00, 0.0)	4512.1 3952.2	0.2254 103.4 103.4	11.0737 [ 9.6956 ]	114.2%			
4:2FTS	(327.0 / 307.0) 7213879 (327.0 / 81.0) 4343526	(5.42, 1.00) (0.00, N/A, 0.0)	6294.0 4390.6	0.6021 97.2 97.2	40.0055 [ 37.3811 ]	107.0%			
6:2FTS	(427.0 / 407.0) 4591018 (427.0 / 81.0) 3367582	(6.93, 1.00) (0.00, N/A, 0.1)	3835.9 3204.5	0.7335 106.2 106.2	42.7228 [ 37.9617 ]	112.5%			
8:2FTS	(527.0 / 507.0) 4747971 (527.0 / 81.0) 3315402	(8.12, 1.00) (0.00, N/A, 0.1)	3148.0 3653.6	0.6983 103.4 103.4	41.4503 [ 38.3315 ]	108.1%			

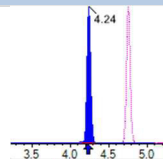
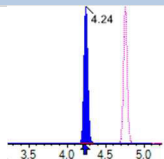
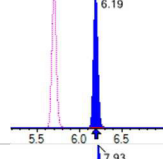
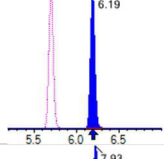
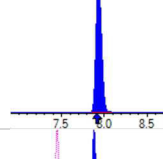
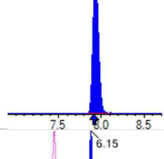
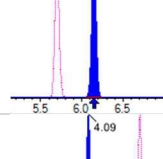
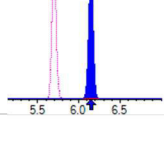
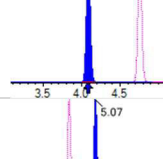
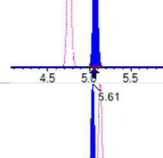
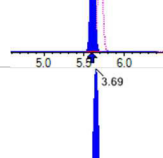
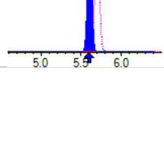
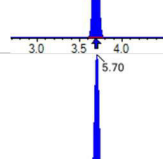
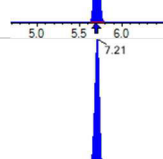
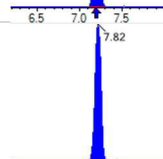
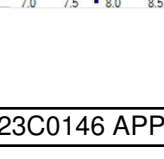


Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL6  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (6)  
 Acquired: 2023/03/07 - 16:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 16373502 (498.0 / 478.0) 378339	(9.87, 1.00) (0.00, N/A, 0.1)	4763.2 1885.7	0.0231 104.0 104.0	11.4882 [ 10.0000 ]	114.9%			
NMeFOSA	(512.0 / 219.0) 16497720 (512.0 / 169.0) 13927760	(10.46, 1.00) (0.00, N/A, 1.0)	5949.0 8503.3	0.8442 101.0 101.0	45.1248 [ 40.0000 ]	112.8%			
NEIFOSA	(526.0 / 219.0) 17698464 (526.0 / 169.0) 21879187	(10.62, 1.00) (0.00, N/A, 0.8)	14299.6 17950.9	1.2362 96.9 96.9	44.9492 [ 40.0000 ]	112.4%			
NMeFOSAA	(570.0 / 419.0) 1941686 (570.0 / 483.0) 959131	(8.48, 1.00) (0.00, N/A, 0.0)	2780.8 713.7	0.4940 105.2 105.2	10.6067 [ 10.0000 ]	106.1%			
NEIFOSAA	(584.0 / 419.0) 1760073 (584.0 / 526.0) 983886	(8.69, 1.00) (0.01, N/A, 0.1)	2822.6 54782.8	0.5590 87.6 87.6	11.5613 [ 10.0000 ]	115.6%			
NMeFOSE	(616.0 / 59.0) 6190679	(10.40, 1.00) (0.01, N/A, 0.0)	3385.0	N/A 0.0 0.0	44.9694 [ 40.0000 ]	112.4%			
NEtFOSE	(630.0 / 59.0) 7180038	(10.57, 1.00) (0.01, N/A, 0.0)	1630.5	N/A 0.0 0.0	46.0220 [ 40.0000 ]	115.1%			
HFPO-DA	(285.0 / 169.0) 3666413 (285.0 / 185.0) 10607744	(6.01, 1.00) (0.00, N/A, 0.0)	4490.0 6113.0	2.8932 107.5 107.5	21.0240 [ 20.0000 ]	105.1%			
ADONA	(377.0 / 85.0) 14256379 (377.0 / 251.0) 1456394	(6.79, 1.13) (N/A, 0.00, -0.2)	4595.9 2831.4	0.1022 105.8 105.8	20.7941 [ 18.8540 ]	110.3%			
9CI-Pf3ONS	(531.0 / 351.0) 34792374 (533.0 / 353.0) 11380772	(8.87, 1.48) (N/A, 0.00, 0.1)	4232.4 3709.9	0.3271 102.5 102.5	18.8266 [ 18.6651 ]	100.9%			
11CI-PF3OUDS	(631.0 / 451.0) 21366234 (633.0 / 453.0) 7518134	(9.29, 1.55) (N/A, 0.00, 0.0)	5480.3 5588.8	0.3519 105.7 105.7	20.3622 [ 18.8642 ]	107.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 356777 (241.0 / 117.0) 714316	(4.24, 0.89) (N/A, 0.01, 0.0)	2050.1 1801.3	2.0021 98.2 98.2	41.7912 [ 40.0000 ]	104.5%			
5:3FTCA	(341.0 / 236.7) 2509841 (341.0 / 217.0) 4213578	(6.19, 1.09) (N/A, 0.01, 0.0)	2909.5 3237.4	1.6788 101.9 101.9	44.8405 [ 40.0000 ]	112.1%			
7:3FTCA	(441.0 / 317.0) 4486774 (441.0 / 337.0) 3739024	(7.93, 1.39) (N/A, 0.02, 0.0)	2178.6 2236.3	0.8333 97.3 97.3	47.7614 [ 40.0000 ]	119.4%			
PFEEA	(315.0 / 135.0) 8587443 (315.0 / 83.0) 2334196	(6.15, 1.08) (N/A, 0.01, 0.0)	3933.6 4882.5	0.2718 104.9 104.9	20.9988 [ 17.8492 ]	117.6%			
PFMPA	(229.0 / 85.0) 1557216	(4.09, 0.86) (N/A, 0.01, 0.0)	5840.2	N/A 0.0 0.0	21.3323 [ 20.0000 ]	106.7%			
PFMBA	(279.0 / 85.0) 5022999	(5.07, 1.07) (N/A, 0.02, 0.0)	4873.8	N/A 0.0 0.0	21.5442 [ 20.0000 ]	107.7%			
NFDHA	(295.0 / 201.0) 4323240 (295.0 / 85.0) 4324686	(5.61, 0.98) (N/A, 0.01, 0.1)	6065.2 4345.5	1.0003 99.6 99.6	23.2560 [ 20.0000 ]	116.3%			
13C3_PFBA_IIS	(216.0 / 172.0) 193545	(3.69, N/A) (N/A, 0.01, N/A)	1721.4	N/A	0.9036 [ 1.0000 ]	90.4% { 95.6% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 308295	(5.70, N/A) (N/A, 0.01, N/A)	1400.5	N/A	0.9816 [ 1.0000 ]	98.2% { 108.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 445034	(7.21, N/A) (N/A, 0.01, N/A)	1881.8	N/A	0.9637 [ 1.0000 ]	96.4% { 106.1% }			
13C5_PFNxA_IIS	(468.0 / 423.0) 405209	(7.82, N/A) (N/A, 0.02, N/A)	2019243.5	N/A	0.9710 [ 1.0000 ]	97.1% { 105.0% }			



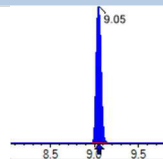
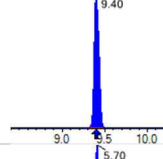
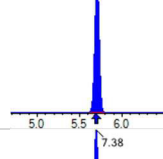
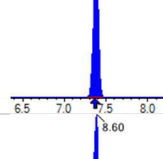
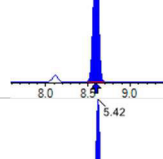
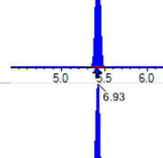
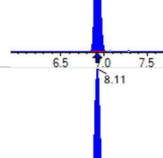
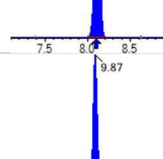
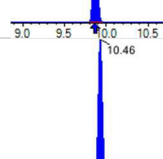
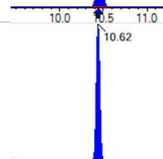
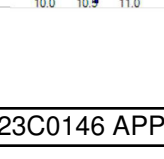
Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL6  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (6)  
 Acquired: 2023/03/07 - 16:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 385118	(8.38, N/A) (N/A, 0.01, N/A)	36473.8	N/A	0.9589 [ 1.0000 ]	95.9% { 100.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 635241	(7.38, N/A) (N/A, 0.02, N/A)	2302.3	N/A	0.9357 [ 1.0000 ]	93.6% { 106.2% }			
13C4_PFOS_IIS	(503.0 / 79.9) 852701	(8.60, N/A) (N/A, 0.01, N/A)	2500.5	N/A	0.9938 [ 1.0000 ]	99.4% { 102.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1703574	(3.69, N/A) (N/A, 0.01, N/A)	5949.8	N/A	7.3962 [ 8.0000 ]	92.5% { 80.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1289578	(4.76, N/A) (N/A, 0.02, N/A)	4159.4	N/A	3.6210 [ 4.0000 ]	90.5% { 85.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 737662	(5.70, N/A) (N/A, 0.01, N/A)	2296.6	N/A	1.7166 [ 2.0000 ]	85.8% { 84.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 732149	(6.51, N/A) (N/A, 0.00, N/A)	2603.5	N/A	1.7886 [ 2.0000 ]	89.4% { 86.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 842985	(7.20, N/A) (N/A, 0.01, N/A)	1725.2	N/A	1.7435 [ 2.0000 ]	87.2% { 83.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 368815	(7.82, N/A) (N/A, 0.03, N/A)	32715.7	N/A	0.8566 [ 1.0000 ]	85.7% { 79.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 423663	(8.38, N/A) (N/A, 0.01, N/A)	5125.2	N/A	0.9140 [ 1.0000 ]	91.4% { 84.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 451010	(8.80, N/A) (N/A, 0.00, N/A)	2135.9	N/A	0.8727 [ 1.0000 ]	87.3% { 85.9% }			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 368310	(9.05, N/A) (N/A, 0.00, N/A)	342.7	N/A	0.8153 [ 1.0000 ]	81.5% { 80.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 455581	(9.40, N/A) (N/A, 0.00, N/A)	1670.7	N/A	0.9562 [ 1.0000 ]	95.6% { 91.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1899060	(5.70, N/A) (N/A, 0.01, N/A)	3735.7	N/A	1.8870 [ 2.0000 ]	94.4% { 83.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1226116	(7.38, N/A) (N/A, 0.02, N/A)	1320.0	N/A	1.8760 [ 2.0000 ]	93.8% { 86.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2025888	(8.60, N/A) (N/A, 0.01, N/A)	1845.0	N/A	1.7720 [ 2.0000 ]	88.6% { 86.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 247292	(5.42, N/A) (N/A, 0.01, N/A)	2016.4	N/A	3.8739 [ 4.0000 ]	96.8% { 91.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 299237	(6.93, N/A) (N/A, 0.00, N/A)	2193.5	N/A	3.5703 [ 4.0000 ]	89.3% { 81.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 342283	(8.11, N/A) (N/A, 0.02, N/A)	1736.1	N/A	3.7697 [ 4.0000 ]	94.2% { 89.3% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3434548	(9.87, N/A) (N/A, 0.01, N/A)	3577.1	N/A	1.7563 [ 2.0000 ]	87.8% { 81.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 889264	(10.46, N/A) (N/A, 0.03, N/A)	2690.9	N/A	1.7774 [ 2.0000 ]	88.9% { 81.6% }			
D5_NEiFOSA_EIS	(531.0 / 169.0) 827237	(10.62, N/A) (N/A, 0.03, N/A)	3918.5	N/A	1.8165 [ 2.0000 ]	90.8% { 79.8% }			

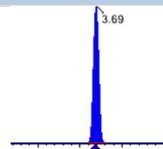
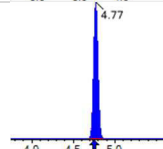
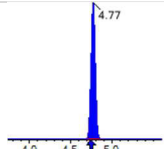
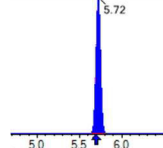
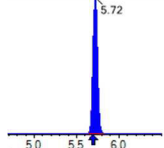
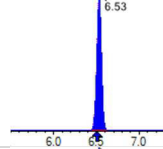
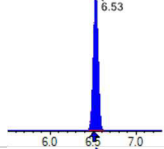
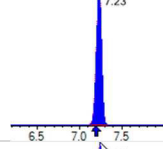
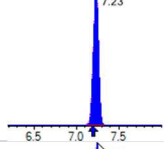
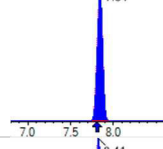
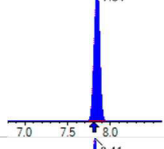
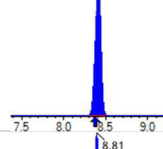
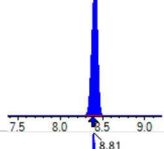
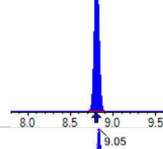
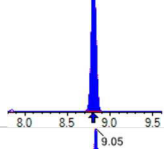
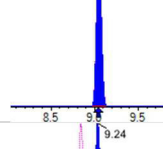
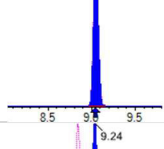
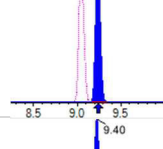
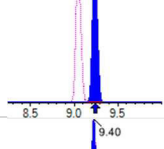
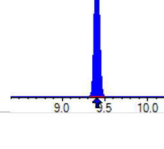
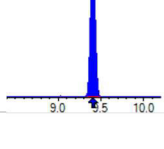


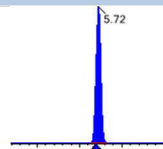
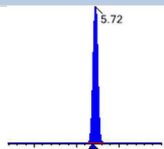
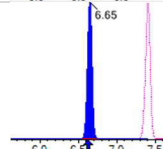
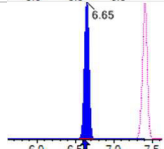
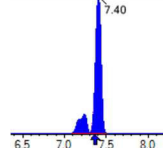
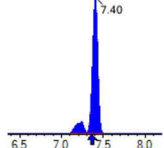
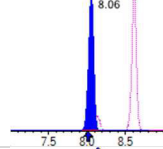
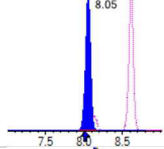
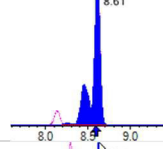
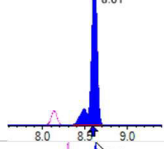
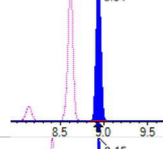
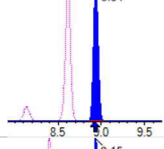
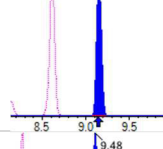
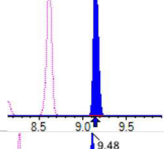
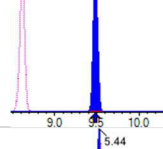
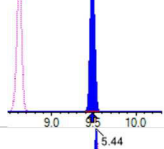
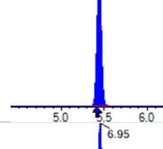
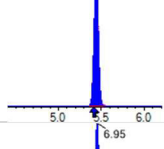
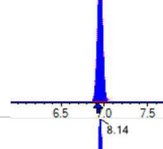
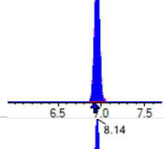
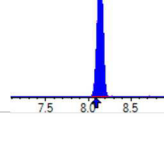
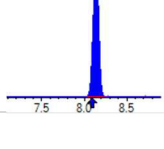
Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL6  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (6)  
 Acquired: 2023/03/07 - 16:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 710980	( 8.48 , N/A ) ( N/A , 0.01 , N/A )	2012.3	N/A	3.6367 [ 4.0000 ]	90.9% { 88.8% }			
D5_EtFOSAA_EIS	( 589.0 / 419.0 ) 726802	( 8.68 , N/A ) ( N/A , 0.01 , N/A )	65178.8	N/A	3.3172 [ 4.0000 ]	82.9% { 84.7% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 2779993	( 10.39 , N/A ) ( N/A , 0.02 , N/A )	1471.2	N/A	17.8558 [ 20.0000 ]	89.3% { 82.5% }			
D9_NEtFOSE_EIS	( 639.0 / 58.9 ) 3228200	( 10.56 , N/A ) ( N/A , 0.03 , N/A )	1895.0	N/A	17.5674 [ 20.0000 ]	87.8% { 77.7% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1754943	( 6.01 , N/A ) ( N/A , 0.01 , N/A )	4435.4	N/A	7.3954 [ 8.0000 ]	92.4% { 86.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 14758618	(3.69, 1.00) (0.00, N/A, 0.0)	269.9	N/A 0.0 0.0	79.8137 [ 80.0000 ]	99.8%			
PFPeA	(263.0 / 219.0) 11859000 (263.0 / 69.0) 137423	(4.77, 1.00) (0.00, N/A, 0.0)	8846.2 1726.8	0.0116 102.3 102.3	39.5115 [ 40.0000 ]	98.8%			
PFHxA	(313.0 / 269.0) 7395509 (313.0 / 119.0) 726599	(5.72, 1.00) (0.00, N/A, 0.1)	8825.8 1371221.3	0.0982 93.3 93.3	19.9785 [ 20.0000 ]	99.9%			
PFHpA	(363.0 / 319.0) 6905536 (363.0 / 169.0) 2076469	(6.53, 1.00) (0.00, N/A, 0.1)	14057.8 35487569.2	0.3007 92.2 92.2	19.5568 [ 20.0000 ]	97.8%			
PFOA	(413.0 / 369.0) 8724085 (413.0 / 169.0) 2898336	(7.23, 1.00) (0.00, N/A, 0.0)	16706.9 25376.3	0.3322 95.3 95.3	19.0288 [ 20.0000 ]	95.1%			
PFNA	(463.0 / 419.0) 7415635 (463.0 / 169.0) 1716442	(7.84, 1.00) (0.00, N/A, -0.1)	10760.6 29340937.6	0.2315 98.9 98.9	19.7834 [ 20.0000 ]	98.9%			
PFDA	(513.0 / 469.0) 8867829 (513.0 / 169.0) 981533	(8.41, 1.00) (0.00, N/A, 0.1)	4066.1 2058.0	0.1107 104.1 104.1	19.0507 [ 20.0000 ]	95.3%			
PFUnA	(563.0 / 519.0) 8406788 (563.0 / 169.0) 939605	(8.81, 1.00) (0.00, N/A, 0.1)	4798.2 1717.0	0.1118 93.2 93.2	20.3492 [ 20.0000 ]	101.7%			
PFDoA	(613.0 / 569.0) 7250729 (613.0 / 169.0) 1128288	(9.05, 1.00) (0.00, N/A, 0.0)	4120.5 2607.5	0.1556 95.6 95.6	17.7930 [ 20.0000 ]	89.0%			
PFTrDA	(663.0 / 619.0) 7019990 (663.0 / 169.0) 1586633	(9.24, 1.02) (N/A, 0.00, 0.0)	3582.1 2201.2	0.2260 92.6 92.6	17.9633 [ 20.0000 ]	89.8%			
PFTeDA	(713.0 / 669.0) 7917785 (713.0 / 169.0) 1646513	(9.40, 1.00) (0.00, N/A, 0.0)	4257.9 1930.0	0.2080 108.8 108.8	18.0439 [ 20.0000 ]	90.2%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 11425757 (299.0 / 99.0) 7157682	(5.72, 1.00) (0.00, N/A, 0.0)	6254.2 4750.7	0.6265 106.8 106.8	17.7933 [ 17.6947 ]	100.6%			
PFPeS	(349.0 / 80.0) 20940326 (349.0 / 99.0) 7731304	(6.65, 0.90) (N/A, 0.03, 0.0)	51117.4 2660771.5	0.3692 108.1 108.1	18.4501 [ 18.7676 ]	98.3%			
PFHxS	(399.0 / 80.0) 18911315 (399.0 / 99.0) 6485696	(7.40, 1.00) (0.00, N/A, 0.1)	9273.8 3233.4	0.3430 100.0 100.0	18.3163 [ 18.2197 ]	100.5%			
PFHpS	(449.0 / 80.0) 18481655 (449.0 / 99.0) 5072871	(8.06, 0.94) (N/A, 0.04, 0.1)	29383.8 5479.5	0.2745 96.6 96.6	19.9604 [ 19.0281 ]	104.9%			
PFOS	(499.0 / 80.0) 20827778 (499.0 / 99.0) 4670568	(8.61, 1.00) (-0.01, N/A, 0.0)	3252.1 1953.7	0.2242 103.6 103.6	18.0982 [ 18.5499 ]	97.6%			
PFNS	(549.0 / 80.0) 22952215 (549.0 / 99.0) 5879673	(8.94, 1.04) (N/A, 0.01, 0.0)	17464.8 407375.5	0.2562 111.7 111.7	21.0311 [ 19.1977 ]	109.5%			
PFDS	(599.0 / 80.0) 26197395 (599.0 / 99.0) 6343599	(9.15, 1.06) (N/A, 0.00, 0.1)	6182.2 4791.7	0.2421 107.0 107.0	20.7783 [ 19.2621 ]	107.9%			
PFDoS	(699.0 / 80.0) 21838547 (699.0 / 99.0) 4941206	(9.48, 1.10) (N/A, 0.00, 0.0)	4648.6 2864.0	0.2263 103.8 103.8	21.6690 [ 19.3913 ]	111.7%			
4:2FTS	(327.0 / 307.0) 14072671 (327.0 / 81.0) 9123622	(5.44, 1.00) (0.00, N/A, 0.0)	6082.6 4925.0	0.6483 104.7 104.7	70.0195 [ 74.7622 ]	93.7%			
6:2FTS	(427.0 / 407.0) 9472165 (427.0 / 81.0) 6767863	(6.95, 1.00) (0.00, N/A, 0.0)	5556.8 6546.5	0.7145 103.4 103.4	74.5613 [ 75.9234 ]	98.2%			
8:2FTS	(527.0 / 507.0) 10263203 (527.0 / 81.0) 6971663	(8.14, 1.00) (0.00, N/A, 0.1)	2647.5 3186.9	0.6793 100.6 100.6	71.7898 [ 76.6631 ]	93.6%			

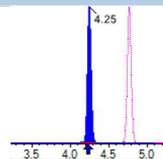
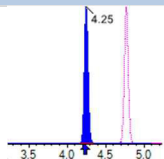
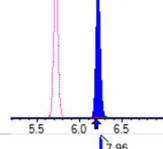
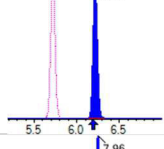
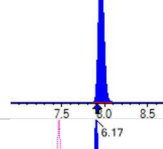
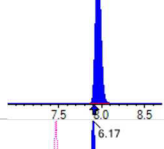
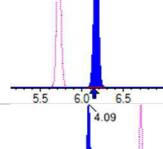
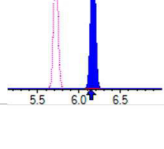
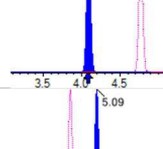
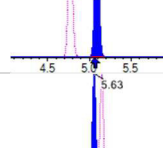
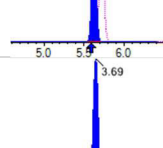
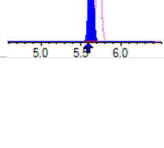
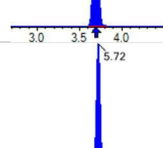
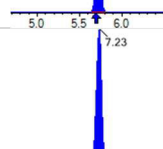
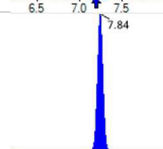
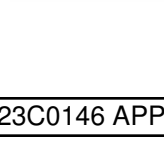


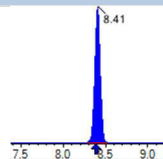
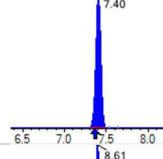
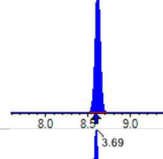
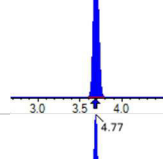
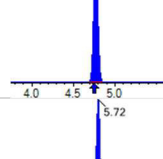
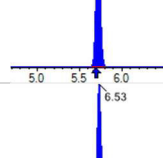
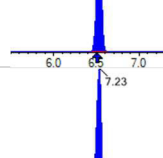
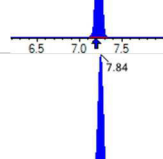
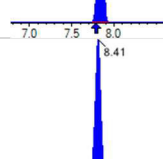
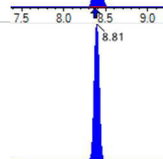
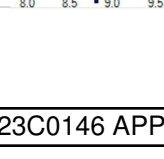
Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL7  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (7)  
 Acquired: 2023/03/07 - 16:43

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	( 498.0 / 78.0 ) 29182008 ( 498.0 / 478.0 ) 724687	( 9.87 , 1.00 ) ( 0.00 , N/A , 0.0 )	5672.2 1896.0	0.0248 111.8 111.8	18.8584 [ 20.0000 ]	94.3%			
NMeFOSEA	( 512.0 / 219.0 ) 30792142 ( 512.0 / 169.0 ) 26188878	( 10.46 , 1.00 ) ( 0.00 , N/A , 1.0 )	5977.1 6789.0	0.8505 101.7 101.7	73.0814 [ 80.0000 ]	91.4%			
NEIFOSA	( 526.0 / 219.0 ) 32684026 ( 526.0 / 169.0 ) 39009290	( 10.61 , 1.00 ) ( -0.01 , N/A , 0.5 )	16641.2 20983.2	1.1935 93.5 93.5	77.4369 [ 80.0000 ]	96.8%			
NMeFOSAA	( 570.0 / 419.0 ) 4089582 ( 570.0 / 483.0 ) 1843106	( 8.50 , 1.00 ) ( 0.00 , N/A , -0.1 )	3763.2 874.0	0.4507 95.9 95.9	21.4540 [ 20.0000 ]	107.3%			
NEIFOSAA	( 584.0 / 419.0 ) 3775897 ( 584.0 / 526.0 ) 2100626	( 8.70 , 1.00 ) ( 0.01 , N/A , -0.1 )	3451.8 3551.9	0.5563 87.1 87.1	19.7456 [ 20.0000 ]	98.7%			
NMeFOSE	( 616.0 / 59.0 ) 12166463	( 10.40 , 1.00 ) ( 0.01 , N/A , 0.0 )	4159.8	N/A 0.0 0.0	81.9788 [ 80.0000 ]	102.5%			
NEIFOSE	( 630.0 / 59.0 ) 13842886	( 10.57 , 1.00 ) ( 0.01 , N/A , 0.0 )	1836.9	N/A 0.0 0.0	79.6583 [ 80.0000 ]	99.6%			
HFPO-DA	( 285.0 / 169.0 ) 7416448 ( 285.0 / 185.0 ) 19914498	( 6.03 , 1.00 ) ( 0.00 , N/A , 0.0 )	5298.9 5719.4	2.6852 99.8 99.8	39.5174 [ 40.0000 ]	98.8%			
ADONA	( 377.0 / 85.0 ) 25207854 ( 377.0 / 251.0 ) 2886224	( 6.82 , 1.13 ) ( N/A , 0.03 , 0.0 )	5928.2 3518.3	0.1145 118.5 118.5	34.1652 [ 37.7080 ]	90.6%			
9CI-Pf3ONS	( 531.0 / 351.0 ) 59394827 ( 533.0 / 353.0 ) 22046370	( 8.87 , 1.47 ) ( N/A , 0.01 , 0.0 )	3116.1 4443.8	0.3712 116.3 116.3	29.8644 [ 37.3302 ]	80.0%			
11CI-PF3OUDS	( 631.0 / 451.0 ) 38576641 ( 633.0 / 453.0 ) 14298622	( 9.29 , 1.54 ) ( N/A , 0.00 , 0.0 )	5660.6 5576.8	0.3707 111.3 111.3	37.1607 [ 37.7283 ]	98.5%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 753219 (241.0 / 117.0) 1448014	(4.25, 0.89) (N/A, 0.02, 0.0)	2440.6 2188.1	1.9224 94.3 94.3	83.3602 [ 80.0000 ]	104.2%			
5:3FTCA	(341.0 / 236.7) 5286037 (341.0 / 217.0) 8346667	(6.21, 1.09) (N/A, 0.03, -0.1)	2762.8 2692.3	1.5790 95.9 95.9	83.6502 [ 80.0000 ]	104.6%			
7:3FTCA	(441.0 / 317.0) 9247687 (441.0 / 337.0) 7377021	(7.96, 1.39) (N/A, 0.05, -0.1)	2121.2 2126.7	0.7977 93.1 93.1	87.1944 [ 80.0000 ]	109.0%			
PFEESA	(315.0 / 135.0) 16030825 (315.0 / 83.0) 4525293	(6.17, 1.08) (N/A, 0.03, 0.0)	3574.1 4784.3	0.2823 108.9 108.9	34.7215 [ 35.6984 ]	97.3%			
PFMPA	(229.0 / 85.0) 3047447	(4.09, 0.86) (N/A, 0.02, 0.0)	5845.2	N/A 0.0 0.0	39.4434 [ 40.0000 ]	98.6%			
PFMBA	(279.0 / 85.0) 9593910	(5.09, 1.07) (N/A, 0.03, 0.0)	5244.2	N/A 0.0 0.0	38.8788 [ 40.0000 ]	97.2%			
NFDHA	(295.0 / 201.0) 8424025 (295.0 / 85.0) 8362443	(5.63, 0.98) (N/A, 0.03, 0.0)	5626.3 5548.2	0.9927 98.8 98.8	40.1382 [ 40.0000 ]	100.3%			
13C3_PFBA_IIS	(216.0 / 172.0) 184738	(3.69, N/A) (N/A, 0.01, N/A)	1844.2	N/A	0.8624 [ 1.0000 ]	86.2% { 91.3% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 316203	(5.72, N/A) (N/A, 0.03, N/A)	8998.6	N/A	1.0068 [ 1.0000 ]	100.7% { 110.8% }			
13C4_PFOA_IIS	(417.0 / 372.0) 446896	(7.23, N/A) (N/A, 0.04, N/A)	4311.5	N/A	0.9677 [ 1.0000 ]	96.8% { 106.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 374008	(7.84, N/A) (N/A, 0.05, N/A)	2760.9	N/A	0.8962 [ 1.0000 ]	89.6% { 96.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 396586	(8.41, N/A) (N/A, 0.03, N/A)	8541.1	N/A	0.9875 [ 1.0000 ]	98.7% { 103.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 651163	(7.40, N/A) (N/A, 0.05, N/A)	1191.6	N/A	0.9591 [ 1.0000 ]	95.9% { 108.8% }			
13C4_PFOS_IIS	(503.0 / 79.9) 694779	(8.61, N/A) (N/A, 0.03, N/A)	1603.0	N/A	0.8097 [ 1.0000 ]	81.0% { 83.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1791364	(3.69, N/A) (N/A, 0.01, N/A)	6420.6	N/A	8.1481 [ 8.0000 ]	101.9% { 84.6% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1364891	(4.77, N/A) (N/A, 0.03, N/A)	3948.7	N/A	3.7366 [ 4.0000 ]	93.4% { 90.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 832809	(5.72, N/A) (N/A, 0.03, N/A)	4092.1	N/A	1.8896 [ 2.0000 ]	94.5% { 95.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 836990	(6.53, N/A) (N/A, 0.03, N/A)	3788.5	N/A	1.9936 [ 2.0000 ]	99.7% { 99.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 1010212	(7.23, N/A) (N/A, 0.04, N/A)	2678.7	N/A	2.0807 [ 2.0000 ]	104.0% { 99.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 433166	(7.84, N/A) (N/A, 0.05, N/A)	12692.7	N/A	1.0900 [ 1.0000 ]	109.0% { 93.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 493448	(8.41, N/A) (N/A, 0.04, N/A)	129642.2	N/A	1.0338 [ 1.0000 ]	103.4% { 98.1% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 517252	(8.81, N/A) (N/A, 0.01, N/A)	2396.6	N/A	0.9720 [ 1.0000 ]	97.2% { 98.5% }			



Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL7  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (7)  
 Acquired: 2023/03/07 - 16:43

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 484406	(9.05, N/A) (N/A, 0.00, N/A)	7173.2	N/A	1.0413 [ 1.0000 ]	104.1% { 105.8% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 513958	(9.40, N/A) (N/A, 0.01, N/A)	1662.0	N/A	1.0475 [ 1.0000 ]	104.8% { 103.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1989521	(5.72, N/A) (N/A, 0.04, N/A)	3980.5	N/A	1.9286 [ 2.0000 ]	96.4% { 87.6% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1376442	(7.40, N/A) (N/A, 0.04, N/A)	2202.1	N/A	2.0545 [ 2.0000 ]	102.7% { 96.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2040176	(8.61, N/A) (N/A, 0.03, N/A)	1272.6	N/A	2.1902 [ 2.0000 ]	109.5% { 87.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 275625	(5.44, N/A) (N/A, 0.03, N/A)	1410.7	N/A	4.2121 [ 4.0000 ]	105.3% { 102.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 353754	(6.95, N/A) (N/A, 0.03, N/A)	3351.4	N/A	4.1176 [ 4.0000 ]	102.9% { 95.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 427194	(8.14, N/A) (N/A, 0.04, N/A)	1428.8	N/A	4.5899 [ 4.0000 ]	114.7% { 111.4% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3728987	(9.87, N/A) (N/A, 0.01, N/A)	4888.7	N/A	2.3403 [ 2.0000 ]	117.0% { 88.7% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 1024838	(10.46, N/A) (N/A, 0.02, N/A)	2513.1	N/A	2.5140 [ 2.0000 ]	125.7% { 94.0% }			
D5_NEiFOsa_EIS	(531.0 / 169.0) 886755	(10.62, N/A) (N/A, 0.02, N/A)	3320.9	N/A	2.3897 [ 2.0000 ]	119.5% { 85.6% }			





Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL7  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (7)  
 Acquired: 2023/03/07 - 16:43

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 740338	( 8.50 , N/A ) ( N/A , 0.03 , N/A )	1875.0	N/A	4.6476 [ 4.0000 ]	116.2% { 92.4% }			
D5_EtFOSAA_EIS	( 589.0 / 419.0 ) 912943	( 8.70 , N/A ) ( N/A , 0.02 , N/A )	10881.8	N/A	5.1139 [ 4.0000 ]	127.8% { 106.4% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 2996992	( 10.39 , N/A ) ( N/A , 0.02 , N/A )	1441.4	N/A	23.6249 [ 20.0000 ]	118.1% { 88.9% }			
D9_NEtFOSE_EIS	( 639.0 / 58.9 ) 3595791	( 10.56 , N/A ) ( N/A , 0.02 , N/A )	2390.0	N/A	24.0156 [ 20.0000 ]	120.1% { 86.5% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1888623	( 6.03 , N/A ) ( N/A , 0.03 , N/A )	4552.3	N/A	7.7597 [ 8.0000 ]	97.0% { 93.6% }			

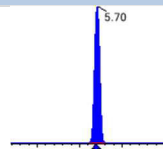
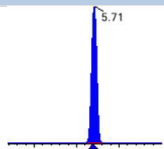
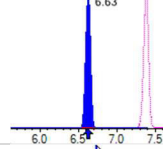
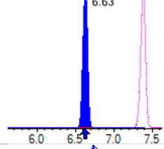
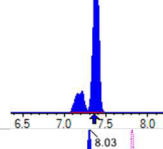
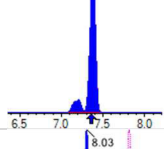
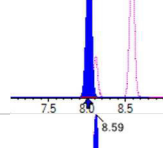
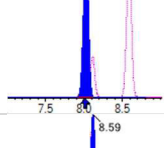
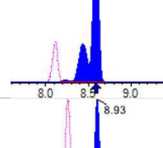
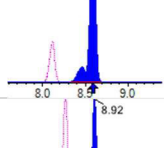
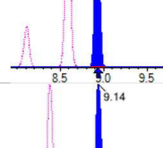
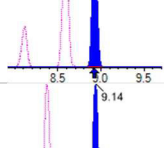
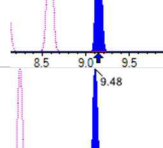
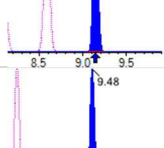
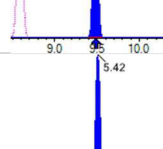
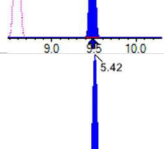
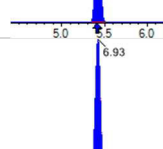
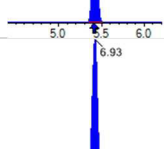
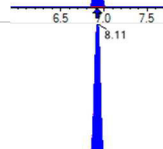
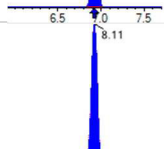
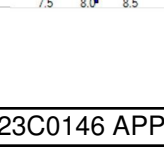
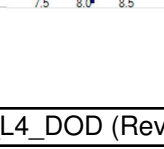


Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL8  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (8)  
 Acquired: 2023/03/07 - 16:56

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 28194490	(3.69, 1.00) (0.00, N/A, 0.0)	250.1	N/A 0.0 0.0	183.4399 [ 200.0000 ]	91.7%			
PFPeA	(263.0 / 219.0) 25676526 (263.0 / 69.0) 291878	(4.76, 1.00) (0.00, N/A, 0.0)	11443.3 2310.2	0.0114 100.4 100.4	90.6150 [ 100.0000 ]	90.6%			
PFHxA	(313.0 / 269.0) 16221489 (313.0 / 119.0) 1576991	(5.70, 1.00) (0.00, N/A, 0.0)	11462.1 3750.2	0.0972 92.3 92.3	47.0488 [ 50.0000 ]	94.1%			
PFHpA	(363.0 / 319.0) 16215410 (363.0 / 169.0) 4848365	(6.51, 1.00) (0.00, N/A, 0.1)	15117.9 41760.7	0.2990 91.7 91.7	51.2597 [ 50.0000 ]	102.5%			
PFOA	(413.0 / 369.0) 20134628 (413.0 / 169.0) 7289396	(7.21, 1.00) (0.00, N/A, 0.1)	11959.3 10322.6	0.3620 103.9 103.9	46.0130 [ 50.0000 ]	92.0%			
PFNA	(463.0 / 419.0) 17233945 (463.0 / 169.0) 3729063	(7.82, 1.00) (0.00, N/A, -0.1)	11806.7 4982.3	0.2164 92.4 92.4	47.9335 [ 50.0000 ]	95.9%			
PFDA	(513.0 / 469.0) 21055778 (513.0 / 169.0) 2238507	(8.38, 1.00) (0.00, N/A, 0.0)	4807.1 2700.7	0.1063 99.9 99.9	48.2261 [ 50.0000 ]	96.5%			
PFUnA	(563.0 / 519.0) 18365759 (563.0 / 169.0) 2027450	(8.79, 1.00) (0.00, N/A, 0.0)	5230.4 2274.0	0.1104 92.1 92.1	49.6556 [ 50.0000 ]	99.3%			
PFDoA	(613.0 / 569.0) 16804583 (613.0 / 169.0) 2614963	(9.04, 1.00) (0.00, N/A, 0.0)	3357.7 3831.5	0.1556 95.6 95.6	44.1770 [ 50.0000 ]	88.4%			
PFTrDA	(663.0 / 619.0) 13857572 (663.0 / 169.0) 3472823	(9.23, 1.02) (N/A, -0.01, -0.1)	4565.7 3337.5	0.2506 102.7 102.7	37.9871 [ 50.0000 ]	76.0%			
PFTeDA	(713.0 / 669.0) 18112204 (713.0 / 169.0) 3591344	(9.40, 1.00) (0.00, N/A, 0.0)	5041.8 2497.4	0.1983 103.7 103.7	42.9339 [ 50.0000 ]	85.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 23387642 (299.0 / 99.0) 15231547	(5.70, 1.00) (0.00, N/A, 0.0)	6420.4 6444.8	0.6513 111.0 111.0	42.1567 [ 44.2367 ]	95.3%			
PFPeS	(349.0 / 80.0) 44103650 (349.0 / 99.0) 17745420	(6.63, 0.90) (N/A, 0.01, -0.1)	31328.5 41014.8	0.4024 117.8 117.8	41.5157 [ 46.9191 ]	88.5%			
PFHxS	(399.0 / 80.0) 42716749 (399.0 / 99.0) 15139756	(7.38, 1.00) (0.00, N/A, 0.2)	6466.4 51901071.1	0.3544 103.4 103.4	44.2014 [ 45.5491 ]	97.0%			
PFHpS	(449.0 / 80.0) 39760233 (449.0 / 99.0) 12016684	(8.03, 0.93) (N/A, 0.01, 0.0)	26714.4 3322.7	0.3022 106.4 106.4	40.6245 [ 47.5703 ]	85.4%			
PFOS	(499.0 / 80.0) 50397653 (499.0 / 99.0) 11762234	(8.59, 1.00) (0.00, N/A, 0.0)	4099.4 1821.0	0.2334 107.8 107.8	41.4299 [ 46.3746 ]	89.3%			
PFNS	(549.0 / 80.0) 42077398 (549.0 / 99.0) 11628110	(8.93, 1.04) (N/A, 0.00, 0.0)	13372.1 6635.2	0.2764 120.5 120.5	36.4752 [ 47.9943 ]	76.0%			
PFDS	(599.0 / 80.0) 51027281 (599.0 / 99.0) 13711608	(9.14, 1.06) (N/A, 0.00, 0.0)	7426.9 5335.7	0.2687 118.7 118.7	38.2883 [ 48.1553 ]	79.5%			
PFDoS	(699.0 / 80.0) 43091708 (699.0 / 99.0) 11427848	(9.48, 1.10) (N/A, 0.00, -0.1)	4849.8 3795.4	0.2652 121.6 121.6	40.4503 [ 48.4781 ]	83.4%			
4:2FTS	(327.0 / 307.0) 32797846 (327.0 / 81.0) 21614814	(5.42, 1.00) (0.00, N/A, 0.0)	5700.3 6179.7	0.6590 106.4 106.4	164.4716 [ 186.9055 ]	88.0%			
6:2FTS	(427.0 / 407.0) 23591728 (427.0 / 81.0) 17476058	(6.93, 1.00) (0.00, N/A, 0.0)	6446.5 6466.3	0.7408 107.2 107.2	166.1053 [ 189.8085 ]	87.5%			
8:2FTS	(527.0 / 507.0) 23002314 (527.0 / 81.0) 16933256	(8.11, 1.00) (0.00, N/A, 0.0)	4448.6 4618.3	0.7362 109.0 109.0	156.1208 [ 191.6577 ]	81.5%			

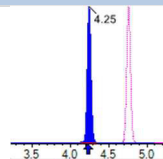
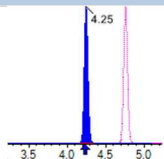
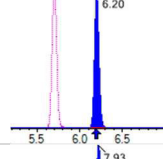
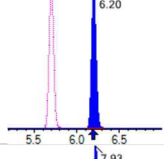
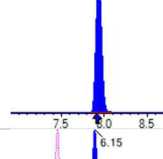
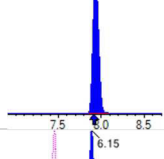
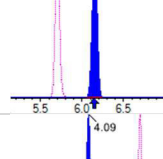
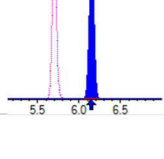
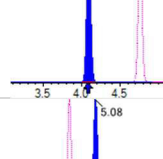
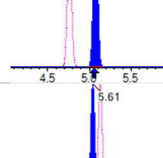
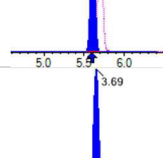
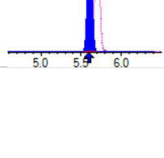
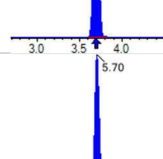
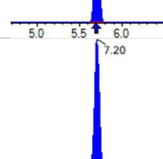
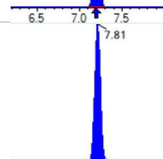
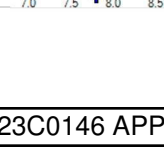


Chemist: DAG  
Instrument: Saphira  
Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL8  
DF, IV: 1, 10.0µL  
Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
Path: S2023-03-07A (8)  
Acquired: 2023/03/07 - 16:56

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	( 498.0 / 78.0 ) 53177131 ( 498.0 / 478.0 ) 1564730	( 9.86 , 1.00 ) ( 0.00 , N/A , 0.0 )	4192.4 3640.3	0.0294 132.4 132.4	39.1700 [ 50.0000 ]	78.3%			
NMeFOSA	( 512.0 / 219.0 ) 59814565 ( 512.0 / 169.0 ) 50589226	( 10.45 , 1.00 ) ( -0.01 , N/A , 0.9 )	4910.1 5159.0	0.8458 101.1 101.1	142.9144 [ 200.0000 ]	71.5%			
NEIFOSA	( 526.0 / 219.0 ) 62794272 ( 526.0 / 169.0 ) 72096668	( 10.61 , 1.00 ) ( -0.01 , N/A , 0.5 )	19321.9 21939.1	1.1481 90.0 90.0	181.2571 [ 200.0000 ]	90.6%			
NMeFOSAA	( 570.0 / 419.0 ) 9701053 ( 570.0 / 483.0 ) 4502968	( 8.48 , 1.00 ) ( 0.01 , N/A , 0.1 )	4095.9 1037.7	0.4642 98.8 98.8	47.9316 [ 50.0000 ]	95.9%			
NEIFOSAA	( 584.0 / 419.0 ) 8633231 ( 584.0 / 526.0 ) 5053479	( 8.68 , 1.00 ) ( 0.00 , N/A , -0.1 )	3826.8 3618.5	0.5854 91.7 91.7	48.1637 [ 50.0000 ]	96.3%			
NMeFOSE	( 616.0 / 59.0 ) 26483793	( 10.40 , 1.00 ) ( 0.01 , N/A , 0.0 )	4892.2	N/A 0.0 0.0	199.1291 [ 200.0000 ]	99.6%			
NEtFOSE	( 630.0 / 59.0 ) 27197180	( 10.57 , 1.00 ) ( 0.01 , N/A , 0.0 )	1589.6	N/A 0.0 0.0	193.2760 [ 200.0000 ]	96.6%			
HFPO-DA	( 285.0 / 169.0 ) 16930429 ( 285.0 / 185.0 ) 39516373	( 6.01 , 1.00 ) ( 0.00 , N/A , 0.1 )	3883.9 6307.4	2.3340 86.7 86.7	94.0318 [ 100.0000 ]	94.0%			
ADONA	( 377.0 / 85.0 ) 48907797 ( 377.0 / 251.0 ) 6546772	( 6.79 , 1.13 ) ( N/A , 0.01 , 0.0 )	3820.3 3392.7	0.1339 138.6 138.6	69.0941 [ 94.2700 ]	73.3%			
9CI-Pf3ONS	( 531.0 / 351.0 ) N/A ( 533.0 / 353.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000 [ 93.3254 ]	N/A%			QC,
11CI-PF3OUDS	( 631.0 / 451.0 ) 65536324 ( 633.0 / 453.0 ) 28646753	( 9.29 , 1.54 ) ( N/A , 0.00 , -0.1 )	5290.2 2765.0	0.4371 131.3 131.3	94.0420 [ 94.3208 ]	99.7%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 1913847	(4.25, 0.89)	3445.5	1.9226 94.3	224.3539	112.2%			
	(241.0 / 117.0) 3679641	(N/A, 0.02, 0.0)	3988.0	94.3	[200.0000]				
5:3FTCA	(341.0 / 236.7) 12299269	(6.20, 1.09)	3168.7	1.6626 100.9	208.9678	104.5%			
	(341.0 / 217.0) 20448567	(N/A, 0.01, -0.1)	4271.5	100.9	[200.0000]				
7:3FTCA	(441.0 / 317.0) 22387428	(7.93, 1.39)	2694.4	0.8469 98.8	226.6329	113.3%			
	(441.0 / 337.0) 18959161	(N/A, 0.02, 0.0)	2952.5	98.8	[200.0000]				
PFEEASA	(315.0 / 135.0) 33028805	(6.15, 1.08)	3355.2	0.3072 118.6	76.8066	86.1%			
	(315.0 / 83.0) 10147116	(N/A, 0.01, 0.1)	5125.6	118.6	[89.2459]				
PFMPA	(229.0 / 85.0) 6549586	(4.09, 0.86)	5355.4	N/A 0.0	89.7925	89.8%			
		(N/A, 0.02, 0.0)		0.0	[100.0000]				
PFMBA	(279.0 / 85.0) 20391299	(5.08, 1.07)	6325.0	N/A 0.0	87.5287	87.5%			
		(N/A, 0.02, 0.0)		0.0	[100.0000]				
NFDHA	(295.0 / 201.0) 18429626	(5.61, 0.98)	5692.8	0.9683 96.4	94.2797	94.3%			
	(295.0 / 85.0) 17844726	(N/A, 0.01, 0.0)	6234.0	96.4	[100.0000]				
13C3_PFBA_IIS	(216.0 / 172.0) 154336	(3.69, N/A)	1373.1	N/A	0.7205	72.1% {76.2%}			
		(N/A, 0.01, N/A)			[1.0000]				
13C2_PFHxA_IIS	(315.0 / 270.0) 315954	(5.70, N/A)	10169.6	N/A	1.0060	100.6% {110.7%}			
		(N/A, 0.01, N/A)			[1.0000]				
13C4_PFOA_IIS	(417.0 / 372.0) 428374	(7.20, N/A)	6967.6	N/A	0.9276	92.8% {102.2%}			
		(N/A, 0.01, N/A)			[1.0000]				
13C5_PFNxA_IIS	(468.0 / 423.0) 428772	(7.81, N/A)	31194.2	N/A	1.0274	102.7% {111.1%}			
		(N/A, 0.02, N/A)			[1.0000]				



Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL8  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (8)  
 Acquired: 2023/03/07 - 16:56

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 406670	(8.38, N/A) (N/A, 0.01, N/A)	2681.1	N/A	1.0126 [ 1.0000 ]	101.3% { 105.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 686847	(7.38, N/A) (N/A, 0.02, N/A)	2000.7	N/A	1.0117 [ 1.0000 ]	101.2% { 114.8% }			
13C4_PFOS_IIS	(503.0 / 79.9) 777774	(8.59, N/A) (N/A, 0.00, N/A)	1430.8	N/A	0.9064 [ 1.0000 ]	90.6% { 93.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1488969	(3.69, N/A) (N/A, 0.01, N/A)	6419.8	N/A	8.1068 [ 8.0000 ]	101.3% { 70.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1288575	(4.76, N/A) (N/A, 0.02, N/A)	3874.2	N/A	3.5304 [ 4.0000 ]	88.3% { 85.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 775679	(5.70, N/A) (N/A, 0.01, N/A)	3089.9	N/A	1.7614 [ 2.0000 ]	88.1% { 88.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 749845	(6.51, N/A) (N/A, 0.01, N/A)	2507.0	N/A	1.7874 [ 2.0000 ]	89.4% { 88.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 964198	(7.20, N/A) (N/A, 0.01, N/A)	3804.1	N/A	2.0718 [ 2.0000 ]	103.6% { 95.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 415482	(7.81, N/A) (N/A, 0.02, N/A)	1566.8	N/A	0.9120 [ 1.0000 ]	91.2% { 89.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 462834	(8.38, N/A) (N/A, 0.01, N/A)	3370.2	N/A	0.9456 [ 1.0000 ]	94.6% { 92.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 463084	(8.79, N/A) (N/A, 0.00, N/A)	2050.3	N/A	0.8486 [ 1.0000 ]	84.9% { 88.2% }			



Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL8  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (8)  
 Acquired: 2023/03/07 - 16:56

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 452178	(9.04, N/A) (N/A, 0.00, N/A)	2858.6	N/A	0.9479 [ 1.0000 ]	94.8% { 98.8% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 494112	(9.40, N/A) (N/A, 0.00, N/A)	1888.3	N/A	0.9821 [ 1.0000 ]	98.2% { 99.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1718852	(5.70, N/A) (N/A, 0.02, N/A)	1764.4	N/A	1.5796 [ 2.0000 ]	79.0% { 75.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1288358	(7.38, N/A) (N/A, 0.02, N/A)	1981.3	N/A	1.8232 [ 2.0000 ]	91.2% { 90.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2156531	(8.59, N/A) (N/A, 0.00, N/A)	679.7	N/A	2.0680 [ 2.0000 ]	103.4% { 92.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 273474	(5.42, N/A) (N/A, 0.01, N/A)	1752.2	N/A	3.9621 [ 4.0000 ]	99.1% { 101.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 395495	(6.93, N/A) (N/A, 0.01, N/A)	2315.2	N/A	4.3643 [ 4.0000 ]	109.1% { 107.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 440267	(8.11, N/A) (N/A, 0.01, N/A)	1808.5	N/A	4.4846 [ 4.0000 ]	112.1% { 114.8% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3271539	(9.87, N/A) (N/A, 0.01, N/A)	4019.0	N/A	1.8342 [ 2.0000 ]	91.7% { 77.9% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 1018012	(10.46, N/A) (N/A, 0.02, N/A)	2604.2	N/A	2.2307 [ 2.0000 ]	111.5% { 93.4% }			
D5_NEiFOsa_EIS	(531.0 / 169.0) 727849	(10.62, N/A) (N/A, 0.02, N/A)	3207.3	N/A	1.7522 [ 2.0000 ]	87.6% { 70.3% }			



Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-CAL8  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (8)  
 Acquired: 2023/03/07 - 16:56

Analyte	( Q1 / Q3 ) Area Counts*min	R.T. ( R.T [min] , R.R.T. ) ( ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 786063	( 8.47 , N/A ) ( N/A , 0.00 , N/A )	1968.0	N/A	4.4081 [ 4.0000 ]	110.2% { 98.1% }			
D5_EtFOSAA_EIS	( 589.0 / 419.0 ) 855751	( 8.68 , N/A ) ( N/A , 0.00 , N/A )	5504.8	N/A	4.2820 [ 4.0000 ]	107.1% { 99.7% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 2685767	( 10.39 , N/A ) ( N/A , 0.02 , N/A )	997.3	N/A	18.9124 [ 20.0000 ]	94.6% { 79.7% }			
D9_NEtFOSE_EIS	( 639.0 / 58.9 ) 2911689	( 10.56 , N/A ) ( N/A , 0.02 , N/A )	1911.4	N/A	17.3715 [ 20.0000 ]	86.9% { 70.1% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1811885	( 6.01 , N/A ) ( N/A , 0.01 , N/A )	3209.1	N/A	7.4503 [ 8.0000 ]	93.1% { 89.7% }			



**SECOND-SOURCE CALIBRATION VERIFICATION****EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2310010**Laboratory ID:** SC00916-SCV1**Sequence:** SC00916**Standard ID:** 23B0089

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	8.00	7.66	-4.3	30.00
PFPEA	4.00	3.70	-7.5	30.00
PFHXA	2.00	1.90	-4.8	30.00
PFHPA	2.00	1.77	-11.7	30.00
PFOA	2.00	1.86	-7.0	30.00
PFNA	2.00	1.80	-10.0	30.00
PFDA	2.00	1.73	-13.4	30.00
PFUnA	2.00	1.99	-0.7	30.00
PFDOA	2.00	2.16	8.0	30.00
PFTRDA	2.00	2.28	14.1	30.00
PFTEDA	2.00	1.94	-3.2	30.00
PFBS	1.77	1.59	-10.0	30.00
PFPEs	1.88	1.96	4.4	30.00
PFHXS	1.83	1.69	-7.5	30.00
PFHPS	1.91	1.71	-10.6	30.00
PFOS	1.86	1.58	-14.9	30.00
PFNS	1.92	1.90	-1.0	30.00
PFDS	1.93	1.84	-4.7	30.00
PFDOS	1.94	1.85	-4.5	30.00
4:2FTS	7.50	7.07	-5.7	30.00
6:2FTS	7.60	7.46	-1.8	30.00
8:2FTS	7.68	7.26	-5.4	30.00
PFOSA	2.00	1.98	-1.1	30.00
NMeFOSA	8.00	7.71	-3.6	30.00
NEtFOSA	8.00	7.09	-11.4	30.00
NMeFOSAA	2.00	1.83	-8.3	30.00
NEtFOSAA	2.00	1.87	-6.7	30.00

**SECOND-SOURCE CALIBRATION VERIFICATION****EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2310010**Laboratory ID:** SC00916-SCV1**Sequence:** SC00916**Standard ID:** 23B0089

NMeFOSE	8.00	8.30	3.8	30.00
NEtFOSE	8.00	8.15	1.9	30.00
HFPO-DA	4.00	3.66	-8.4	30.00
ADONA	3.78	3.81	0.9	30.00
PFEESA	3.56	3.45	-3.1	30.00
PFMPA	4.00	3.45	-13.7	30.00
PFMBA	4.00	3.71	-7.3	30.00
NFDHA	4.00	3.73	-6.7	30.00
9CL-PF3ONS	3.74	3.86	3.2	30.00
11CL-PF3OUDS	3.78	3.75	-0.9	30.00
3:3FTCA	8.00	7.32	-8.5	30.00
5:3FTCA	8.00	6.97	-12.8	30.00
7:3FTCA	8.00	7.25	-9.3	30.00
13C4-PFBA	8.00	8.23	2.8	30.00
13C5-PFPEA	4.00	4.38	9.6	30.00
13C5-PFHXA	2.00	2.10	4.9	30.00
13C4-PFHPA	2.00	2.10	5.0	30.00
13C8-PFOA	2.00	2.27	13.5	30.00
13C9-PFNA	1.00	1.11	11.1	30.00
13C6-PFDA	1.00	1.11	11.1	30.00
13C7-PFUnA	1.00	1.07	7.3	30.00
13C2-PFDOA	1.00	0.970	-3.0	30.00
13C2-PFTEDA	1.00	1.11	10.8	30.00
13C3-PFBS	2.00	2.27	13.7	30.00
13C3-PFHXS	2.00	2.01	0.7	30.00
13C8-PFOS	2.00	2.03	1.6	30.00
13C2-4:2FTS	4.00	4.03	0.8	30.00
13C2-6:2FTS	4.00	4.08	2.0	30.00
13C2-8:2FTS	4.00	4.25	6.3	30.00

**SECOND-SOURCE CALIBRATION VERIFICATION****EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2310010**Laboratory ID:** SC00916-SCV1**Sequence:** SC00916**Standard ID:** 23B0089

13C8-PFOSA	2.00	1.99	-0.5	30.00
D3-NMEFOSA	2.00	1.95	-2.6	30.00
D5-NETFOSA	2.00	2.06	3.0	30.00
D3-NMEFOSAA	4.00	3.84	-4.0	30.00
D5-NETFOSAA	4.00	4.02	0.6	30.00
D7-NMEFOSE	20.0	21.2	5.9	30.00
D9-NETFOSAE	20.0	20.5	2.5	30.00
13C3-HFPO-DA	8.00	8.42	5.3	30.00

\* Values outside of QC limits

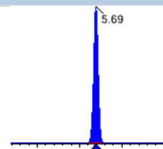
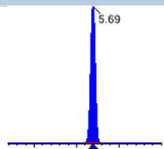
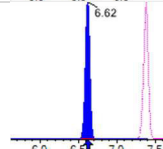
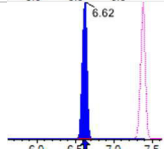
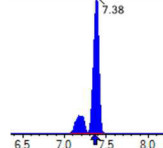
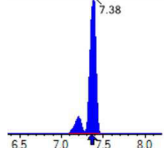
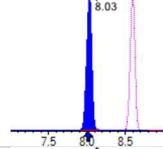
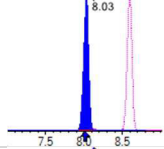
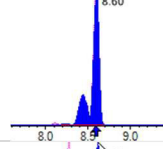
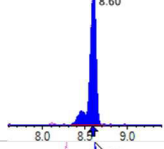
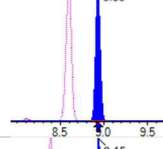
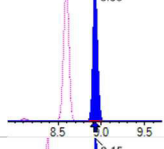
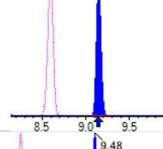
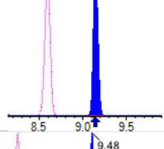
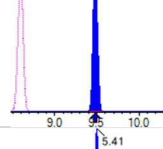
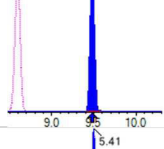
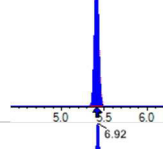
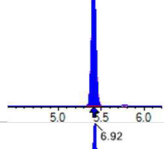
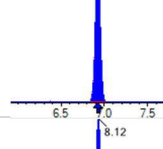
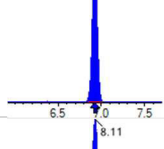
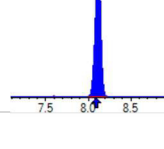
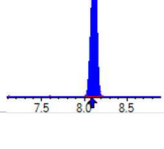


Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-SCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (10)  
 Acquired: 2023/03/07 - 17:22

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	( 213.0 / 169.0 ) 1664096	( 3.68 , 1.00 ) ( 0.00 , N/A , 0.0 )	261.1	N/A 0.0 0.0	7.6595 [ 8.0000 ]	95.7%			
PFPeA	( 263.0 / 219.0 ) 1253382 ( 263.0 / 69.0 ) 14187	( 4.74 , 1.00 ) ( 0.00 , N/A , 0.1 )	4512.2 398.1	0.0113 100.0 100.0	3.6984 [ 4.0000 ]	92.5%			
PFHxA	( 313.0 / 269.0 ) 753563 ( 313.0 / 119.0 ) 73223	( 5.69 , 1.00 ) ( 0.00 , N/A , -0.1 )	6278.8 2909.9	0.0972 92.2 92.2	1.9044 [ 2.0000 ]	95.2%			
PFHpA	( 363.0 / 319.0 ) 632362 ( 363.0 / 169.0 ) 192370	( 6.51 , 1.00 ) ( 0.00 , N/A , -0.1 )	136798.3 5722.1	0.3042 93.3 93.3	1.7663 [ 2.0000 ]	88.3%			
PFOA	( 413.0 / 369.0 ) 885681 ( 413.0 / 169.0 ) 300853	( 7.20 , 1.00 ) ( 0.00 , N/A , -0.3 )	7469.5 2755.3	0.3397 97.5 97.5	1.8607 [ 2.0000 ]	93.0%			
PFNA	( 463.0 / 419.0 ) 708343 ( 463.0 / 169.0 ) 166595	( 7.82 , 1.00 ) ( 0.00 , N/A , -0.1 )	119549.5 3758163.8	0.2352 100.5 100.5	1.7998 [ 2.0000 ]	90.0%			
PFDA	( 513.0 / 469.0 ) 825199 ( 513.0 / 169.0 ) 81929	( 8.39 , 1.00 ) ( 0.00 , N/A , 0.0 )	1384.8 49713.2	0.0993 93.3 93.3	1.7328 [ 2.0000 ]	86.6%			
PFUnA	( 563.0 / 519.0 ) 862355 ( 563.0 / 169.0 ) 91390	( 8.80 , 1.00 ) ( 0.00 , N/A , 0.2 )	1646.5 456.3	0.1060 88.4 88.4	1.9857 [ 2.0000 ]	99.3%			
PFDoA	( 613.0 / 569.0 ) 780919 ( 613.0 / 169.0 ) 120958	( 9.04 , 1.00 ) ( 0.00 , N/A , -0.3 )	1791.5 437.1	0.1549 95.2 95.2	2.1609 [ 2.0000 ]	108.0%			
PFTTrDA	( 663.0 / 619.0 ) 790884 ( 663.0 / 169.0 ) 173759	( 9.24 , 1.02 ) ( N/A , 0.00 , 0.5 )	1998.3 4252.9	0.2197 90.0 90.0	2.2820 [ 2.0000 ]	114.1%			
PFTeDA	( 713.0 / 669.0 ) 855431 ( 713.0 / 169.0 ) 159035	( 9.40 , 1.00 ) ( 0.00 , N/A , 0.1 )	2082.1 853.3	0.1859 97.3 97.3	1.9357 [ 2.0000 ]	96.8%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 1201687 (299.0 / 99.0) 760731	(5.69, 1.00) (0.00, N/A, 0.0)	4106.3 2562.1	0.6331 107.9 107.9	1.5922 [ 1.7695 ]	90.0%			
PFPeS	(349.0 / 80.0) 2175309 (349.0 / 99.0) 746031	(6.62, 0.90) (N/A, 0.00, -0.1)	6815.0 76954.6	0.3430 100.4 100.4	1.9623 [ 1.8768 ]	104.6%			
PFHxS	(399.0 / 80.0) 1706170 (399.0 / 99.0) 562130	(7.38, 1.00) (0.00, N/A, 0.3)	995439.9 2626.3	0.3295 96.1 96.1	1.6919 [ 1.8220 ]	92.9%			
PFHpS	(449.0 / 80.0) 1946441 (449.0 / 99.0) 535417	(8.03, 0.93) (N/A, 0.02, 0.1)	5262.9 5928897.4	0.2751 96.8 96.8	1.7083 [ 1.9028 ]	89.8%			
PFOS	(499.0 / 80.0) 2242196 (499.0 / 99.0) 487501	(8.60, 1.00) (0.00, N/A, 0.0)	1456.7 704.5	0.2174 100.5 100.5	1.5833 [ 1.8550 ]	85.4%			
PFNS	(549.0 / 80.0) 2551843 (549.0 / 99.0) 610737	(8.93, 1.04) (N/A, 0.00, 0.1)	110468.2 3581.4	0.2393 104.4 104.4	1.9001 [ 1.9198 ]	99.0%			
PFDS	(599.0 / 80.0) 2853931 (599.0 / 99.0) 637835	(9.15, 1.06) (N/A, 0.00, 0.0)	3357.2 2297.6	0.2235 98.7 98.7	1.8394 [ 1.9262 ]	95.5%			
PFDoS	(699.0 / 80.0) 2298831 (699.0 / 99.0) 518668	(9.48, 1.10) (N/A, 0.00, 0.0)	2567.9 1806.3	0.2256 103.5 103.5	1.8536 [ 1.9391 ]	95.6%			
4:2FTS	(327.0 / 307.0) 1355571 (327.0 / 81.0) 852910	(5.41, 1.00) (0.00, N/A, -0.1)	5701.3 1849.5	0.6292 101.6 101.6	7.0750 [ 7.4762 ]	94.6%			
6:2FTS	(427.0 / 407.0) 936616 (427.0 / 81.0) 688032	(6.92, 1.00) (0.00, N/A, 0.0)	2053.3 2319.9	0.7346 106.3 106.3	7.4645 [ 7.5923 ]	98.3%			
8:2FTS	(527.0 / 507.0) 958389 (527.0 / 81.0) 717713	(8.12, 1.00) (0.00, N/A, 0.1)	2404.4 1881.0	0.7489 110.9 110.9	7.2638 [ 7.6663 ]	94.7%			

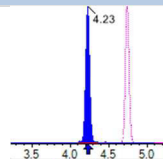
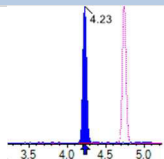
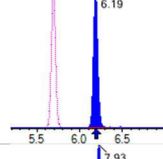
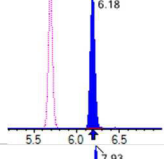
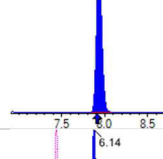
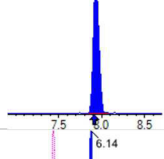
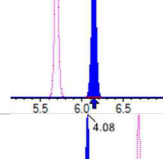
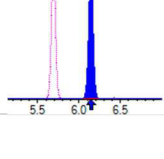
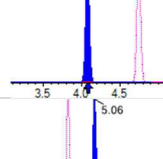
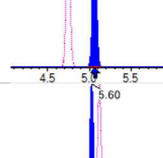
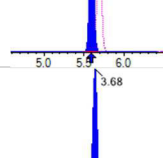
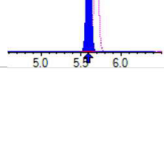
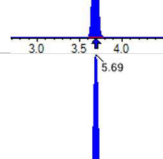
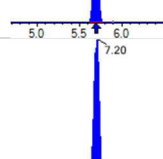
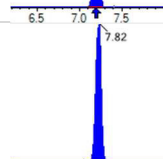
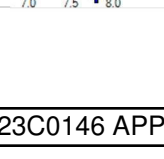


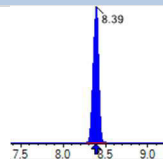
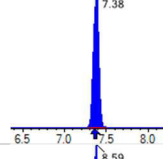
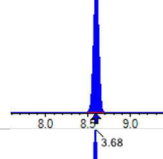
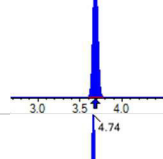
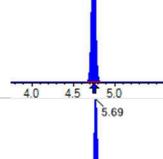
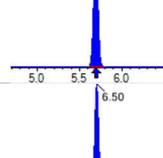
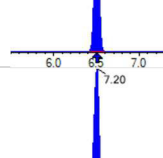
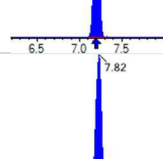
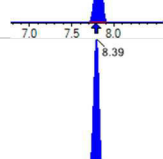
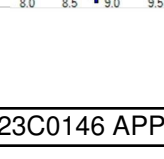
Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-SCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

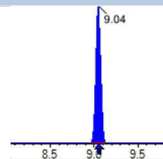
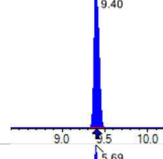
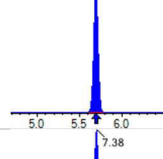
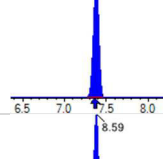
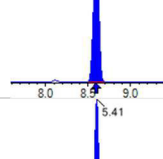
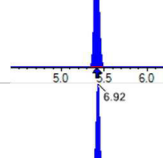
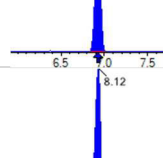
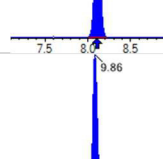
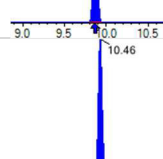
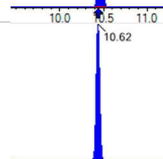
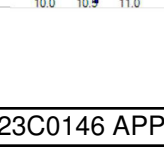
Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (10)  
 Acquired: 2023/03/07 - 17:22

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	( 498.0 / 78.0 ) 3453097 ( 498.0 / 478.0 ) 75202	( 9.86 , 1.00 ) ( 0.00 , N/A , 0.2 )	3766.9 612.7	0.0218 98.0 98.0	1.9775 [ 2.0000 ]	98.9%			
NMeFOSA	( 512.0 / 219.0 ) 3343169 ( 512.0 / 169.0 ) 2422949	( 10.47 , 1.00 ) ( 0.00 , N/A , 0.0 )	6906.2 5715.6	0.7247 86.7 86.7	7.7143 [ 8.0000 ]	96.4%			
NEIFOSA	( 526.0 / 219.0 ) 3421761 ( 526.0 / 169.0 ) 3644672	( 10.63 , 1.00 ) ( 0.01 , N/A , 0.0 )	9783.9 7812.9	1.0651 83.4 83.4	7.0871 [ 8.0000 ]	88.6%			
NMeFOSAA	( 570.0 / 419.0 ) 383277 ( 570.0 / 483.0 ) 191900	( 8.48 , 1.00 ) ( 0.00 , N/A , -0.1 )	9579.1 355.1	0.5007 106.6 106.6	1.8341 [ 2.0000 ]	91.7%			
NEIFOSAA	( 584.0 / 419.0 ) 372479 ( 584.0 / 526.0 ) 211704	( 8.69 , 1.00 ) ( 0.01 , N/A , -0.1 )	33267.6 1287.8	0.5684 89.0 89.0	1.8665 [ 2.0000 ]	93.3%			
NMeFOSE	( 616.0 / 59.0 ) 1465026	( 10.40 , 1.00 ) ( 0.01 , N/A , 0.0 )	2848.7	N/A 0.0 0.0	8.3016 [ 8.0000 ]	103.8%			
NEtFOSE	( 630.0 / 59.0 ) 1604413	( 10.57 , 1.00 ) ( 0.01 , N/A , 0.0 )	2356.0	N/A 0.0 0.0	8.1507 [ 8.0000 ]	101.9%			
HFPO-DA	( 285.0 / 169.0 ) 718380 ( 285.0 / 185.0 ) 1875342	( 6.01 , 1.00 ) ( 0.00 , N/A , -0.2 )	2183.9 3637.3	2.6105 97.0 97.0	3.6635 [ 4.0000 ]	91.6%			
ADONA	( 377.0 / 85.0 ) 2940313 ( 377.0 / 251.0 ) 294319	( 6.79 , 1.13 ) ( N/A , 0.00 , 0.0 )	3346.7 1190.2	0.1001 103.6 103.6	3.8141 [ 3.7708 ]	101.1%			
9CI-Pf3ONS	( 531.0 / 351.0 ) 8022611 ( 533.0 / 353.0 ) 2455718	( 8.87 , 1.48 ) ( N/A , 0.00 , 0.0 )	3379.1 2482.3	0.3061 95.9 95.9	3.8608 [ 3.7330 ]	103.4%			
11CI-PF3OUDS	( 631.0 / 451.0 ) 4731455 ( 633.0 / 453.0 ) 1609022	( 9.29 , 1.55 ) ( N/A , 0.00 , 0.0 )	4301.4 3379.7	0.3401 102.1 102.1	3.7456 [ 3.7728 ]	99.3%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 74724 (241.0 / 117.0) 133140	(4.23, 0.89) (N/A, 0.00, 0.0)	1129.3 569.6	1.7818 87.4 87.4	7.3240 [ 8.0000 ]	91.5%			
5:3FTCA	(341.0 / 236.7) 471044 (341.0 / 217.0) 778565	(6.19, 1.09) (N/A, 0.00, 0.0)	1725.4 1518.7	1.6529 100.4 100.4	6.9733 [ 8.0000 ]	87.2%			
7:3FTCA	(441.0 / 317.0) 822193 (441.0 / 337.0) 732974	(7.93, 1.39) (N/A, 0.02, 0.1)	1657.6 1426.6	0.8915 104.0 104.0	7.2522 [ 8.0000 ]	90.7%			
PFEESA	(315.0 / 135.0) 1702147 (315.0 / 83.0) 462589	(6.14, 1.08) (N/A, 0.00, 0.0)	16538.4 1911.8	0.2718 104.9 104.9	3.4489 [ 3.5698 ]	96.6%			
PFMPA	(229.0 / 85.0) 301046	(4.08, 0.86) (N/A, 0.00, 0.0)	3905.7	N/A 0.0 0.0	3.4508 [ 4.0000 ]	86.3%			
PFMBA	(279.0 / 85.0) 1033208	(5.06, 1.07) (N/A, 0.00, 0.0)	5108.7	N/A 0.0 0.0	3.7081 [ 4.0000 ]	92.7%			
NFDHA	(295.0 / 201.0) 837378 (295.0 / 85.0) 874846	(5.60, 0.98) (N/A, 0.00, 0.0)	2532.7 3328.2	1.0447 104.0 104.0	3.7325 [ 4.0000 ]	93.3%			
13C3_PFBA_IIS	(216.0 / 172.0) 214976	(3.68, N/A) (N/A, 0.00, N/A)	1796.6	N/A	1.0036 [ 1.0000 ]	100.4% { 106.2% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 304439	(5.69, N/A) (N/A, 0.00, N/A)	13439.9	N/A	0.9693 [ 1.0000 ]	96.9% { 106.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 425465	(7.20, N/A) (N/A, 0.01, N/A)	3979.7	N/A	0.9213 [ 1.0000 ]	92.1% { 101.5% }			
13C5_PFNA_IIS	(468.0 / 423.0) 385110	(7.82, N/A) (N/A, 0.03, N/A)	1641.2	N/A	0.9228 [ 1.0000 ]	92.3% { 99.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 377711	(8.39, N/A) (N/A, 0.01, N/A)	8059.1	N/A	0.9405 [ 1.0000 ]	94.0% { 98.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 648804	(7.38, N/A) (N/A, 0.02, N/A)	2264.7	N/A	0.9556 [ 1.0000 ]	95.6% { 108.4% }			
13C4_PFOS_IIS	(503.0 / 79.9) 921781	(8.59, N/A) (N/A, 0.01, N/A)	1328.6	N/A	1.0743 [ 1.0000 ]	107.4% { 110.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 2104725	(3.68, N/A) (N/A, 0.00, N/A)	5991.5	N/A	8.2269 [ 8.0000 ]	102.8% { 99.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1541161	(4.74, N/A) (N/A, 0.00, N/A)	4238.0	N/A	4.3822 [ 4.0000 ]	109.6% { 102.2% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 890239	(5.69, N/A) (N/A, 0.00, N/A)	3757.2	N/A	2.0979 [ 2.0000 ]	104.9% { 101.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 848645	(6.50, N/A) (N/A, 0.00, N/A)	1489.8	N/A	2.0995 [ 2.0000 ]	105.0% { 100.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 1048839	(7.20, N/A) (N/A, 0.01, N/A)	1580.9	N/A	2.2691 [ 2.0000 ]	113.5% { 103.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 454804	(7.82, N/A) (N/A, 0.03, N/A)	8063.0	N/A	1.1115 [ 1.0000 ]	111.1% { 98.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 504834	(8.39, N/A) (N/A, 0.02, N/A)	8986.1	N/A	1.1105 [ 1.0000 ]	111.1% { 100.4% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 543728	(8.80, N/A) (N/A, 0.00, N/A)	15878.5	N/A	1.0728 [ 1.0000 ]	107.3% { 103.5% }			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT- CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 429592	(9.04, N/A) (N/A, 0.00, N/A)	2775.3	N/A	0.9696 [ 1.0000 ]	97.0% { 93.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 517617	(9.40, N/A) (N/A, 0.00, N/A)	9065.6	N/A	1.1077 [ 1.0000 ]	110.8% { 103.9% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2338331	(5.69, N/A) (N/A, 0.00, N/A)	5427.1	N/A	2.2749 [ 2.0000 ]	113.7% { 103.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1344378	(7.38, N/A) (N/A, 0.02, N/A)	3272.3	N/A	2.0140 [ 2.0000 ]	100.7% { 94.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2510585	(8.59, N/A) (N/A, 0.01, N/A)	1778.2	N/A	2.0314 [ 2.0000 ]	101.6% { 107.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 262760	(5.41, N/A) (N/A, 0.00, N/A)	1789.8	N/A	4.0301 [ 4.0000 ]	100.8% { 97.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 349402	(6.92, N/A) (N/A, 0.00, N/A)	1824.0	N/A	4.0817 [ 4.0000 ]	102.0% { 94.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 394261	(8.12, N/A) (N/A, 0.02, N/A)	1449.2	N/A	4.2514 [ 4.0000 ]	106.3% { 102.8% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 4207938	(9.86, N/A) (N/A, 0.01, N/A)	3731.9	N/A	1.9906 [ 2.0000 ]	99.5% { 100.1% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 1054109	(10.46, N/A) (N/A, 0.02, N/A)	3195.9	N/A	1.9490 [ 2.0000 ]	97.4% { 96.7% }			
D5_NEiFOsa_EIS	(531.0 / 169.0) 1014374	(10.62, N/A) (N/A, 0.02, N/A)	3874.7	N/A	2.0605 [ 2.0000 ]	103.0% { 97.9% }			



Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-SCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (10)  
 Acquired: 2023/03/07 - 17:22

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 811596	( 8.48 , N/A ) ( N/A , 0.01 , N/A )	1969.1	N/A	3.8403 [ 4.0000 ]	96.0% { 101.3% }			
D5_EtFOSAA_EIS	( 589.0 / 419.0 ) 952742	( 8.68 , N/A ) ( N/A , 0.01 , N/A )	109957.8	N/A	4.0226 [ 4.0000 ]	100.6% { 111.0% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 3563722	( 10.39 , N/A ) ( N/A , 0.02 , N/A )	1337.9	N/A	21.1742 [ 20.0000 ]	105.9% { 105.7% }			
D9_NEtFOSE_EIS	( 639.0 / 58.9 ) 4073064	( 10.56 , N/A ) ( N/A , 0.02 , N/A )	1946.3	N/A	20.5040 [ 20.0000 ]	102.5% { 98.0% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1973305	( 6.00 , N/A ) ( N/A , 0.00 , N/A )	3904.3	N/A	8.4209 [ 8.0000 ]	105.3% { 97.7% }			

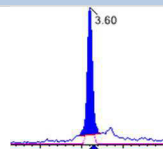
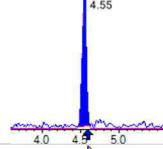
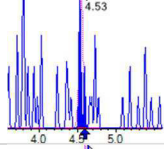
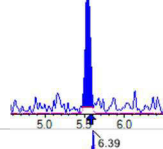
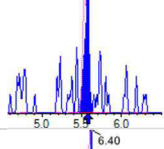
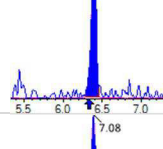
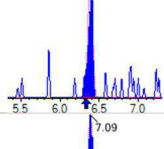
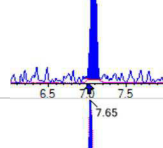
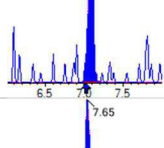
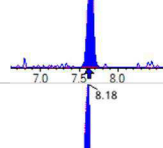
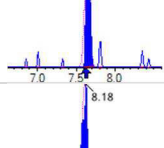
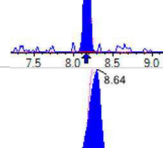
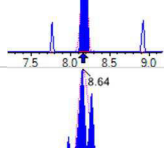
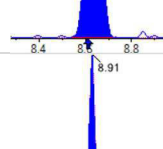
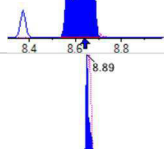
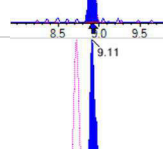
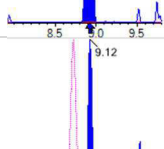
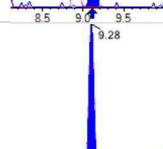
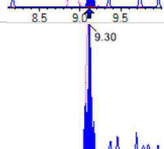
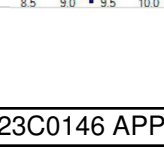
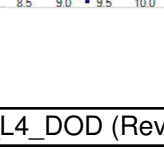
**LOW-CONCENTRATION CALIBRATION VERIFICATION****EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2310010**Laboratory ID:** SC01124-LCV1**Sequence:** SC01124**Standard ID:** 23C0282

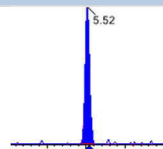
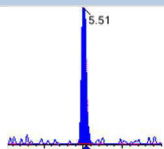
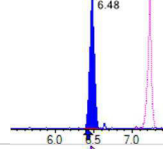
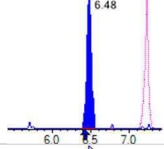
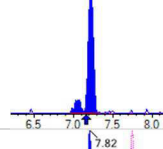
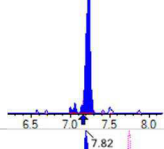
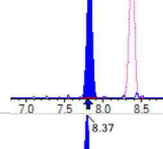
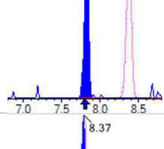
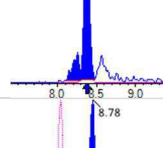
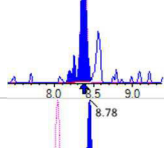
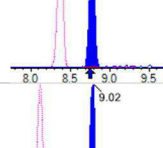
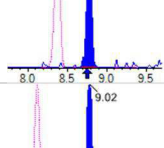
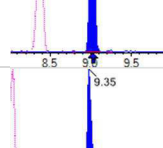
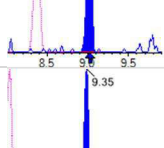
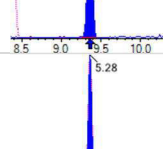
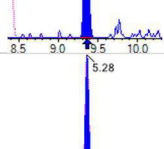
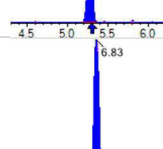
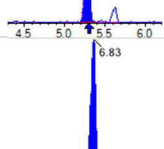
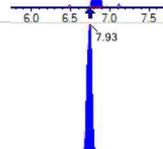
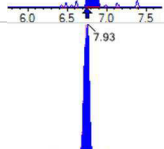
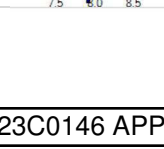
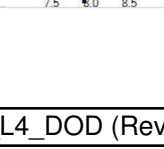
ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	0.400	0.450	12.6	30.00
PFPEA	0.200	0.200	0.06	30.00
PFHXA	0.100	0.112	11.6	30.00
PFHPA	0.100	0.0960	-4.0	30.00
PFOA	0.100	0.107	6.9	30.00
PFNA	0.100	0.109	8.9	30.00
PFDA	0.100	0.0996	-0.4	30.00
PFUnA	0.100	0.102	2.2	30.00
PFDOA	0.100	0.108	8.1	30.00
PFTRDA	0.100	0.0949	-5.1	30.00
PFTEDA	0.100	0.0985	-1.5	30.00
PFBS	0.0885	0.0968	9.4	30.00
PFPEs	0.0940	0.0939	-0.07	30.00
PFHXS	0.0915	0.0749	-18.1	30.00
PFHPS	0.0955	0.0786	-17.7	30.00
PFOS	0.0930	0.0934	0.5	30.00
PFNS	0.0960	0.103	7.4	30.00
PFDS	0.0965	0.0866	-10.2	30.00
PFDOS	0.0970	0.0871	-10.2	30.00
4:2FTS	0.375	0.422	12.6	30.00
6:2FTS	0.380	0.363	-4.4	30.00
8:2FTS	0.384	0.398	3.6	30.00
PFOSA	0.100	0.107	6.9	30.00
NMeFOSA	0.400	0.440	9.9	30.00
NEtFOSA	0.400	0.424	6.1	30.00
NMeFOSAA	0.100	0.0948	-5.2	30.00
NEtFOSAA	0.100	0.109	9.2	30.00
NMeFOSE	0.400	0.439	9.6	30.00

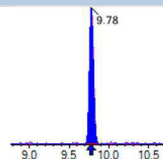
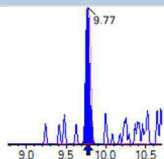
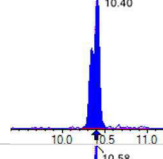
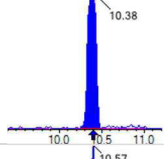
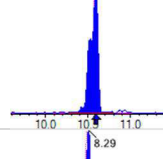
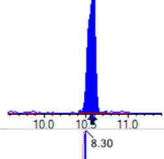
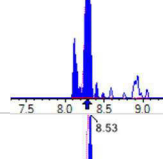
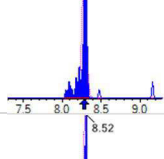
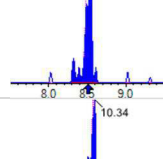
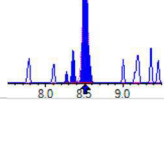
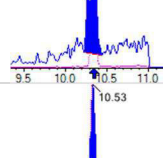
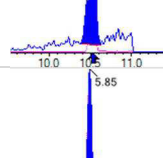
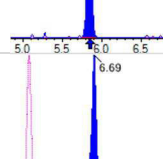
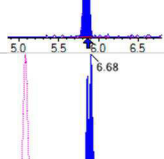
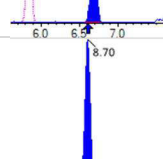
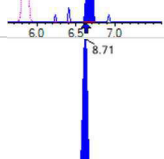
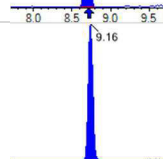
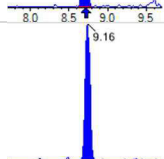
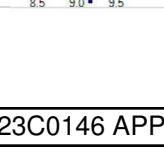
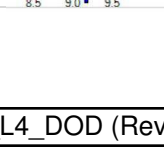
**LOW-CONCENTRATION CALIBRATION VERIFICATION****EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2310010**Laboratory ID:** SC01124-LCV1**Sequence:** SC01124**Standard ID:** 23C0282

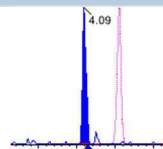
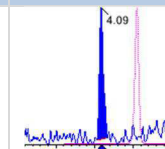
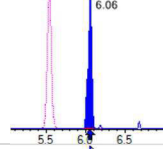
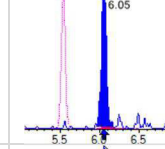
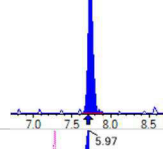
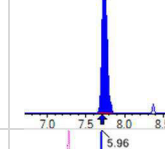
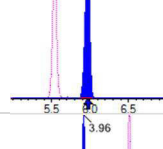
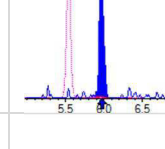
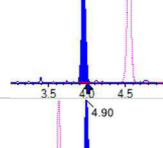
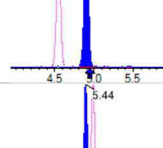
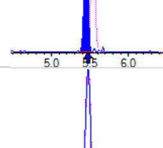
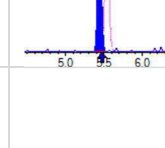
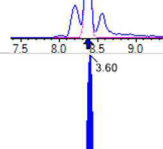
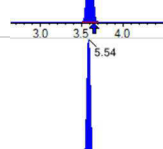
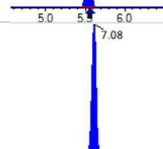
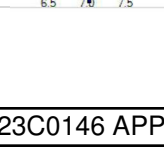
NEtFOSE	0.400	0.372	-7.0	30.00
HFPO-DA	0.200	0.241	20.3	30.00
ADONA	0.189	0.198	5.0	30.00
PFEESA	0.178	0.233	31.2 *	30.00
PFMPA	0.200	0.181	-9.7	30.00
PFMBA	0.200	0.172	-13.8	30.00
NFDHA	0.200	0.192	-3.9	30.00
9CL-PF3ONS	0.187	0.244	30.5 *	30.00
11CL-PF3OUDS	0.189	0.287	51.8 *	30.00
3:3FTCA	0.400	0.518	29.6	30.00
5:3FTCA	0.400	0.279	-30.3 *	30.00
7:3FTCA	0.400	0.480	19.9	30.00

\* Values outside of QC limits

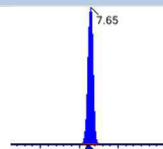
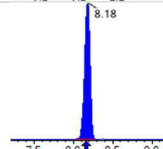
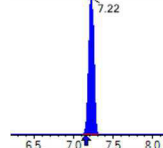
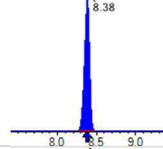
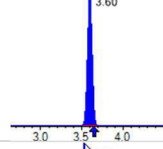
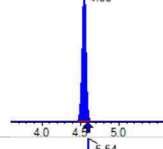
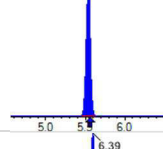
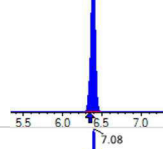
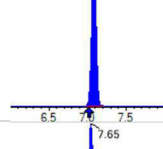
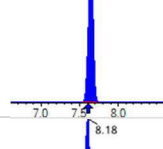
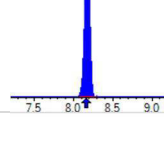
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 61025	(3.60, 1.00) (0.00, N/A, 0.0)	95.7	N/A 0.0 0.0	0.4504 [0.4000]	112.6%			
PFPeA	(263.0 / 219.0) 46884 (263.0 / 69.0) 353	(4.55, 1.00) (0.00, N/A, 1.3)	165.6 101.8	0.0075 66.5 66.7	0.2001 [0.2000]	100.1%			
PFHxA	(313.0 / 269.0) 31596 (313.0 / 119.0) 2305	(5.54, 1.00) (0.00, N/A, -2.1)	67.1 60.0	0.0729 69.3 85.0	0.1116 [0.1000]	111.6%			
PFHpA	(363.0 / 319.0) 26240 (363.0 / 169.0) 5895	(6.39, 1.00) (0.00, N/A, -0.5)	113.4 15607.3	0.2247 68.9 88.5	0.0960 [0.1000]	96.0%			
PFOA	(413.0 / 369.0) 37886 (413.0 / 169.0) 9101	(7.08, 1.00) (0.00, N/A, -0.4)	86.0 193.8	0.2402 68.9 78.7	0.1069 [0.1000]	106.9%			
PFNA	(463.0 / 419.0) 37353 (463.0 / 169.0) 8121	(7.65, 1.00) (0.00, N/A, 0.0)	453.0 658.1	0.2174 92.9 98.6	0.1089 [0.1000]	108.9%			
PFDA	(513.0 / 469.0) 42254 (513.0 / 169.0) 5341	(8.18, 1.00) (0.00, N/A, -0.1)	105.1 22784.2	0.1264 118.8 116.0	0.0996 [0.1000]	99.6%			
PFUnA	(563.0 / 519.0) 39449 (563.0 / 169.0) 5777	(8.64, 1.00) (0.01, N/A, 0.1)	170.7 47.9	0.1465 122.1 129.4	0.1022 [0.1000]	102.2%			
PFDoA	(613.0 / 569.0) 37499 (613.0 / 169.0) 9667	(8.91, 1.00) (0.00, N/A, 1.5)	241.6 547.3	0.2578 158.4 154.1	0.1081 [0.1000]	108.1%			IR2,
PFTrDA	(663.0 / 619.0) 31567 (663.0 / 169.0) 4537	(9.11, 1.02) (N/A, -0.01, -0.7)	152.0 511.2	0.1437 58.9 65.8	0.0949 [0.1000]	94.9%			
PFTeDA	(713.0 / 669.0) 34188 (713.0 / 169.0) 7235	(9.28, 1.00) (0.00, N/A, -0.9)	157.4 42.3	0.2116 110.7 111.3	0.0985 [0.1000]	98.5%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 45603 (299.0 / 99.0) 27609	(5.52, 1.00) (0.00, N/A, 0.4)	11861.9 7863.0	0.6054 103.2 92.6	0.0968 [0.0885]	109.4%			
PFPeS	(349.0 / 80.0) 86493 (349.0 / 99.0) 33289	(6.48, 0.90) (N/A, 0.05, 0.0)	2755141.6 71279.2	0.3849 112.6 116.0	0.0939 [0.0938]	100.1%			
PFHxS	(399.0 / 80.0) 62753 (399.0 / 99.0) 20528	(7.22, 1.00) (-0.01, N/A, -0.5)	421.5 5152.5	0.3271 95.4 93.8	0.0749 [0.0911]	82.2%			
PFHpS	(449.0 / 80.0) 80440 (449.0 / 99.0) 24248	(7.82, 0.93) (N/A, 0.02, 0.0)	2798029.8 4991.3	0.3014 106.1 108.5	0.0786 [0.0951]	82.6%			
PFOS	(499.0 / 80.0) 118848 (499.0 / 99.0) 28320	(8.37, 1.00) (0.00, N/A, 0.2)	70.7 81.4	0.2383 110.1 109.6	0.0934 [0.0927]	100.8%			
PFNS	(549.0 / 80.0) 124312 (549.0 / 99.0) 31975	(8.78, 1.05) (N/A, 0.00, -0.1)	584.9 729994.2	0.2572 112.2 113.0	0.1031 [0.0960]	107.4%			
PFDS	(599.0 / 80.0) 120710 (599.0 / 99.0) 26067	(9.02, 1.08) (N/A, 0.00, 0.1)	304.9 66.0	0.2159 95.4 97.0	0.0866 [0.0963]	89.9%			
PFDoS	(699.0 / 80.0) 97017 (699.0 / 99.0) 18257	(9.35, 1.12) (N/A, -0.01, -0.1)	384.0 103.7	0.1882 86.3 79.1	0.0871 [0.0970]	89.8%			
4:2FTS	(327.0 / 307.0) 85052 (327.0 / 81.0) 58305	(5.28, 1.00) (0.00, N/A, 0.0)	1125.1 324.9	0.6855 110.7 110.6	0.4223 [0.3738]	113.0%			
6:2FTS	(427.0 / 407.0) 47973 (427.0 / 81.0) 36126	(6.83, 1.00) (0.00, N/A, -0.3)	124917.6 212.6	0.7531 109.0 112.3	0.3631 [0.3796]	95.6%			
8:2FTS	(527.0 / 507.0) 60424 (527.0 / 81.0) 48823	(7.93, 1.00) (0.00, N/A, -0.1)	17365.3 419.5	0.8080 119.6 104.0	0.3976 [0.3833]	103.7%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 143262 (498.0 / 478.0) 3314	(9.78, 1.00) (0.00, N/A, 0.7)	513.9 29.0	0.0231 104.1 97.8	0.1069 [0.1000]	106.9%			
NMeFOSA	(512.0 / 219.0) 79344 (512.0 / 169.0) 68803	(10.40, 1.00) (0.00, N/A, 1.2)	403.0 371.6	0.8671 103.7 99.8	0.4397 [0.4000]	109.9%			
NEIFOSA	(526.0 / 219.0) 82501 (526.0 / 169.0) 101608	(10.58, 1.00) (0.00, N/A, 0.7)	605.7 524.9	1.2316 96.5 97.3	0.4243 [0.4000]	106.1%			
NMeFOSAA	(570.0 / 419.0) 21665 (570.0 / 483.0) 9176	(8.29, 1.00) (0.01, N/A, -0.1)	1710.3 171.7	0.4236 90.2 90.4	0.0948 [0.1000]	94.8%			
NEIFOSAA	(584.0 / 419.0) 17392 (584.0 / 526.0) 6838	(8.53, 1.00) (0.02, N/A, 0.9)	741408.3 11995.6	0.3932 61.6 67.0	0.1092 [0.1000]	109.2%			
NMeFOSE	(616.0 / 59.0) 39427	(10.34, 1.00) (0.01, N/A, 0.0)	60.1	N/A 0.0 0.0	0.4386 [0.4000]	109.6%			
NEtFOSE	(630.0 / 59.0) 40054	(10.53, 1.00) (0.01, N/A, 0.0)	81.6	N/A 0.0 0.0	0.3721 [0.4000]	93.0%			
HFPO-DA	(285.0 / 169.0) 31357 (285.0 / 185.0) 81776	(5.85, 1.00) (0.00, N/A, 0.3)	467.5 276.4	2.6079 96.9 106.7	0.2405 [0.2000]	120.3%			
ADONA	(377.0 / 85.0) 101691 (377.0 / 251.0) 9548	(6.69, 1.14) (N/A, 0.08, 0.8)	1053.1 3752.0	0.0939 97.2 93.3	0.1984 [0.1885]	105.2%			
9CI-Pf3ONS	(531.0 / 351.0) 337144 (533.0 / 353.0) 92086	(8.70, 1.49) (N/A, 0.00, -0.3)	617.8 355.4	0.2731 85.6 88.2	0.2440 [0.1867]	130.7%			CV2,
11CI-PF3OUDS	(631.0 / 451.0) 210837 (633.0 / 453.0) 73647	(9.16, 1.57) (N/A, 0.00, -0.1)	634.3 422.1	0.3493 104.9 96.5	0.2870 [0.1886]	152.1%			CV2,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 3655 (241.0 / 117.0) 4191	(4.09, 0.90) (N/A, -0.05, 0.4)	243.3 40.9	1.1468 56.3 86.8	0.5182 [0.4000]	129.6%			
5:3FTCA	(341.0 / 236.7) 13470 (341.0 / 217.0) 26706	(6.06, 1.09) (N/A, 0.01, 0.2)	1089911.5 108.0	1.9826 120.4 123.9	0.2786 [0.4000]	69.7%			CV1,
7:3FTCA	(441.0 / 317.0) 38917 (441.0 / 337.0) 28220	(7.74, 1.40) (N/A, 0.03, 0.1)	299.8 185.2	0.7251 84.6 80.8	0.4797 [0.4000]	119.9%			
PFEESA	(315.0 / 135.0) 82458 (315.0 / 83.0) 17951	(5.97, 1.08) (N/A, 0.00, 0.2)	338.8 106.6	0.2177 84.0 85.8	0.2335 [0.1785]	130.8%			CV2,
PFMPA	(229.0 / 85.0) 10891	(3.96, 0.87) (N/A, -0.05, 0.0)	395.4	N/A 0.0 0.0	0.1806 [0.2000]	90.3%			
PFMBA	(279.0 / 85.0) 33200	(4.90, 1.08) (N/A, -0.03, 0.0)	527.4	N/A 0.0 0.0	0.1724 [0.2000]	86.2%			
NFDHA	(295.0 / 201.0) 30867 (295.0 / 85.0) 30075	(5.44, 0.98) (N/A, -0.03, 0.4)	423.0 520.1	0.9743 97.0 107.2	0.1923 [0.2000]	96.1%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [0.1000]	N/A%			CV2,
13C3_PFBA_IIS	(216.0 / 172.0) 152146	(3.60, N/A) (N/A, -0.05, N/A)	1862.6	N/A	0.7103 [1.0000]	71.0% {104.2%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 188353	(5.54, N/A) (N/A, -0.02, N/A)	3208.1	N/A	0.5997 [1.0000]	60.0% {92.5%}			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 359523	(7.08, N/A) (N/A, 0.07, N/A)	6564.7	N/A	0.7785 [1.0000]	77.8% {93.1%}			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 385450	(7.65, N/A) (N/A, 0.03, N/A)	9842.3	N/A	0.9236 [ 1.0000 ]	92.4% { 97.1% }			
13C2_PFDA_IIS	(515.0 / 470.1) 369636	(8.18, N/A) (N/A, 0.02, N/A)	2297.6	N/A	0.9204 [ 1.0000 ]	92.0% { 100.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 484978	(7.22, N/A) (N/A, 0.06, N/A)	2941.5	N/A	0.7143 [ 1.0000 ]	71.4% { 106.3% }			
13C4_PFOS_IIS	(503.0 / 79.9) 969403	(8.38, N/A) (N/A, 0.01, N/A)	1942.0	N/A	1.1298 [ 1.0000 ]	113.0% { 110.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1312530	(3.60, N/A) (N/A, -0.05, N/A)	7508.9	N/A	7.2490 [ 8.0000 ]	90.6% { 88.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1065336	(4.55, N/A) (N/A, -0.04, N/A)	3790.0	N/A	4.8962 [ 4.0000 ]	122.4% { 91.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 637092	(5.54, N/A) (N/A, -0.02, N/A)	3137.1	N/A	2.4267 [ 2.0000 ]	121.3% { 83.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 648039	(6.39, N/A) (N/A, 0.05, N/A)	2936.3	N/A	2.5913 [ 2.0000 ]	129.6% { 86.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 781021	(7.08, N/A) (N/A, 0.07, N/A)	1909.5	N/A	1.9996 [ 2.0000 ]	100.0% { 82.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 396443	(7.65, N/A) (N/A, 0.03, N/A)	2381.2	N/A	0.9680 [ 1.0000 ]	96.8% { 87.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 449909	(8.18, N/A) (N/A, 0.01, N/A)	1918.2	N/A	1.0113 [ 1.0000 ]	101.1% { 89.7% }			

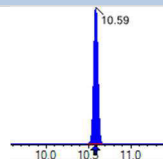
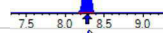
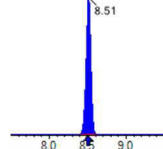
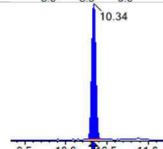
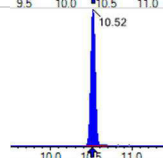
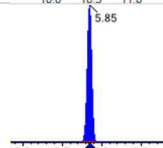


Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-LCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (2)  
 Acquired: 2023/03/21 - 14:10

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 483435	(8.63, N/A) (N/A, 0.00, N/A)	1328.1	N/A	0.9747 [ 1.0000 ]	97.5% { 91.1% }			
13C2_PFDa_EIS	(615.0 / 570.0) 412481	(8.92, N/A) (N/A, -0.01, N/A)	1195.7	N/A	0.9513 [ 1.0000 ]	95.1% { 89.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 406540	(9.28, N/A) (N/A, 0.00, N/A)	1067.7	N/A	0.8890 [ 1.0000 ]	88.9% { 105.6% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1459306	(5.52, N/A) (N/A, -0.02, N/A)	3501.8	N/A	1.8993 [ 2.0000 ]	95.0% { 87.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1116685	(7.23, N/A) (N/A, 0.09, N/A)	2765.1	N/A	2.2380 [ 2.0000 ]	111.9% { 85.2% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2254721	(8.38, N/A) (N/A, 0.01, N/A)	3041.5	N/A	1.7348 [ 2.0000 ]	86.7% { 84.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 276185	(5.28, N/A) (N/A, -0.03, N/A)	1783.4	N/A	5.6670 [ 4.0000 ]	141.7% { 94.8% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 367904	(6.83, N/A) (N/A, 0.09, N/A)	1712.5	N/A	5.7497 [ 4.0000 ]	143.7% { 96.0% }			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 454061	(7.92, N/A) (N/A, 0.02, N/A)	3469.0	N/A	6.5502 [ 4.0000 ]	163.8% { 96.1% }			S2,
13C8_PFOsa_EIS	(506.0 / 78.0) 3229562	(9.78, N/A) (N/A, 0.00, N/A)	5524.8	N/A	1.4527 [ 2.0000 ]	72.6% { 82.9% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 438903	(10.41, N/A) (N/A, 0.01, N/A)	1815.6	N/A	0.7716 [ 2.0000 ]	38.6% { 70.0% }			S1,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT- CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 408477	(10.59, N/A) (N/A, 0.00, N/A)	2370.7	N/A	0.7890 [ 2.0000 ]	39.4% { 73.4% }			S1,
D3_MeFOSAA_EIS	(573.0 / 419.0) 887540	(8.28, N/A) (N/A, 0.01, N/A)	2256.9	N/A	3.9933 [ 4.0000 ]	99.8% { 91.5% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 760467	(8.51, N/A) (N/A, 0.01, N/A)	9766.6	N/A	3.0530 [ 4.0000 ]	76.3% { 91.5% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1815424	(10.34, N/A) (N/A, 0.00, N/A)	1009.7	N/A	10.2566 [ 20.0000 ]	51.3% { 71.6% }			S1,
D9_NEiFOSE_EIS	(639.0 / 58.9) 2227171	(10.52, N/A) (N/A, 0.01, N/A)	1286.2	N/A	10.6609 [ 20.0000 ]	53.3% { 71.1% }			S1,
13C3_HFPODA_EIS	(287.0 / 169.0) 1311920	(5.85, N/A) (N/A, -0.01, N/A)	3501.9	N/A	9.0490 [ 8.0000 ]	113.1% { 83.7% }			

# INITIAL AND CONTINUING CALIBRATION CHECK

## EPA 1633

Laboratory: APPL, LLC  
 Client: AECOM  
 Instrument ID: Saphira  
 Standard ID: 23B0095

Work Order: 23C0146  
 Project: Red Hill AFFF Assessment Sampling  
 Calibration: 2310010  
 Sequence: SC01124

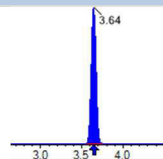
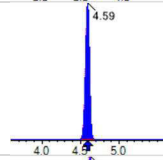
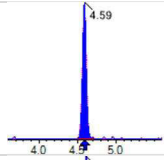
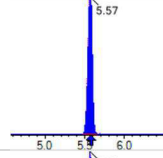
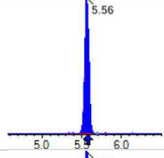
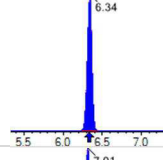
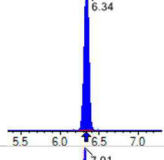
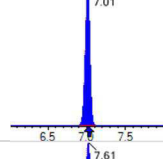
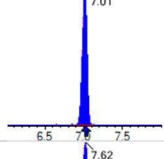
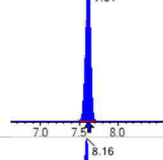
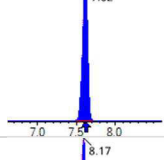
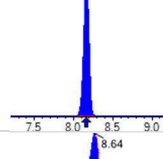
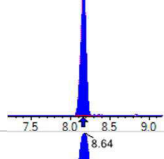
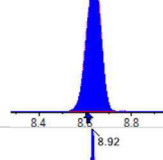
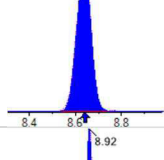
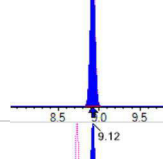
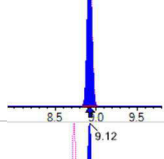
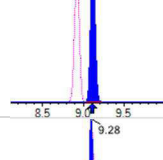
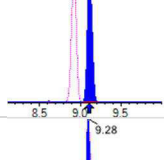
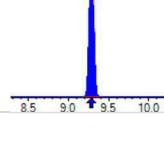
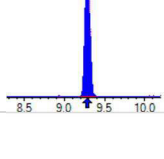
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01124-CCV1	PFBA	20.0	19.6	98.2	ng/mL	+/- 30.00%
	PFPEA	10.0	10.4	104	ng/mL	+/- 30.00%
	PFHXA	5.00	5.48	110	ng/mL	+/- 30.00%
	PFHPA	5.00	5.23	105	ng/mL	+/- 30.00%
	PFOA	5.00	4.57	91.4	ng/mL	+/- 30.00%
	PFNA	5.00	4.70	94.0	ng/mL	+/- 30.00%
	PFDA	5.00	4.78	95.6	ng/mL	+/- 30.00%
	PFUnA	5.00	5.09	102	ng/mL	+/- 30.00%
	PFDOA	5.00	4.93	98.6	ng/mL	+/- 30.00%
	PFTRDA	5.00	4.75	95.0	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.69	93.8	ng/mL	+/- 30.00%
	PFBS	4.42	4.30	97.4	ng/mL	+/- 30.00%
	PFPEs	4.70	4.64	98.8	ng/mL	+/- 30.00%
	PFHXS	4.58	3.48	76.0	ng/mL	+/- 30.00%
	PFHPS	4.78	3.64	76.1	ng/mL	+/- 30.00%
	PFOS	4.65	3.91	84.1	ng/mL	+/- 30.00%
	PFNS	4.80	4.58	95.5	ng/mL	+/- 30.00%
	PFDS	4.82	4.39	91.0	ng/mL	+/- 30.00%
	<b>PFDOS</b>	<b>4.85</b>	<b>3.34</b>	<b>68.8</b>	<b>ng/mL</b>	+/- 30.00%
	4:2FTS	18.8	19.6	104	ng/mL	+/- 30.00%
	6:2FTS	19.0	19.3	102	ng/mL	+/- 30.00%
	8:2FTS	19.2	19.2	100	ng/mL	+/- 30.00%
	PFOSA	5.00	4.92	98.3	ng/mL	+/- 30.00%
	NMeFOSA	20.0	18.3	91.4	ng/mL	+/- 30.00%
	NEtFOSA	20.0	18.8	93.9	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	4.01	80.2	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	4.71	94.1	ng/mL	+/- 30.00%
	NMeFOSE	20.0	18.6	93.1	ng/mL	+/- 30.00%
	NEtFOSE	20.0	18.1	90.5	ng/mL	+/- 30.00%
	HFPO-DA	10.0	11.9	119	ng/mL	+/- 30.00%

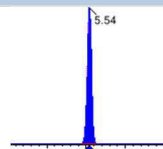
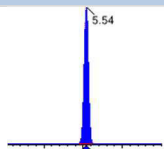
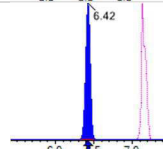
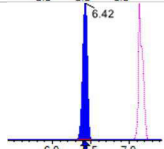
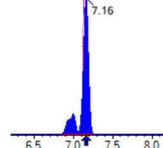
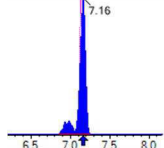
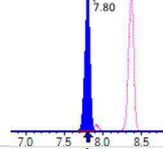
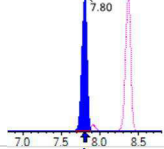
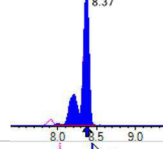
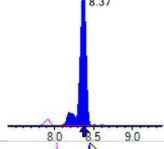
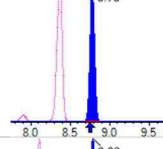
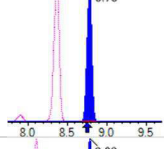
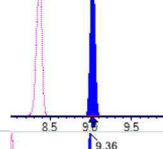
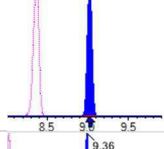
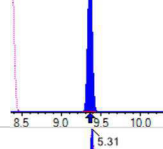
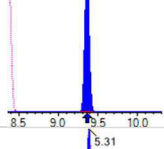
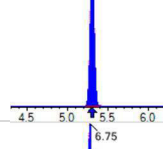
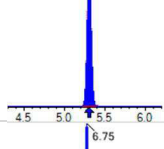
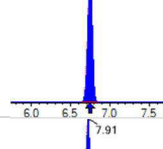
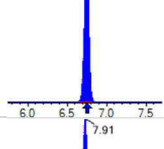
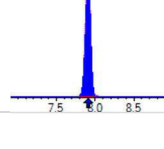
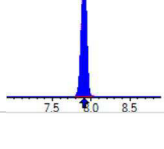
# INITIAL AND CONTINUING CALIBRATION CHECK

## EPA 1633

Laboratory:	APPL, LLC	Work Order:	23C0146
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2310010
Standard ID:	23B0095	Sequence:	SC01124

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01124-CCV1	ADONA	9.45	9.36	99.1	ng/mL	+/- 30.00%
	PFEESA	8.90	9.42	106	ng/mL	+/- 30.00%
	PFMPA	10.0	9.45	94.5	ng/mL	+/- 30.00%
	PFMBA	10.0	9.84	98.4	ng/mL	+/- 30.00%
	NFDHA	10.0	9.62	96.2	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	11.6	125	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	11.9	126	ng/mL	+/- 30.00%
	3:3FTCA	20.0	22.2	111	ng/mL	+/- 30.00%
	5:3FTCA	20.0	16.4	82.2	ng/mL	+/- 30.00%
	7:3FTCA	20.0	18.1	90.3	ng/mL	+/- 30.00%

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 3011890	(3.64, 1.00) (0.00, N/A, 0.0)	301.2	N/A 0.0 0.0	19.6479 [ 20.0000 ]	98.2%			
PFPeA	(263.0 / 219.0) 2676821 (263.0 / 69.0) 30246	(4.59, 1.00) (0.00, N/A, 0.2)	3219.4 494.7	0.0113 99.8 100.0	10.3966 [ 10.0000 ]	104.0%			
PFHxA	(313.0 / 269.0) 1852695 (313.0 / 119.0) 158992	(5.57, 1.00) (0.01, N/A, 0.3)	1930.2 2314.3	0.0858 81.5 100.0	5.4774 [ 5.0000 ]	109.5%			
PFHpA	(363.0 / 319.0) 1662835 (363.0 / 169.0) 422369	(6.34, 1.00) (0.00, N/A, 0.1)	3645.0 60223.7	0.2540 77.9 100.0	5.2300 [ 5.0000 ]	104.6%			
PFOA	(413.0 / 369.0) 1961747 (413.0 / 169.0) 598696	(7.01, 1.00) (0.00, N/A, -0.1)	2411.1 2429.1	0.3052 87.6 100.0	4.5713 [ 5.0000 ]	91.4%			
PFNA	(463.0 / 419.0) 1848460 (463.0 / 169.0) 407391	(7.61, 1.00) (0.00, N/A, -0.1)	9615.9 3032.8	0.2204 94.1 100.0	4.7013 [ 5.0000 ]	94.0%			
PFDA	(513.0 / 469.0) 2262807 (513.0 / 169.0) 246513	(8.16, 1.00) (0.00, N/A, -0.1)	2242.2 796.6	0.1089 102.4 100.0	4.7799 [ 5.0000 ]	95.6%			
PFUnA	(563.0 / 519.0) 2156645 (563.0 / 169.0) 244034	(8.64, 1.00) (0.00, N/A, 0.0)	2877.9 1149.7	0.1132 94.4 100.0	5.0866 [ 5.0000 ]	101.7%			
PFDoA	(613.0 / 569.0) 1922431 (613.0 / 169.0) 321512	(8.92, 1.00) (0.00, N/A, 0.2)	2954.7 47428.6	0.1672 102.8 100.0	4.9310 [ 5.0000 ]	98.6%			
PFTrDA	(663.0 / 619.0) 1775025 (663.0 / 169.0) 387985	(9.12, 1.02) (N/A, 0.00, 0.1)	4811.9 1292.5	0.2186 89.6 100.0	4.7475 [ 5.0000 ]	95.0%			
PFTeDA	(713.0 / 669.0) 1541602 (713.0 / 169.0) 293165	(9.28, 1.00) (0.00, N/A, 0.1)	2378.9 1151.8	0.1902 99.5 100.0	4.6901 [ 5.0000 ]	93.8%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 2330777 (299.0 / 99.0) 1523579	(5.54, 1.00) (0.00, N/A, 0.2)	9623.7 10057.5	0.6537 111.4 100.0	4.3042 [ 4.4237 ]	97.3%			
PFPeS	(349.0 / 80.0) 5020219 (349.0 / 99.0) 1665112	(6.42, 0.90) (N/A, 0.00, -0.1)	3056812.3 8989.3	0.3317 97.1 100.0	4.6445 [ 4.6919 ]	99.0%			
PFHxS	(399.0 / 80.0) 3423655 (399.0 / 99.0) 1194319	(7.16, 1.00) (0.02, N/A, 0.0)	19760.7 1867.7	0.3488 101.8 100.0	3.4818 [ 4.5549 ]	76.4%			
PFHpS	(449.0 / 80.0) 4408791 (449.0 / 99.0) 1225264	(7.80, 0.93) (N/A, 0.00, 0.0)	35199.9 4115.9	0.2779 97.8 100.0	3.6374 [ 4.7570 ]	76.5%			
PFOS	(499.0 / 80.0) 5889906 (499.0 / 99.0) 1280621	(8.37, 1.00) (0.00, N/A, 0.1)	1786.7 882.8	0.2174 100.5 100.0	3.9097 [ 4.6375 ]	84.3%			
PFNS	(549.0 / 80.0) 6546343 (549.0 / 99.0) 1490537	(8.78, 1.05) (N/A, 0.00, -0.2)	21352.7 25744977.4	0.2277 99.3 100.0	4.5822 [ 4.7994 ]	95.5%			
PFDS	(599.0 / 80.0) 7240524 (599.0 / 99.0) 1611791	(9.02, 1.08) (N/A, 0.00, 0.0)	2032.1 1706.5	0.2226 98.3 100.0	4.3869 [ 4.8155 ]	91.1%			
PFDoS	(699.0 / 80.0) 4402937 (699.0 / 99.0) 1047823	(9.36, 1.12) (N/A, 0.00, 0.0)	3790.8 2202.2	0.2380 109.2 100.0	3.3373 [ 4.8478 ]	68.8%			CV1,
4:2FTS	(327.0 / 307.0) 4163060 (327.0 / 81.0) 2579461	(5.31, 1.00) (0.00, N/A, 0.0)	5051.1 5282.3	0.6196 100.1 100.0	19.5909 [ 18.6906 ]	104.8%			
6:2FTS	(427.0 / 407.0) 2659851 (427.0 / 81.0) 1784208	(6.75, 1.00) (0.00, N/A, 0.1)	3979.8 3154.8	0.6708 97.1 100.0	19.3260 [ 18.9808 ]	101.8%			
8:2FTS	(527.0 / 507.0) 3041657 (527.0 / 81.0) 2364116	(7.91, 1.00) (0.00, N/A, 0.0)	2865.4 2598.1	0.7772 115.1 100.0	19.2293 [ 19.1658 ]	100.3%			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (3)  
 Acquired: 2023/03/21 - 14:23

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 7952486 (498.0 / 478.0) 188199	(9.78, 1.00) (0.00, N/A, 0.2)	4913.6 865.7	0.0237 106.5 100.0	4.9175 [ 5.0000 ]	98.3%			
NMeFOSA	(512.0 / 219.0) 4710882 (512.0 / 169.0) 4094488	(10.40, 1.00) (0.00, N/A, 1.1)	4195.8 5487.6	0.8692 103.9 100.0	18.2834 [ 20.0000 ]	91.4%			
NEIFOSA	(526.0 / 219.0) 4975838 (526.0 / 169.0) 6296327	(10.58, 1.00) (-0.01, N/A, 0.9)	8500.9 8197.4	1.2654 99.1 100.0	18.7806 [ 20.0000 ]	93.9%			
NMeFOSAA	(570.0 / 419.0) 1001884 (570.0 / 483.0) 469186	(8.28, 1.00) (0.00, N/A, 0.3)	2185.2 1102.9	0.4683 99.7 100.0	4.0095 [ 5.0000 ]	80.2%			
NEIFOSAA	(584.0 / 419.0) 819632 (584.0 / 526.0) 481227	(8.51, 1.00) (0.01, N/A, 0.1)	2597.2 7227.6	0.5871 92.0 100.0	4.7075 [ 5.0000 ]	94.1%			
NMeFOSE	(616.0 / 59.0) 2338477	(10.34, 1.00) (0.01, N/A, 0.0)	1587.8	N/A 0.0 0.0	18.6185 [ 20.0000 ]	93.1%			
NEtFOSE	(630.0 / 59.0) 2738163	(10.53, 1.00) (0.01, N/A, 0.0)	1348.3	N/A 0.0 0.0	18.0991 [ 20.0000 ]	90.5%			
HFPO-DA	(285.0 / 169.0) 1854941 (285.0 / 185.0) 4534550	(5.86, 1.00) (0.00, N/A, 0.0)	2753.4 5740.5	2.4446 90.8 100.0	11.9046 [ 10.0000 ]	119.0%			
ADONA	(377.0 / 85.0) 5734802 (377.0 / 251.0) 576808	(6.61, 1.13) (N/A, 0.00, -0.2)	4374.0 1522.5	0.1006 104.1 100.0	9.3618 [ 9.4270 ]	99.3%			
9CI-Pf3ONS	(531.0 / 351.0) 19226752 (533.0 / 353.0) 5955833	(8.70, 1.49) (N/A, 0.00, 0.0)	2839.1 3192.2	0.3098 97.1 100.0	11.6440 [ 9.3325 ]	124.8%			
11CI-PF3OUDS	(631.0 / 451.0) 11573776 (633.0 / 453.0) 4191605	(9.17, 1.57) (N/A, 0.00, 0.0)	4564.7 4454.5	0.3622 108.8 100.0	11.8739 [ 9.4321 ]	125.9%			





Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (3)  
 Acquired: 2023/03/21 - 14:23

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 172105 (241.0 / 117.0) 227325	(4.14, 0.90) (N/A, 0.00, 0.1)	1992.4 1330.5	1.3209 64.8 100.0	22.2038 [ 20.0000 ]	111.0%			
5:3FTCA	(341.0 / 236.7) 949697 (341.0 / 217.0) 1520053	(6.05, 1.09) (N/A, 0.00, 0.1)	1609.8 2023.9	1.6006 97.2 100.0	16.4473 [ 20.0000 ]	82.2%			
7:3FTCA	(441.0 / 317.0) 1750445 (441.0 / 337.0) 1571179	(7.71, 1.39) (N/A, 0.00, 0.0)	2082.9 1785.2	0.8976 104.8 100.0	18.0624 [ 20.0000 ]	90.3%			
PFEESA	(315.0 / 135.0) 3972065 (315.0 / 83.0) 1008245	(5.97, 1.07) (N/A, 0.00, 0.0)	2606.6 2017.4	0.2538 98.0 100.0	9.4152 [ 8.9246 ]	105.5%			
PFMPA	(229.0 / 85.0) 626636	(4.00, 0.87) (N/A, 0.00, 0.0)	4093.3	N/A 0.0 0.0	9.4547 [ 10.0000 ]	94.5%			
PFMBA	(279.0 / 85.0) 2083749	(4.94, 1.08) (N/A, 0.00, 0.0)	4701.8	N/A 0.0 0.0	9.8437 [ 10.0000 ]	98.4%			
NFDHA	(295.0 / 201.0) 1845624 (295.0 / 85.0) 1676744	(5.47, 0.98) (N/A, 0.00, 0.0)	5227.9 3827.0	0.9085 90.5 100.0	9.6240 [ 10.0000 ]	96.2%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [ 5.0000 ]	N/A%			CV2,
13C3_PFBa_IIS	(216.0 / 172.0) 146008	(3.64, N/A) (N/A, 0.00, N/A)	1275.4	N/A	0.6816 [ 1.0000 ]	68.2% { 100.0% }			IS1,
13C2_PFHxA_IIS	(315.0 / 270.0) 203588	(5.56, N/A) (N/A, 0.00, N/A)	2180.7	N/A	0.6482 [ 1.0000 ]	64.8% { 100.0% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 386126	(7.01, N/A) (N/A, 0.00, N/A)	2185.6	N/A	0.8361 [ 1.0000 ]	83.6% { 100.0% }			

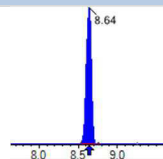
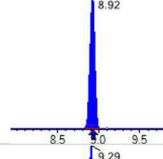
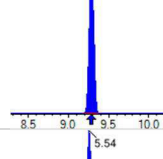
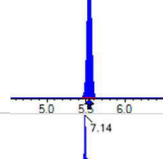
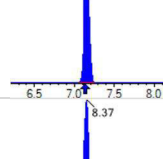
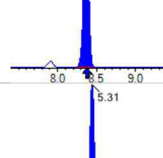
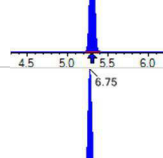
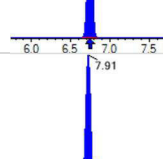
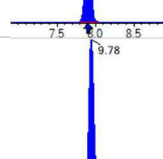
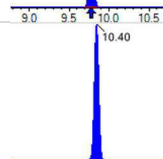
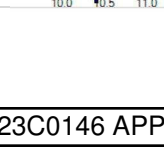


Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (3)  
 Acquired: 2023/03/21 - 14:23

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 396999	(7.61, N/A) (N/A, 0.00, N/A)	13812.8	N/A	0.9513 [ 1.0000 ]	95.1% { 100.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 366952	(8.16, N/A) (N/A, 0.00, N/A)	3767933.3	N/A	0.9137 [ 1.0000 ]	91.4% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 456334	(7.16, N/A) (N/A, 0.00, N/A)	1696.7	N/A	0.6721 [ 1.0000 ]	67.2% { 100.0% }			IS1,
13C4_PFOS_IIS	(503.0 / 79.9) 877666	(8.37, N/A) (N/A, 0.00, N/A)	1277.8	N/A	1.0228 [ 1.0000 ]	102.3% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1485044	(3.64, N/A) (N/A, 0.00, N/A)	6046.6	N/A	8.5465 [ 8.0000 ]	106.8% { 100.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1170854	(4.59, N/A) (N/A, 0.00, N/A)	3540.6	N/A	4.9784 [ 4.0000 ]	124.5% { 100.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 760979	(5.56, N/A) (N/A, 0.00, N/A)	3203.0	N/A	2.6817 [ 2.0000 ]	134.1% { 100.0% }			S2,
13C4_PFHpA_EIS	(367.0 / 322.0) 753644	(6.34, N/A) (N/A, 0.00, N/A)	3200.8	N/A	2.7880 [ 2.0000 ]	139.4% { 100.0% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 945594	(7.01, N/A) (N/A, 0.00, N/A)	2649.4	N/A	2.2541 [ 2.0000 ]	112.7% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 454360	(7.61, N/A) (N/A, 0.00, N/A)	2020.6	N/A	1.0771 [ 1.0000 ]	107.7% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 501834	(8.16, N/A) (N/A, 0.00, N/A)	5253225.2	N/A	1.1363 [ 1.0000 ]	113.6% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 530851	(8.64, N/A) (N/A, 0.00, N/A)	1647.6	N/A	1.0781 [ 1.0000 ]	107.8% { 100.0% }			
13C2_PFDa_EIS	(615.0 / 570.0) 463441	(8.92, N/A) (N/A, 0.00, N/A)	1429.4	N/A	1.0767 [ 1.0000 ]	107.7% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 384987	(9.29, N/A) (N/A, 0.00, N/A)	1532.7	N/A	0.8480 [ 1.0000 ]	84.8% { 100.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1677765	(5.54, N/A) (N/A, 0.00, N/A)	4050.5	N/A	2.3207 [ 2.0000 ]	116.0% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1310866	(7.14, N/A) (N/A, 0.00, N/A)	2361.5	N/A	2.7920 [ 2.0000 ]	139.6% { 100.0% }			S2,
13C8_PFOS_EIS	(507.0 / 80.0) 2670724	(8.37, N/A) (N/A, 0.00, N/A)	1237.6	N/A	2.2696 [ 2.0000 ]	113.5% { 100.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 291420	(5.31, N/A) (N/A, 0.00, N/A)	1990.9	N/A	6.3549 [ 4.0000 ]	158.9% { 100.0% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 383248	(6.75, N/A) (N/A, 0.00, N/A)	57339.2	N/A	6.3655 [ 4.0000 ]	159.1% { 100.0% }			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 472664	(7.91, N/A) (N/A, 0.00, N/A)	1327.1	N/A	7.2466 [ 4.0000 ]	181.2% { 100.0% }			S2,
13C8_PFOsa_EIS	(506.0 / 78.0) 3897108	(9.78, N/A) (N/A, 0.00, N/A)	4235.5	N/A	1.9362 [ 2.0000 ]	96.8% { 100.0% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 626711	(10.40, N/A) (N/A, 0.00, N/A)	1797.1	N/A	1.2170 [ 2.0000 ]	60.8% { 100.0% }			S1,



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCV1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (3)  
 Acquired: 2023/03/21 - 14:23

Analyte	( Q1 / Q3 ) Area Counts*min	R.T. ( R.T [min], R.R.T. ) ( ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	( 531.0 / 169.0 ) 556639	( 10.58 , N/A ) ( N/A , 0.00 , N/A )	2218.2	N/A	1.1875 [ 2.0000 ]	59.4% { 100.0% }			S1,
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 970486	( 8.27 , N/A ) ( N/A , 0.00 , N/A )	2239.5	N/A	4.8229 [ 4.0000 ]	120.6% { 100.0% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 831237	( 8.50 , N/A ) ( N/A , 0.00 , N/A )	5718.4	N/A	3.6860 [ 4.0000 ]	92.1% { 100.0% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 2536361	( 10.33 , N/A ) ( N/A , 0.00 , N/A )	818.2	N/A	15.8275 [ 20.0000 ]	79.1% { 100.0% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 3130406	( 10.51 , N/A ) ( N/A , 0.00 , N/A )	1793.4	N/A	16.5507 [ 20.0000 ]	82.8% { 100.0% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1568024	( 5.86 , N/A ) ( N/A , 0.00 , N/A )	3335.0	N/A	10.0061 [ 8.0000 ]	125.1% { 100.0% }			

# INITIAL AND CONTINUING CALIBRATION CHECK

## EPA 1633

Laboratory: APPL, LLC  
 Client: AECOM  
 Instrument ID: Saphira  
 Standard ID: 23B0095

Work Order: 23C0146  
 Project: Red Hill AFFF Assessment Sampling  
 Calibration: 2310010  
 Sequence: SC01124

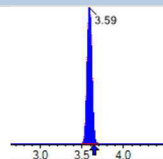
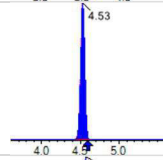
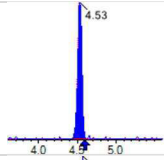
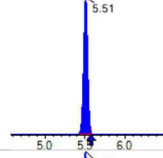
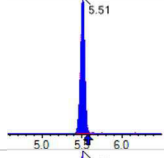
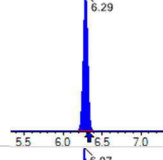
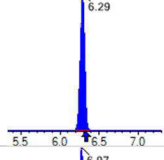
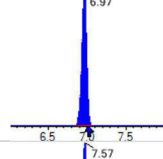
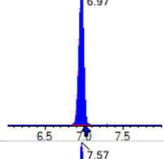
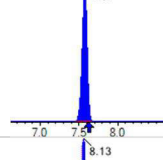
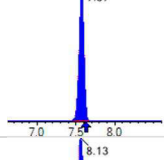
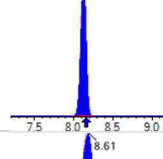
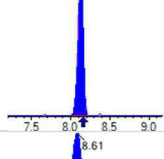
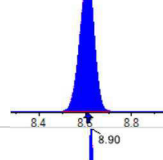
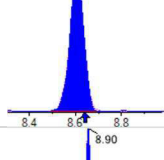
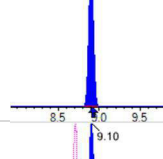
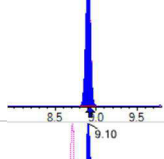
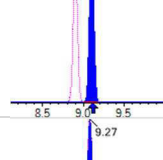
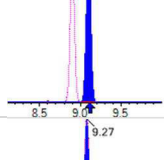
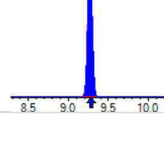
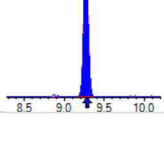
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01124-CCV2	PFBA	20.0	19.8	98.8	ng/mL	+/- 30.00%
	PFPEA	10.0	9.04	90.4	ng/mL	+/- 30.00%
	PFHXA	5.00	4.51	90.3	ng/mL	+/- 30.00%
	PFHPA	5.00	4.59	91.8	ng/mL	+/- 30.00%
	PFOA	5.00	4.82	96.4	ng/mL	+/- 30.00%
	PFNA	5.00	4.93	98.7	ng/mL	+/- 30.00%
	PFDA	5.00	4.84	96.9	ng/mL	+/- 30.00%
	PFUnA	5.00	5.13	103	ng/mL	+/- 30.00%
	PFDOA	5.00	4.89	97.9	ng/mL	+/- 30.00%
	PFTRDA	5.00	4.96	99.2	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.55	91.0	ng/mL	+/- 30.00%
	PFBS	4.42	4.80	109	ng/mL	+/- 30.00%
	<b>PFPEB</b>	<b>4.70</b>	<b>6.39</b>	<b>136</b>	<b>ng/mL</b>	+/- 30.00%
	PFHXS	4.58	4.64	101	ng/mL	+/- 30.00%
	PFHPS	4.78	3.91	81.7	ng/mL	+/- 30.00%
	PFOS	4.65	4.12	88.5	ng/mL	+/- 30.00%
	PFNS	4.80	4.32	90.0	ng/mL	+/- 30.00%
	PFDS	4.82	4.32	89.6	ng/mL	+/- 30.00%
	PFDOS	4.85	3.54	73.1	ng/mL	+/- 30.00%
	4:2FTS	18.8	19.6	104	ng/mL	+/- 30.00%
	6:2FTS	19.0	18.7	98.6	ng/mL	+/- 30.00%
	8:2FTS	19.2	18.1	94.5	ng/mL	+/- 30.00%
	PFOSA	5.00	4.72	94.5	ng/mL	+/- 30.00%
	NMeFOSA	20.0	18.4	92.0	ng/mL	+/- 30.00%
	NEtFOSA	20.0	18.5	92.4	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	3.55	71.0	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	4.70	94.1	ng/mL	+/- 30.00%
	NMeFOSE	20.0	18.3	91.4	ng/mL	+/- 30.00%
	NEtFOSE	20.0	18.1	90.4	ng/mL	+/- 30.00%
	HFPO-DA	10.0	11.6	116	ng/mL	+/- 30.00%

# INITIAL AND CONTINUING CALIBRATION CHECK

## EPA 1633

Laboratory:	APPL, LLC	Work Order:	23C0146
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2310010
Standard ID:	23B0095	Sequence:	SC01124

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01124-CCV2	ADONA	9.45	10.0	106	ng/mL	+/- 30.00%
	PFEESA	8.90	8.91	100	ng/mL	+/- 30.00%
	PFMPA	10.0	8.71	87.1	ng/mL	+/- 30.00%
	PFMBA	10.0	7.60	76.0	ng/mL	+/- 30.00%
	NFDHA	10.0	8.83	88.3	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	11.5	123	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	12.2	129	ng/mL	+/- 30.00%
	3:3FTCA	20.0	18.0	90.0	ng/mL	+/- 30.00%
	5:3FTCA	20.0	16.1	80.3	ng/mL	+/- 30.00%
	7:3FTCA	20.0	17.8	88.9	ng/mL	+/- 30.00%

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 2789598	(3.59, 1.00) (0.00, N/A, 0.0)	252.7	N/A 0.0 0.0	19.7621 [ 20.0000 ]	98.8%			
PFPeA	(263.0 / 219.0) 2386633 (263.0 / 69.0) 25483	(4.53, 1.00) (0.00, N/A, -0.1)	3200.2 343.7	0.0107 94.3 94.5	9.0440 [ 10.0000 ]	90.4%			
PFHxA	(313.0 / 269.0) 1487430 (313.0 / 119.0) 133433	(5.51, 1.00) (0.00, N/A, 0.0)	2775.8 9297.3	0.0897 85.2 104.5	4.5132 [ 5.0000 ]	90.3%			
PFHpA	(363.0 / 319.0) 1515526 (363.0 / 169.0) 437191	(6.29, 1.00) (0.00, N/A, 0.0)	4447.0 11818837.9	0.2885 88.5 113.6	4.5888 [ 5.0000 ]	91.8%			
PFOA	(413.0 / 369.0) 1821006 (413.0 / 169.0) 564286	(6.97, 1.00) (0.00, N/A, -0.1)	2382.8 4610.0	0.3099 88.9 101.5	4.8179 [ 5.0000 ]	96.4%			
PFNA	(463.0 / 419.0) 1734048 (463.0 / 169.0) 346417	(7.57, 1.00) (0.00, N/A, 0.1)	6592.7 40536.5	0.1998 85.3 90.6	4.9334 [ 5.0000 ]	98.7%			
PFDA	(513.0 / 469.0) 2184361 (513.0 / 169.0) 234964	(8.13, 1.00) (0.00, N/A, -0.2)	2478.9 1468.4	0.1076 101.1 98.7	4.8435 [ 5.0000 ]	96.9%			
PFUnA	(563.0 / 519.0) 1891156 (563.0 / 169.0) 209163	(8.61, 1.00) (0.00, N/A, 0.1)	2214.5 1208.0	0.1106 92.2 97.7	5.1325 [ 5.0000 ]	102.7%			
PFDoA	(613.0 / 569.0) 1666124 (613.0 / 169.0) 273876	(8.90, 1.00) (0.00, N/A, -0.1)	3005.5 2160.2	0.1644 101.0 98.3	4.8926 [ 5.0000 ]	97.9%			
PFTrDA	(663.0 / 619.0) 1619465 (663.0 / 169.0) 380203	(9.10, 1.02) (N/A, -0.02, 0.1)	3119.1 1394.2	0.2348 96.2 107.4	4.9589 [ 5.0000 ]	99.2%			
PFTeDA	(713.0 / 669.0) 1532576 (713.0 / 169.0) 310603	(9.27, 1.00) (0.00, N/A, 0.1)	2362.8 797.1	0.2027 106.0 106.6	4.5500 [ 5.0000 ]	91.0%			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCV2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (11)  
 Acquired: 2023/03/21 - 16:06

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 2230631 (299.0 / 99.0) 1414704	(5.48, 1.00) (0.00, N/A, 0.0)	39201.5 2548755.5	0.6342 108.1 97.0	4.8029 [ 4.4237 ]	108.6%			
PFPeS	(349.0 / 80.0) 5228583 (349.0 / 99.0) 1675274	(6.37, 0.90) (N/A, -0.05, 0.1)	8418.7 7877.4	0.3204 93.8 96.6	6.3950 [ 4.6919 ]	136.3%			CV2,
PFHxS	(399.0 / 80.0) 3452558 (399.0 / 99.0) 1160220	(7.11, 1.00) (0.00, N/A, 0.0)	13795.3 2976.9	0.3360 98.0 96.3	4.6419 [ 4.5549 ]	101.9%			
PFHpS	(449.0 / 80.0) 4404870 (449.0 / 99.0) 1162283	(7.76, 0.93) (N/A, -0.04, -0.1)	232939.7 7049.9	0.2639 92.9 94.9	3.9068 [ 4.7570 ]	82.1%			
PFOS	(499.0 / 80.0) 5768787 (499.0 / 99.0) 1275289	(8.33, 1.00) (0.00, N/A, 0.1)	1831.3 1216.9	0.2211 102.1 101.7	4.1165 [ 4.6375 ]	88.8%			
PFNS	(549.0 / 80.0) 5738646 (549.0 / 99.0) 1407177	(8.75, 1.05) (N/A, -0.03, -0.1)	20183.3 138721.3	0.2452 106.9 107.7	4.3182 [ 4.7994 ]	90.0%			
PFDS	(599.0 / 80.0) 6626842 (599.0 / 99.0) 1518236	(9.00, 1.08) (N/A, -0.02, 0.0)	1987.6 1159.0	0.2291 101.2 102.9	4.3163 [ 4.8155 ]	89.6%			
PFDoS	(699.0 / 80.0) 4348711 (699.0 / 99.0) 1056983	(9.34, 1.12) (N/A, -0.02, 0.1)	3623.3 2724.0	0.2431 111.5 102.1	3.5435 [ 4.8478 ]	73.1%			
4:2FTS	(327.0 / 307.0) 3687454 (327.0 / 81.0) 2308223	(5.25, 1.00) (0.00, N/A, 0.0)	6098.0 3445.9	0.6260 101.1 101.0	19.6255 [ 18.6906 ]	105.0%			
6:2FTS	(427.0 / 407.0) 2297010 (427.0 / 81.0) 1696995	(6.70, 1.00) (0.00, N/A, 0.0)	7005.4 3540.6	0.7388 106.9 110.1	18.7388 [ 18.9808 ]	98.7%			
8:2FTS	(527.0 / 507.0) 2577373 (527.0 / 81.0) 1988893	(7.87, 1.00) (0.00, N/A, -0.1)	5369.8 1983.1	0.7717 114.3 99.3	18.1351 [ 19.1658 ]	94.6%			



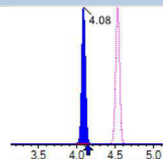
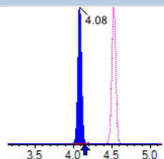
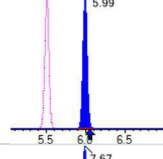
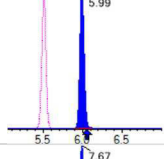
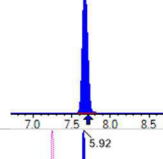
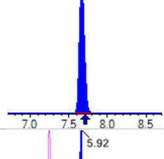
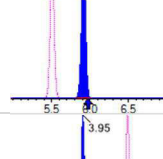
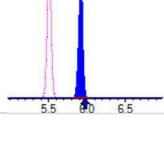
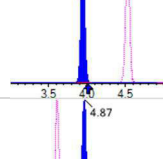
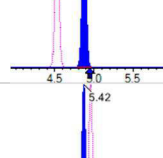
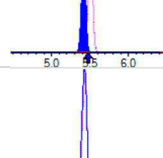
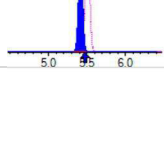
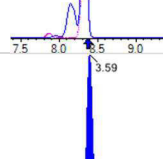
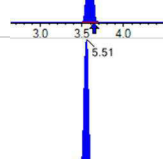
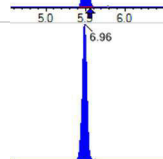
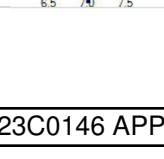


Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCV2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (11)  
 Acquired: 2023/03/21 - 16:06

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 7186464 (498.0 / 478.0) 186832	(9.76, 1.00) (0.00, N/A, 0.1)	4442.3 1317.1	0.0260 117.0 109.9	4.7236 [ 5.0000 ]	94.5%			
NMeFOSA	(512.0 / 219.0) 5061800 (512.0 / 169.0) 4402557	(10.38, 1.00) (-0.01, N/A, 0.8)	6302.5 5750.2	0.8698 104.0 100.1	18.4088 [ 20.0000 ]	92.0%			
NEIFOSA	(526.0 / 219.0) 5359408 (526.0 / 169.0) 6647855	(10.56, 1.00) (-0.01, N/A, 0.8)	10680.0 8997.9	1.2404 97.2 98.0	18.4709 [ 20.0000 ]	92.4%			
NMeFOSAA	(570.0 / 419.0) 919335 (570.0 / 483.0) 416517	(8.24, 1.00) (0.00, N/A, 0.2)	3521.2 558.3	0.4531 96.5 96.7	3.5517 [ 5.0000 ]	71.0%			
NEIFOSAA	(584.0 / 419.0) 835144 (584.0 / 526.0) 470044	(8.48, 1.00) (0.01, N/A, -0.1)	5049.1 7602.8	0.5628 88.2 95.9	4.7033 [ 5.0000 ]	94.1%			
NMeFOSE	(616.0 / 59.0) 2335722	(10.33, 1.00) (0.01, N/A, 0.0)	1719.2	N/A 0.0 0.0	18.2837 [ 20.0000 ]	91.4%			
NEtFOSE	(630.0 / 59.0) 2690176	(10.52, 1.00) (0.01, N/A, 0.0)	1030.9	N/A 0.0 0.0	18.0810 [ 20.0000 ]	90.4%			
HFPO-DA	(285.0 / 169.0) 1711722 (285.0 / 185.0) 4309864	(5.81, 1.00) (0.00, N/A, 0.1)	1956.8 6012.0	2.5179 93.5 103.0	11.5675 [ 10.0000 ]	115.7%			
ADONA	(377.0 / 85.0) 5816096 (377.0 / 251.0) 547699	(6.56, 1.13) (N/A, -0.05, 0.1)	3705.7 2474.3	0.0942 97.5 93.6	9.9975 [ 9.4270 ]	106.1%			
9CI-Pf3ONS	(531.0 / 351.0) 18097642 (533.0 / 353.0) 5809314	(8.67, 1.49) (N/A, -0.03, 0.0)	4516.2 2556.9	0.3210 100.6 103.6	11.5409 [ 9.3325 ]	123.7%			
11CI-PF3OUDS	(631.0 / 451.0) 11237495 (633.0 / 453.0) 4089499	(9.15, 1.58) (N/A, -0.02, 0.0)	6301.9 3195.8	0.3639 109.3 100.5	12.1546 [ 9.4321 ]	128.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 142945 (241.0 / 117.0) 212084	(4.08, 0.90) (N/A, -0.06, 0.0)	1694.0 1681.4	1.4837 72.8 112.3	17.9931 [ 20.0000 ]	90.0%			
5:3FTCA	(341.0 / 236.7) 903434 (341.0 / 217.0) 1527946	(5.99, 1.09) (N/A, -0.05, 0.1)	2613.7 3119.6	1.6913 102.7 105.7	16.0577 [ 20.0000 ]	80.3%			
7:3FTCA	(441.0 / 317.0) 1679034 (441.0 / 337.0) 1451106	(7.67, 1.39) (N/A, -0.04, 0.1)	1730.2 1719.8	0.8643 100.9 96.3	17.7814 [ 20.0000 ]	88.9%			
PFEESA	(315.0 / 135.0) 3661434 (315.0 / 83.0) 932214	(5.92, 1.07) (N/A, -0.05, -0.2)	5376.4 2483.3	0.2546 98.3 100.3	8.9073 [ 8.9246 ]	99.8%			
PFMPA	(229.0 / 85.0) 591935	(3.95, 0.87) (N/A, -0.06, 0.0)	7358.7	N/A 0.0 0.0	8.7138 [ 10.0000 ]	87.1%			
PFMBA	(279.0 / 85.0) 1648575	(4.87, 1.08) (N/A, -0.06, 0.0)	4668.1	N/A 0.0 0.0	7.5984 [ 10.0000 ]	76.0%			
NFDHA	(295.0 / 201.0) 1649139 (295.0 / 85.0) 1546032	(5.42, 0.98) (N/A, -0.05, 0.1)	5281.2 4496.2	0.9375 93.3 103.2	8.8256 [ 10.0000 ]	88.3%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [ 5.0000 ]	N/A%			CV2,
13C3_PFBA_IIS	(216.0 / 172.0) 130978	(3.59, N/A) (N/A, -0.06, N/A)	2032.1	N/A	0.6115 [ 1.0000 ]	61.1% { 89.7% }			IS1,
13C2_PFHxA_IIS	(315.0 / 270.0) 139354	(5.51, N/A) (N/A, -0.05, N/A)	30453.0	N/A	0.4437 [ 1.0000 ]	44.4% { 68.4% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 322476	(6.96, N/A) (N/A, -0.05, N/A)	1312.7	N/A	0.6983 [ 1.0000 ]	69.8% { 83.5% }			IS1,



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCV2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (11)  
 Acquired: 2023/03/21 - 16:06

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 353322	(7.57, N/A) (N/A, -0.04, N/A)	1813.4	N/A	0.8467 [ 1.0000 ]	84.7% { 89.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 340492	(8.13, N/A) (N/A, -0.04, N/A)	233134.0	N/A	0.8478 [ 1.0000 ]	84.8% { 92.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 436302	(7.12, N/A) (N/A, -0.04, N/A)	1608.7	N/A	0.6426 [ 1.0000 ]	64.3% { 95.6% }			IS1,
13C4_PFOS_IIS	(503.0 / 79.9) 855352	(8.33, N/A) (N/A, -0.04, N/A)	1941.6	N/A	0.9968 [ 1.0000 ]	99.7% { 97.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1367491	(3.59, N/A) (N/A, -0.05, N/A)	6001.7	N/A	8.7731 [ 8.0000 ]	109.7% { 92.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1200052	(4.53, N/A) (N/A, -0.06, N/A)	3132.2	N/A	7.4546 [ 4.0000 ]	186.4% { 102.5% }			S2,
13C5_PFHxA_EIS	(318.0 / 273.0) 741472	(5.51, N/A) (N/A, -0.05, N/A)	3012.9	N/A	3.8174 [ 2.0000 ]	190.9% { 97.4% }			S2,
13C4_PFHpA_EIS	(367.0 / 322.0) 782861	(6.29, N/A) (N/A, -0.05, N/A)	5540.6	N/A	4.2311 [ 2.0000 ]	211.6% { 103.9% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 832837	(6.96, N/A) (N/A, -0.04, N/A)	3363.2	N/A	2.3772 [ 2.0000 ]	118.9% { 88.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 406184	(7.57, N/A) (N/A, -0.04, N/A)	7108.8	N/A	1.0819 [ 1.0000 ]	108.2% { 89.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 478080	(8.12, N/A) (N/A, -0.04, N/A)	2224.6	N/A	1.1666 [ 1.0000 ]	116.7% { 95.3% }			

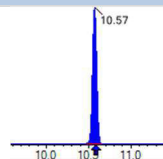
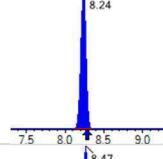
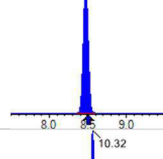
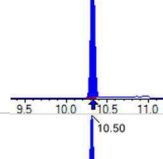
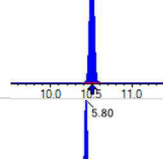
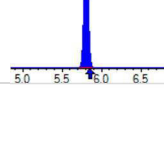


Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCV2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (11)  
 Acquired: 2023/03/21 - 16:06

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 461334	(8.61, N/A) (N/A, -0.03, N/A)	2077.8	N/A	1.0097 [ 1.0000 ]	101.0% { 86.9% }			
13C2_PFDa_EIS	(615.0 / 570.0) 404807	(8.90, N/A) (N/A, -0.02, N/A)	19410.5	N/A	1.0136 [ 1.0000 ]	101.4% { 87.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 394515	(9.27, N/A) (N/A, -0.02, N/A)	1649.5	N/A	0.9366 [ 1.0000 ]	93.7% { 102.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1438951	(5.48, N/A) (N/A, -0.06, N/A)	4402.9	N/A	2.0818 [ 2.0000 ]	104.1% { 85.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 991562	(7.11, N/A) (N/A, -0.03, N/A)	2100.6	N/A	2.2089 [ 2.0000 ]	110.4% { 75.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2484347	(8.33, N/A) (N/A, -0.03, N/A)	1462.2	N/A	2.1663 [ 2.0000 ]	108.3% { 93.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 257672	(5.25, N/A) (N/A, -0.06, N/A)	1984.8	N/A	5.8770 [ 4.0000 ]	146.9% { 88.4% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 341340	(6.71, N/A) (N/A, -0.04, N/A)	2034.9	N/A	5.9297 [ 4.0000 ]	148.2% { 89.1% }			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 424680	(7.87, N/A) (N/A, -0.04, N/A)	1686.5	N/A	6.8099 [ 4.0000 ]	170.2% { 89.8% }			S2,
13C8_PFOsa_EIS	(506.0 / 78.0) 3666254	(9.76, N/A) (N/A, -0.01, N/A)	3878.9	N/A	1.8690 [ 2.0000 ]	93.5% { 94.1% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 668809	(10.39, N/A) (N/A, -0.01, N/A)	2283.9	N/A	1.3326 [ 2.0000 ]	66.6% { 106.7% }			S1,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT- CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 609600	(10.57, N/A) (N/A, -0.01, N/A)	2641.9	N/A	1.3344 [ 2.0000 ]	66.7% { 109.5% }			S1,
D3_MeFOSAA_EIS	(573.0 / 419.0) 1005311	(8.24, N/A) (N/A, -0.04, N/A)	2451.5	N/A	5.1263 [ 4.0000 ]	128.2% { 103.6% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 847728	(8.47, N/A) (N/A, -0.03, N/A)	5807.1	N/A	3.8572 [ 4.0000 ]	96.4% { 102.0% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2579761	(10.32, N/A) (N/A, -0.01, N/A)	785.2	N/A	16.5183 [ 20.0000 ]	82.6% { 101.7% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 3078624	(10.50, N/A) (N/A, -0.01, N/A)	1581.5	N/A	16.7016 [ 20.0000 ]	83.5% { 98.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1489128	(5.80, N/A) (N/A, -0.05, N/A)	3657.1	N/A	13.8828 [ 8.0000 ]	173.5% { 95.0% }			S2,

# INITIAL AND CONTINUING CALIBRATION CHECK

## EPA 1633

Laboratory: APPL, LLC  
 Client: AECOM  
 Instrument ID: Saphira  
 Standard ID: 23B0095

Work Order: 23C0146  
 Project: Red Hill AFFF Assessment Sampling  
 Calibration: 2310010  
 Sequence: SC01124

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01124-CCV3	PFBA	20.0	18.3	91.3	ng/mL	+/- 30.00%
	PFPEA	10.0	9.32	93.2	ng/mL	+/- 30.00%
	PFHXA	5.00	4.83	96.7	ng/mL	+/- 30.00%
	PFHPA	5.00	4.79	95.8	ng/mL	+/- 30.00%
	PFOA	5.00	4.83	96.7	ng/mL	+/- 30.00%
	PFNA	5.00	4.92	98.4	ng/mL	+/- 30.00%
	PFDA	5.00	4.53	90.6	ng/mL	+/- 30.00%
	PFUnA	5.00	5.07	101	ng/mL	+/- 30.00%
	PFDOA	5.00	4.87	97.4	ng/mL	+/- 30.00%
	PFTRDA	5.00	4.49	89.7	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.75	94.9	ng/mL	+/- 30.00%
	PFBS	4.42	4.32	97.7	ng/mL	+/- 30.00%
	PFPEs	4.70	5.41	115	ng/mL	+/- 30.00%
	PFHXS	4.58	4.34	94.7	ng/mL	+/- 30.00%
	PFHPS	4.78	3.42	71.6	ng/mL	+/- 30.00%
	PFOS	4.65	3.84	82.7	ng/mL	+/- 30.00%
	PFNS	4.80	4.03	83.9	ng/mL	+/- 30.00%
	PFDS	4.82	4.18	86.7	ng/mL	+/- 30.00%
	PFDOS	4.85	3.43	70.7	ng/mL	+/- 30.00%
	4:2FTS	18.8	19.5	104	ng/mL	+/- 30.00%
	6:2FTS	19.0	18.4	96.6	ng/mL	+/- 30.00%
	8:2FTS	19.2	18.0	94.0	ng/mL	+/- 30.00%
	PFOSA	5.00	5.08	102	ng/mL	+/- 30.00%
	NMeFOSA	20.0	19.1	95.3	ng/mL	+/- 30.00%
	NEtFOSA	20.0	17.9	89.3	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	3.85	77.0	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	4.99	99.8	ng/mL	+/- 30.00%
	NMeFOSE	20.0	18.5	92.6	ng/mL	+/- 30.00%
	NEtFOSE	20.0	19.1	95.7	ng/mL	+/- 30.00%
	HFPO-DA	10.0	10.4	104	ng/mL	+/- 30.00%

# INITIAL AND CONTINUING CALIBRATION CHECK

## EPA 1633

Laboratory:	APPL, LLC	Work Order:	23C0146
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2310010
Standard ID:	23B0095	Sequence:	SC01124

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01124-CCV3	ADONA	9.45	9.41	99.6	ng/mL	+/- 30.00%
	PFEESA	8.90	9.68	109	ng/mL	+/- 30.00%
	PFMPA	10.0	8.15	81.5	ng/mL	+/- 30.00%
	PFMBA	10.0	8.63	86.3	ng/mL	+/- 30.00%
	NFDHA	10.0	9.64	96.4	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	12.2	130	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	11.6	123	ng/mL	+/- 30.00%
	3:3FTCA	20.0	18.1	90.4	ng/mL	+/- 30.00%
	5:3FTCA	20.0	15.4	77.2	ng/mL	+/- 30.00%
	7:3FTCA	20.0	21.0	105	ng/mL	+/- 30.00%



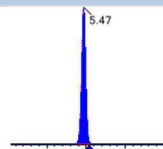
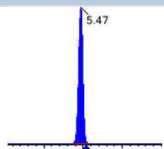
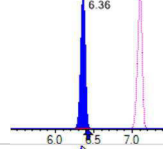
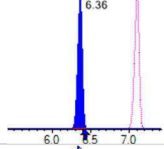
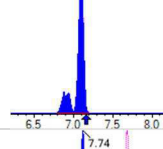
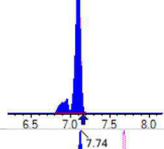
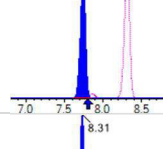
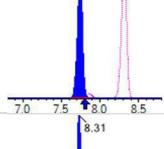
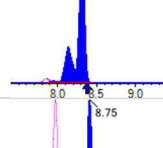
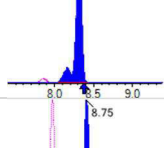
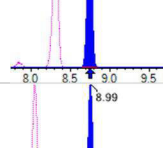
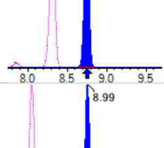
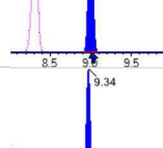
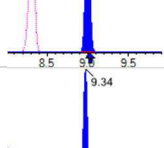
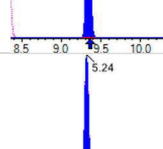
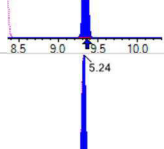
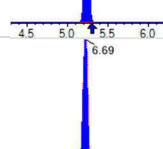
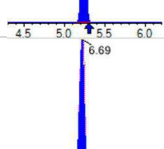
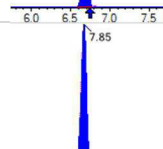
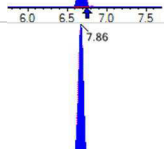
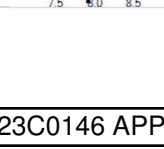
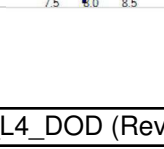
Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCV3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (36)  
 Acquired: 2023/03/21 - 21:28

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 2438754	(3.58, 1.00) (0.00, N/A, 0.0)	208.4	N/A 0.0 0.0	18.2618 [ 20.0000 ]	91.3%			
PFPeA	(263.0 / 219.0) 2249031 (263.0 / 69.0) 23703	(4.52, 1.00) (0.00, N/A, 0.0)	4215.0 341.5	0.0105 93.1 93.3	9.3187 [ 10.0000 ]	93.2%			
PFHxA	(313.0 / 269.0) 1415082 (313.0 / 119.0) 134589	(5.50, 1.00) (0.00, N/A, 0.1)	2584.5 6617.7	0.0951 90.3 110.8	4.8343 [ 5.0000 ]	96.7%			
PFHpA	(363.0 / 319.0) 1335975 (363.0 / 169.0) 395086	(6.27, 1.00) (0.00, N/A, -0.1)	23999.5 4078.8	0.2957 90.7 116.4	4.7908 [ 5.0000 ]	95.8%			
PFOA	(413.0 / 369.0) 1733446 (413.0 / 169.0) 519089	(6.95, 1.00) (0.00, N/A, 0.0)	3501.0 14789.9	0.2995 85.9 98.1	4.8342 [ 5.0000 ]	96.7%			
PFNA	(463.0 / 419.0) 1682834 (463.0 / 169.0) 372063	(7.55, 1.00) (0.00, N/A, 0.0)	31547.5 7600229.1	0.2211 94.4 100.3	4.9183 [ 5.0000 ]	98.4%			
PFDA	(513.0 / 469.0) 2047064 (513.0 / 169.0) 238624	(8.11, 1.00) (0.00, N/A, 0.1)	1940.0 1238.8	0.1166 109.6 107.0	4.5293 [ 5.0000 ]	90.6%			
PFUnA	(563.0 / 519.0) 1927391 (563.0 / 169.0) 211660	(8.60, 1.00) (0.00, N/A, 0.0)	2598.5 1823.3	0.1098 91.6 97.1	5.0700 [ 5.0000 ]	101.4%			
PFDoA	(613.0 / 569.0) 1736323 (613.0 / 169.0) 275475	(8.89, 1.00) (0.00, N/A, 0.1)	3062.2 1521.0	0.1587 97.5 94.9	4.8713 [ 5.0000 ]	97.4%			
PFTrDA	(663.0 / 619.0) 1533496 (663.0 / 169.0) 352776	(9.10, 1.02) (N/A, -0.02, 0.1)	3317.5 1752.8	0.2300 94.3 105.2	4.4862 [ 5.0000 ]	89.7%			
PFTeDA	(713.0 / 669.0) 1457619 (713.0 / 169.0) 272150	(9.26, 1.00) (0.00, N/A, 0.1)	3063.7 862.5	0.1867 97.7 98.2	4.7465 [ 5.0000 ]	94.9%			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 2147380 (299.0 / 99.0) 1376038	(5.47, 1.00) (0.00, N/A, -0.1)	31895.2 10762.5	0.6408 109.2 98.0	4.3200 [ 4.4237 ]	97.7%			
PFPeS	(349.0 / 80.0) 4718599 (349.0 / 99.0) 1565611	(6.36, 0.90) (N/A, -0.06, 0.0)	382088.2 31936.8	0.3318 97.1 100.0	5.4077 [ 4.6919 ]	115.3%			
PFHxS	(399.0 / 80.0) 3441488 (399.0 / 99.0) 1185237	(7.10, 1.00) (0.00, N/A, 0.0)	7668.1 3952.7	0.3444 100.5 98.7	4.3356 [ 4.5549 ]	95.2%			
PFHpS	(449.0 / 80.0) 4065263 (449.0 / 99.0) 1118853	(7.74, 0.93) (N/A, -0.06, -0.1)	4087.5 15833.7	0.2752 96.9 99.0	3.4201 [ 4.7570 ]	71.9%			
PFOS	(499.0 / 80.0) 5678710 (499.0 / 99.0) 1298411	(8.31, 1.00) (0.00, N/A, 0.0)	1551.0 941.0	0.2286 105.6 105.2	3.8439 [ 4.6375 ]	82.9%			
PFNS	(549.0 / 80.0) 5643670 (549.0 / 99.0) 1401571	(8.75, 1.05) (N/A, -0.03, -0.1)	19470.6 1465574.4	0.2483 108.3 109.1	4.0283 [ 4.7994 ]	83.9%			
PFDS	(599.0 / 80.0) 6762917 (599.0 / 99.0) 1531701	(8.99, 1.08) (N/A, -0.03, 0.0)	2113.3 2756.6	0.2265 100.1 101.7	4.1784 [ 4.8155 ]	86.8%			
PFDoS	(699.0 / 80.0) 4433252 (699.0 / 99.0) 987050	(9.34, 1.12) (N/A, -0.02, -0.1)	3970.7 1770.8	0.2226 102.1 93.6	3.4266 [ 4.8478 ]	70.7%			
4:2FTS	(327.0 / 307.0) 3544878 (327.0 / 81.0) 2173635	(5.24, 1.00) (0.00, N/A, -0.1)	5431.1 3747.9	0.6132 99.0 99.0	19.4725 [ 18.6906 ]	104.2%			
6:2FTS	(427.0 / 407.0) 2263982 (427.0 / 81.0) 1726134	(6.69, 1.00) (-0.01, N/A, 0.0)	3546.5 3986.5	0.7624 110.4 113.7	18.3619 [ 18.9808 ]	96.7%			
8:2FTS	(527.0 / 507.0) 2909985 (527.0 / 81.0) 2180360	(7.85, 1.00) (0.00, N/A, 0.0)	3688.8 3977.9	0.7493 110.9 96.4	18.0466 [ 19.1658 ]	94.2%			

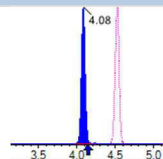
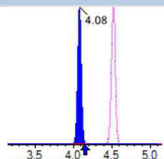
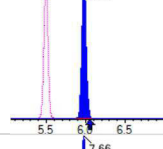
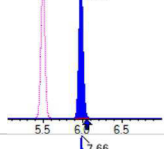
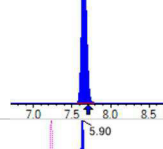
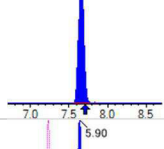
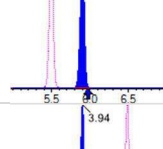
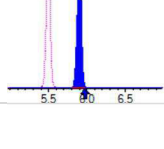
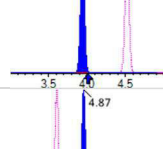
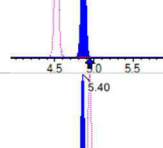
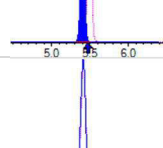
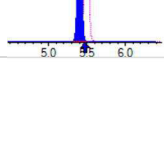
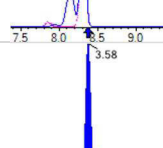
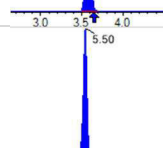
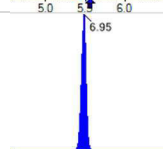
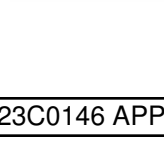


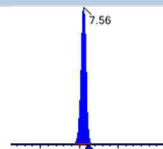
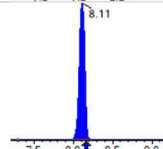
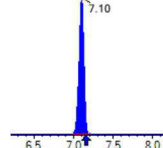
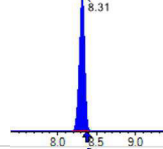
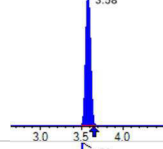
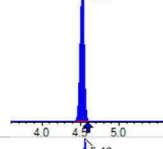
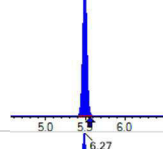
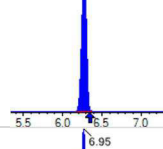
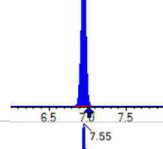
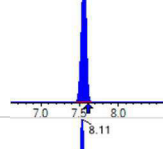
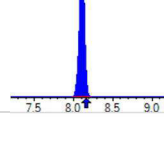
Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

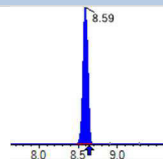
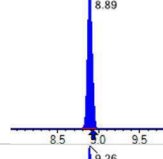
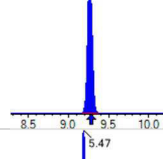
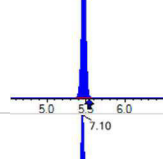
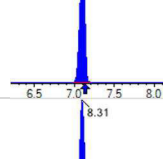
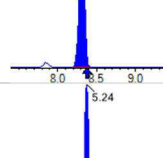
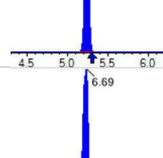
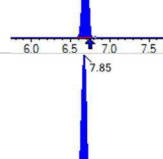
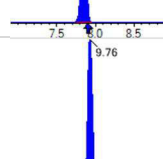
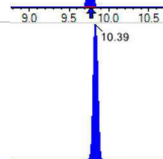
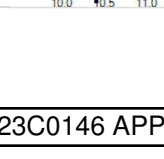
Sample I.D.: SC01124-CCV3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (36)  
 Acquired: 2023/03/21 - 21:28

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 7374029 (498.0 / 478.0) 188995	(9.76, 1.00) (0.00, N/A, 0.0)	5058.5 1197.9	0.0256 115.3 108.3	5.0850 [ 5.0000 ]	101.7%			
NMeFOSA	(512.0 / 219.0) 5486627 (512.0 / 169.0) 4753420	(10.38, 1.00) (-0.01, N/A, 0.9)	5438.4 6813.5	0.8664 103.6 99.7	19.0523 [ 20.0000 ]	95.3%			
NEIFOSA	(526.0 / 219.0) 5992149 (526.0 / 169.0) 7403365	(10.56, 1.00) (0.00, N/A, 1.0)	8967.9 8533.5	1.2355 96.8 97.6	17.8587 [ 20.0000 ]	89.3%			
NMeFOSAA	(570.0 / 419.0) 1095079 (570.0 / 483.0) 504216	(8.23, 1.00) (0.00, N/A, 0.0)	12871.3 556.5	0.4604 98.0 98.3	3.8513 [ 5.0000 ]	77.0%			
NEIFOSAA	(584.0 / 419.0) 1003646 (584.0 / 526.0) 519853	(8.47, 1.00) (0.01, N/A, 0.1)	3916.3 10721.0	0.5180 81.1 88.2	4.9902 [ 5.0000 ]	99.8%			
NMeFOSE	(616.0 / 59.0) 2426889	(10.33, 1.00) (0.01, N/A, 0.0)	2421.1	N/A 0.0 0.0	18.5146 [ 20.0000 ]	92.6%			
NEtFOSE	(630.0 / 59.0) 2913563	(10.51, 1.00) (0.01, N/A, 0.0)	1260.7	N/A 0.0 0.0	19.1467 [ 20.0000 ]	95.7%			
HFPO-DA	(285.0 / 169.0) 1501840 (285.0 / 185.0) 4073259	(5.79, 1.00) (0.00, N/A, 0.0)	4360.6 4631.7	2.7122 100.8 110.9	10.3968 [ 10.0000 ]	104.0%			
ADONA	(377.0 / 85.0) 5344952 (377.0 / 251.0) 529941	(6.55, 1.13) (N/A, -0.06, 0.1)	5044.8 2471.3	0.0991 102.7 98.6	9.4119 [ 9.4270 ]	99.8%			
9CI-Pf3ONS	(531.0 / 351.0) 18653208 (533.0 / 353.0) 6027202	(8.66, 1.50) (N/A, -0.04, -0.1)	52.6 3117.4	0.3231 101.3 104.3	12.1855 [ 9.3325 ]	130.6%			CV2,
11CI-PF3OUDS	(631.0 / 451.0) 10532231 (633.0 / 453.0) 4191755	(9.15, 1.58) (N/A, -0.02, -0.1)	4629.8 3203.3	0.3980 119.5 109.9	11.6438 [ 9.4321 ]	123.4%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 131387 (241.0 / 117.0) 208532	(4.08, 0.90) (N/A, -0.06, 0.0)	1768.0 1284.6	1.5872 77.9 120.2	18.0831 [ 20.0000 ]	90.4%			
5:3FTCA	(341.0 / 236.7) 771943 (341.0 / 217.0) 1447241	(5.98, 1.09) (N/A, -0.07, 0.0)	2357.5 2186.6	1.8748 113.8 117.1	15.4481 [ 20.0000 ]	77.2%			
7:3FTCA	(441.0 / 317.0) 1761919 (441.0 / 337.0) 1417096	(7.66, 1.39) (N/A, -0.06, -0.3)	1737.6 2213.0	0.8043 93.9 89.6	21.0085 [ 20.0000 ]	105.0%			
PFEESA	(315.0 / 135.0) 3535640 (315.0 / 83.0) 826158	(5.90, 1.07) (N/A, -0.07, 0.0)	7443.9 1969.0	0.2337 90.2 92.1	9.6842 [ 8.9246 ]	108.5%			
PFMPA	(229.0 / 85.0) 506376	(3.94, 0.87) (N/A, -0.06, 0.0)	4677.1	N/A 0.0 0.0	8.1507 [ 10.0000 ]	81.5%			
PFMBA	(279.0 / 85.0) 1713382	(4.87, 1.08) (N/A, -0.07, 0.0)	4431.4	N/A 0.0 0.0	8.6349 [ 10.0000 ]	86.3%			
NFDHA	(295.0 / 201.0) 1600513 (295.0 / 85.0) 1490501	(5.40, 0.98) (N/A, -0.07, 0.0)	4639.3 4321.2	0.9313 92.7 102.5	9.6439 [ 10.0000 ]	96.4%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [ 5.0000 ]	N/A%			CV2,
13C3_PFBA_IIS	(216.0 / 172.0) 125270	(3.58, N/A) (N/A, -0.07, N/A)	1486.8	N/A	0.5848 [ 1.0000 ]	58.5% { 85.8% }			IS1,
13C2_PFHxA_IIS	(315.0 / 270.0) 157779	(5.50, N/A) (N/A, -0.06, N/A)	37071.2	N/A	0.5024 [ 1.0000 ]	50.2% { 77.5% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 363741	(6.95, N/A) (N/A, -0.06, N/A)	1801.8	N/A	0.7876 [ 1.0000 ]	78.8% { 94.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 329512	(7.56, N/A) (N/A, -0.06, N/A)	27749.3	N/A	0.7896 [ 1.0000 ]	79.0% { 83.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 353587	(8.11, N/A) (N/A, -0.05, N/A)	1193.0	N/A	0.8804 [ 1.0000 ]	88.0% { 96.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 449359	(7.10, N/A) (N/A, -0.06, N/A)	1996.3	N/A	0.6619 [ 1.0000 ]	66.2% { 98.5% }			IS1,
13C4_PFOS_IIS	(503.0 / 79.9) 922847	(8.31, N/A) (N/A, -0.05, N/A)	1808.1	N/A	1.0755 [ 1.0000 ]	107.6% { 105.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1293717	(3.58, N/A) (N/A, -0.07, N/A)	5125.5	N/A	8.6780 [ 8.0000 ]	108.5% { 87.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1097522	(4.52, N/A) (N/A, -0.07, N/A)	4521.7	N/A	6.0215 [ 4.0000 ]	150.5% { 93.7% }			S2,
13C5_PFHxA_EIS	(318.0 / 273.0) 658554	(5.49, N/A) (N/A, -0.07, N/A)	3079.9	N/A	2.9945 [ 2.0000 ]	149.7% { 86.5% }			S2,
13C4_PFHpA_EIS	(367.0 / 322.0) 661011	(6.27, N/A) (N/A, -0.07, N/A)	4911.0	N/A	3.1553 [ 2.0000 ]	157.8% { 87.7% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 790109	(6.95, N/A) (N/A, -0.06, N/A)	3576.5	N/A	1.9994 [ 2.0000 ]	100.0% { 83.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 395396	(7.55, N/A) (N/A, -0.06, N/A)	11696.6	N/A	1.1293 [ 1.0000 ]	112.9% { 87.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 479111	(8.11, N/A) (N/A, -0.05, N/A)	2048.9	N/A	1.1258 [ 1.0000 ]	112.6% { 95.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 475971	(8.59, N/A) (N/A, -0.04, N/A)	1734.9	N/A	1.0032 [ 1.0000 ]	100.3% { 89.7% }			
13C2_PFDa_EIS	(615.0 / 570.0) 423701	(8.89, N/A) (N/A, -0.03, N/A)	8709.3	N/A	1.0216 [ 1.0000 ]	102.2% { 91.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 359688	(9.26, N/A) (N/A, -0.02, N/A)	2661.7	N/A	0.8223 [ 1.0000 ]	82.2% { 93.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1540082	(5.47, N/A) (N/A, -0.07, N/A)	3219.5	N/A	2.1633 [ 2.0000 ]	108.2% { 91.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1058209	(7.10, N/A) (N/A, -0.04, N/A)	2826.2	N/A	2.2889 [ 2.0000 ]	114.4% { 80.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2619027	(8.31, N/A) (N/A, -0.05, N/A)	1867.7	N/A	2.1167 [ 2.0000 ]	105.8% { 98.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 249655	(5.24, N/A) (N/A, -0.07, N/A)	3333.2	N/A	5.5287 [ 4.0000 ]	138.2% { 85.7% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 343337	(6.69, N/A) (N/A, -0.05, N/A)	1887.7	N/A	5.7911 [ 4.0000 ]	144.8% { 89.6% }			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 481839	(7.85, N/A) (N/A, -0.05, N/A)	1506.5	N/A	7.5019 [ 4.0000 ]	187.5% { 101.9% }			S2,
13C8_PFOsa_EIS	(506.0 / 78.0) 3494604	(9.76, N/A) (N/A, -0.02, N/A)	3264.1	N/A	1.6512 [ 2.0000 ]	82.6% { 89.7% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 700452	(10.39, N/A) (N/A, -0.01, N/A)	2411.5	N/A	1.2936 [ 2.0000 ]	64.7% { 111.8% }			S1,



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCV3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (36)  
 Acquired: 2023/03/21 - 21:28

Analyte	( Q1 / Q3 ) Area Counts*min	R.T. ( R.T [min], R.R.T. ) ( ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	( 531.0 / 169.0 ) 704936	( 10.57 , N/A ) ( N/A , -0.01 , N/A )	3584.7	N/A	1.4303 [ 2.0000 ]	71.5% { 126.6% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 1104320	( 8.22 , N/A ) ( N/A , -0.05 , N/A )	2238.7	N/A	5.2193 [ 4.0000 ]	130.5% { 113.8% }			S2,
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 960183	( 8.46 , N/A ) ( N/A , -0.04 , N/A )	107028.5	N/A	4.0493 [ 4.0000 ]	101.2% { 115.5% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 2647029	( 10.32 , N/A ) ( N/A , -0.01 , N/A )	2650.4	N/A	15.7094 [ 20.0000 ]	78.5% { 104.4% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 3148691	( 10.50 , N/A ) ( N/A , -0.01 , N/A )	1830.0	N/A	15.8324 [ 20.0000 ]	79.2% { 100.6% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1453657	( 5.79 , N/A ) ( N/A , -0.07 , N/A )	4742.0	N/A	11.9695 [ 8.0000 ]	149.6% { 92.7% }			S2,

# INITIAL AND CONTINUING CALIBRATION CHECK

## EPA 1633

Laboratory: APPL, LLC  
 Client: AECOM  
 Instrument ID: Saphira  
 Standard ID: 23B0095

Work Order: 23C0146  
 Project: Red Hill AFFF Assessment Sampling  
 Calibration: 2310010  
 Sequence: SC01124

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01124-CCV4	PFBA	20.0	18.8	94.1	ng/mL	+/- 30.00%
	PFPEA	10.0	9.31	93.1	ng/mL	+/- 30.00%
	PFHXA	5.00	4.72	94.3	ng/mL	+/- 30.00%
	PFHPA	5.00	4.79	95.8	ng/mL	+/- 30.00%
	PFOA	5.00	4.53	90.6	ng/mL	+/- 30.00%
	PFNA	5.00	4.86	97.3	ng/mL	+/- 30.00%
	PFDA	5.00	4.47	89.5	ng/mL	+/- 30.00%
	PFUnA	5.00	5.19	104	ng/mL	+/- 30.00%
	PFDOA	5.00	4.65	92.9	ng/mL	+/- 30.00%
	PFTRDA	5.00	4.35	87.0	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.61	92.2	ng/mL	+/- 30.00%
	PFBS	4.42	4.39	99.3	ng/mL	+/- 30.00%
	PFPEs	4.70	5.37	114	ng/mL	+/- 30.00%
	PFHXS	4.58	4.40	96.1	ng/mL	+/- 30.00%
	PFHPS	4.78	3.67	76.8	ng/mL	+/- 30.00%
	PFOS	4.65	4.03	86.7	ng/mL	+/- 30.00%
	PFNS	4.80	4.47	93.1	ng/mL	+/- 30.00%
	PFDS	4.82	4.23	87.8	ng/mL	+/- 30.00%
	PFDOS	4.85	3.46	71.4	ng/mL	+/- 30.00%
	4:2FTS	18.8	18.7	99.7	ng/mL	+/- 30.00%
	6:2FTS	19.0	19.3	101	ng/mL	+/- 30.00%
	8:2FTS	19.2	18.5	96.6	ng/mL	+/- 30.00%
	PFOSA	5.00	4.73	94.6	ng/mL	+/- 30.00%
	NMeFOSA	20.0	19.0	95.0	ng/mL	+/- 30.00%
	NEtFOSA	20.0	18.0	89.9	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	3.80	76.1	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	4.49	89.7	ng/mL	+/- 30.00%
	NMeFOSE	20.0	18.3	91.3	ng/mL	+/- 30.00%
	NEtFOSE	20.0	18.8	93.9	ng/mL	+/- 30.00%
	HFPO-DA	10.0	11.3	113	ng/mL	+/- 30.00%

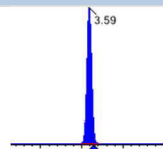
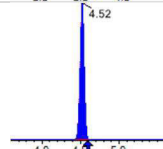
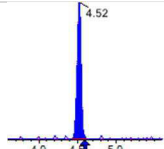
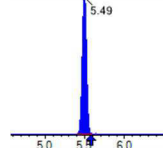
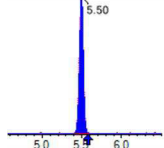
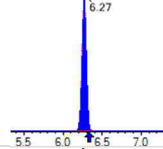
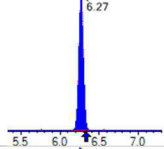
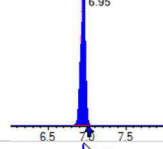
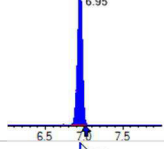
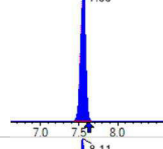
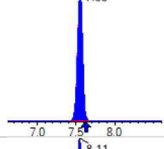
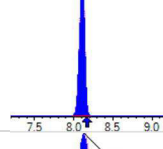
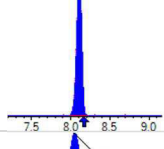
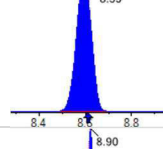
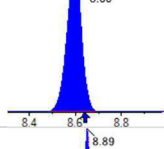
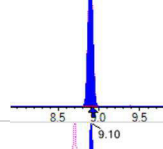
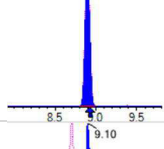
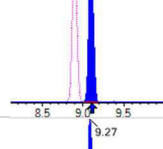
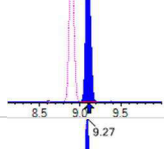
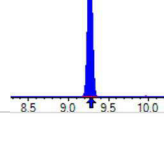
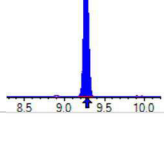
# INITIAL AND CONTINUING CALIBRATION CHECK

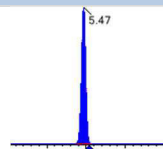
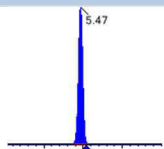
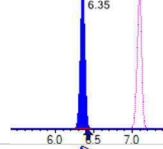
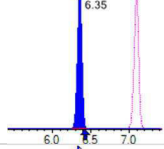
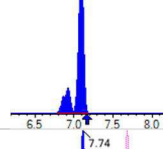
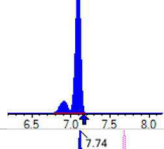
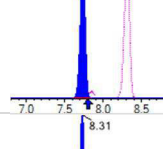
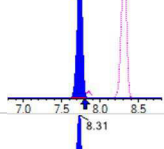
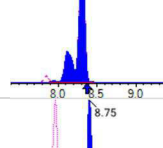
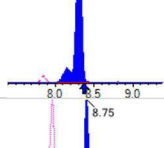
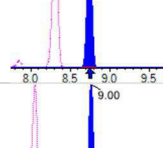
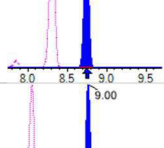
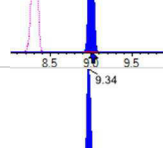
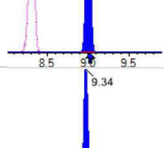
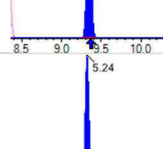
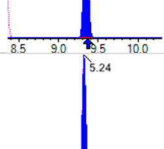
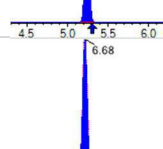
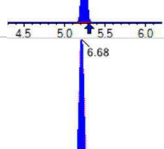
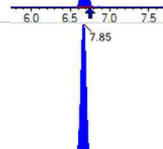
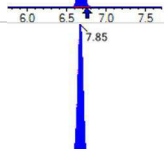
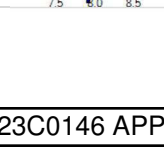
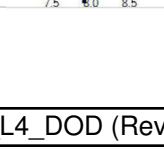
## EPA 1633

Laboratory:	APPL, LLC	Work Order:	23C0146
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2310010
Standard ID:	23B0095	Sequence:	SC01124

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SC01124-CCV4	ADONA	9.45	8.95	94.7	ng/mL	+/- 30.00%
	PFEESA	8.90	9.26	104	ng/mL	+/- 30.00%
	PFMPA	10.0	8.84	88.4	ng/mL	+/- 30.00%
	PFMBA	10.0	8.62	86.2	ng/mL	+/- 30.00%
	NFDHA	10.0	10.8	108	ng/mL	+/- 30.00%
	<b>9CL-PF3ONS</b>	<b>9.35</b>	<b>12.4</b>	<b>133</b>	<b>ng/mL</b>	+/- 30.00%
	11CL-PF3OUDS	9.45	11.9	126	ng/mL	+/- 30.00%
	3:3FTCA	20.0	18.3	91.3	ng/mL	+/- 30.00%
	5:3FTCA	20.0	16.4	81.8	ng/mL	+/- 30.00%
	7:3FTCA	20.0	20.6	103	ng/mL	+/- 30.00%



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 2574284	(3.59, 1.00) (0.00, N/A, 0.0)	274.1	N/A 0.0 0.0	18.8112 [ 20.0000 ]	94.1%			
PFPeA	(263.0 / 219.0) 2370619 (263.0 / 69.0) 25900	(4.52, 1.00) (0.00, N/A, 0.0)	2669.9 357.1	0.0109 96.5 96.7	9.3103 [ 10.0000 ]	93.1%			
PFHxA	(313.0 / 269.0) 1429177 (313.0 / 119.0) 143055	(5.49, 1.00) (0.00, N/A, 0.0)	1641.1 4280.3	0.1001 95.0 116.6	4.7162 [ 5.0000 ]	94.3%			
PFHpA	(363.0 / 319.0) 1489285 (363.0 / 169.0) 390445	(6.27, 1.00) (0.00, N/A, 0.2)	3363.5 3931.0	0.2622 80.4 103.2	4.7882 [ 5.0000 ]	95.8%			
PFOA	(413.0 / 369.0) 1736397 (413.0 / 169.0) 615148	(6.95, 1.00) (0.00, N/A, 0.2)	2414.2 5046.8	0.3543 101.6 116.1	4.5288 [ 5.0000 ]	90.6%			
PFNA	(463.0 / 419.0) 1755595 (463.0 / 169.0) 379063	(7.55, 1.00) (0.00, N/A, 0.1)	5202.2 557067.2	0.2159 92.2 98.0	4.8638 [ 5.0000 ]	97.3%			
PFDA	(513.0 / 469.0) 2294516 (513.0 / 169.0) 239716	(8.11, 1.00) (0.00, N/A, 0.0)	1928.1 1109.4	0.1045 98.2 95.9	4.4737 [ 5.0000 ]	89.5%			
PFUnA	(563.0 / 519.0) 2168396 (563.0 / 169.0) 257364	(8.59, 1.00) (0.00, N/A, -0.1)	2583.1 2357.7	0.1187 99.0 104.9	5.1943 [ 5.0000 ]	103.9%			
PFDoA	(613.0 / 569.0) 1936021 (613.0 / 169.0) 312939	(8.90, 1.00) (0.00, N/A, 0.1)	3153.2 2800.7	0.1616 99.3 96.7	4.6471 [ 5.0000 ]	92.9%			
PFTrDA	(663.0 / 619.0) 1737019 (663.0 / 169.0) 432064	(9.10, 1.02) (N/A, -0.02, 0.1)	2797.1 2005.0	0.2487 101.9 113.8	4.3476 [ 5.0000 ]	87.0%			
PFTeDA	(713.0 / 669.0) 1566663 (713.0 / 169.0) 307655	(9.27, 1.00) (0.00, N/A, 0.0)	2354.2 917.7	0.1964 102.7 103.3	4.6089 [ 5.0000 ]	92.2%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 2137316 (299.0 / 99.0) 1361662	(5.47, 1.00) (0.00, N/A, 0.0)	9143.3 250846.6	0.6371 108.6 97.5	4.3886 [ 4.4237 ]	99.2%			
PFPeS	(349.0 / 80.0) 4643041 (349.0 / 99.0) 1557430	(6.35, 0.90) (N/A, -0.07, -0.1)	363854.7 1246443.6	0.3354 98.2 101.1	5.3684 [ 4.6919 ]	114.4%			
PFHxS	(399.0 / 80.0) 3462790 (399.0 / 99.0) 1203258	(7.09, 1.00) (0.00, N/A, 0.1)	4687.7 156746.9	0.3475 101.4 99.6	4.4011 [ 4.5549 ]	96.6%			
PFHpS	(449.0 / 80.0) 4524299 (449.0 / 99.0) 1220996	(7.74, 0.93) (N/A, -0.06, -0.1)	1074961.7 5275.1	0.2699 95.0 97.1	3.6707 [ 4.7570 ]	77.2%			
PFOS	(499.0 / 80.0) 6179251 (499.0 / 99.0) 1337008	(8.31, 1.00) (0.00, N/A, 0.0)	1259.1 848.9	0.2164 100.0 99.5	4.0336 [ 4.6375 ]	87.0%			
PFNS	(549.0 / 80.0) 6489981 (549.0 / 99.0) 1557291	(8.75, 1.05) (N/A, -0.03, -0.1)	8272.8 3723.0	0.2400 104.6 105.4	4.4673 [ 4.7994 ]	93.1%			
PFDS	(599.0 / 80.0) 7100922 (599.0 / 99.0) 1652907	(9.00, 1.08) (N/A, -0.02, 0.0)	2964.2 1497.2	0.2328 102.8 104.6	4.2309 [ 4.8155 ]	87.9%			
PFDoS	(699.0 / 80.0) 4646627 (699.0 / 99.0) 1057254	(9.34, 1.12) (N/A, -0.02, -0.1)	3670.7 3602.5	0.2275 104.4 95.6	3.4636 [ 4.8478 ]	71.4%			
4:2FTS	(327.0 / 307.0) 3712174 (327.0 / 81.0) 2241786	(5.24, 1.00) (0.00, N/A, 0.0)	5640.4 3530.9	0.6039 97.5 97.5	18.7350 [ 18.6906 ]	100.2%			
6:2FTS	(427.0 / 407.0) 2478160 (427.0 / 81.0) 1840299	(6.68, 1.00) (0.00, N/A, 0.0)	3840.8 4553.8	0.7426 107.5 110.7	19.2599 [ 18.9808 ]	101.5%			
8:2FTS	(527.0 / 507.0) 2942049 (527.0 / 81.0) 2323122	(7.85, 1.00) (0.00, N/A, 0.0)	2154.8 2310.0	0.7896 116.9 101.6	18.5443 [ 19.1658 ]	96.8%			

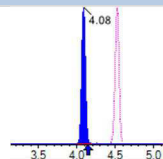
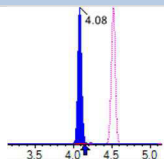
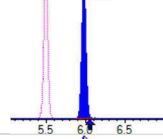
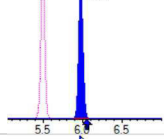
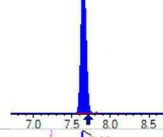
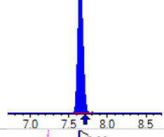
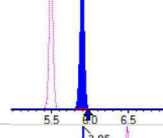
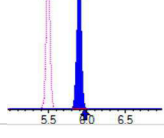
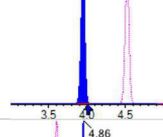
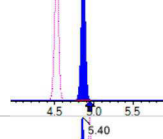
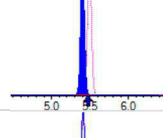
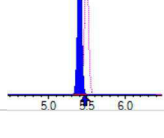
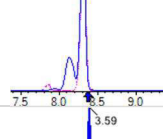
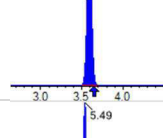
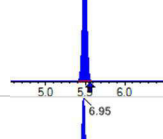
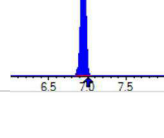


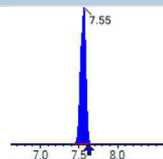
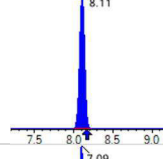
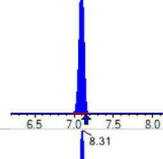
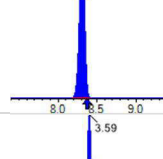
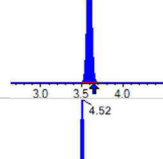
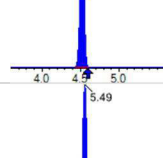
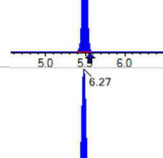
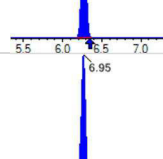
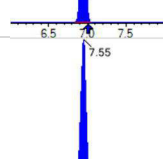
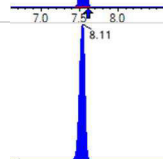
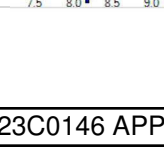
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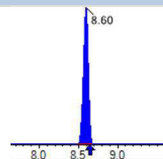
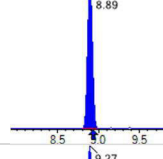
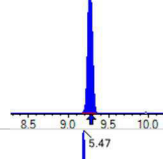
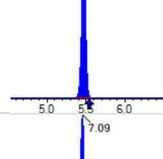
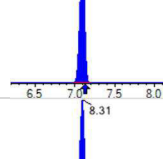
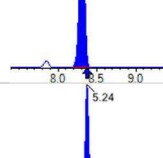
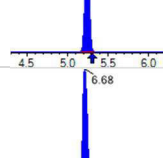
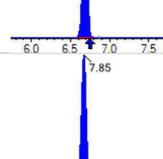
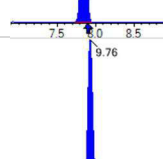
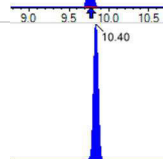
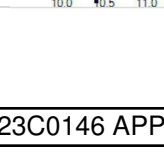
Sample I.D.: SC01124-CCV4  
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 Acquisition Method: 1633 2023-03-07.dam

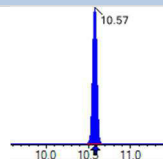
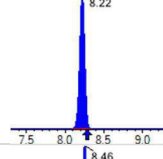
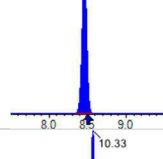
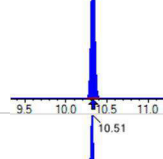
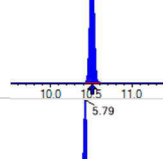
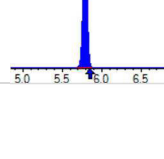
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 Path: S2023-03-21A (58)  
 Acquired: 2023/03/22 - 02:12

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 7590473 (498.0 / 478.0) 203574	(9.76, 1.00) (0.00, N/A, 0.0)	3314.9 1271.6	0.0268 120.7 113.3	4.7305 [ 5.0000 ]	94.6%			
NMeFOSA	(512.0 / 219.0) 5626763 (512.0 / 169.0) 4635555	(10.39, 1.00) (-0.01, N/A, 0.9)	4534.1 6871.4	0.8238 98.5 94.8	18.9985 [ 20.0000 ]	95.0%			
NEIFOSA	(526.0 / 219.0) 6020448 (526.0 / 169.0) 7509649	(10.57, 1.00) (0.00, N/A, 1.0)	8774.9 8579.4	1.2474 97.7 98.6	17.9713 [ 20.0000 ]	89.9%			
NMeFOSAA	(570.0 / 419.0) 1224938 (570.0 / 483.0) 542635	(8.22, 1.00) (0.00, N/A, 0.0)	2360.3 683.9	0.4430 94.3 94.6	3.8028 [ 5.0000 ]	76.1%			
NEIFOSAA	(584.0 / 419.0) 1059250 (584.0 / 526.0) 642218	(8.46, 1.00) (0.01, N/A, 0.0)	3123.3 1703.2	0.6063 95.0 103.3	4.4853 [ 5.0000 ]	89.7%			
NMeFOSE	(616.0 / 59.0) 2582907	(10.33, 1.00) (0.01, N/A, 0.0)	2767.0	N/A 0.0 0.0	18.2621 [ 20.0000 ]	91.3%			
NEtFOSE	(630.0 / 59.0) 3082403	(10.52, 1.00) (0.01, N/A, 0.0)	1119.4	N/A 0.0 0.0	18.7774 [ 20.0000 ]	93.9%			
HFPO-DA	(285.0 / 169.0) 1708087 (285.0 / 185.0) 4074200	(5.79, 1.00) (0.00, N/A, 0.1)	3308.4 4668.3	2.3852 88.6 97.6	11.3113 [ 10.0000 ]	113.1%			
ADONA	(377.0 / 85.0) 5314045 (377.0 / 251.0) 540135	(6.54, 1.13) (N/A, -0.07, 0.1)	4239.1 2412.8	0.1016 105.2 101.1	8.9512 [ 9.4270 ]	95.0%			
9CI-Pf3ONS	(531.0 / 351.0) 19874000 (533.0 / 353.0) 6328213	(8.66, 1.50) (N/A, -0.04, 0.1)	2640.9 2997.0	0.3184 99.8 102.8	12.4194 [ 9.3325 ]	133.1%			CV2,
11CI-PF3OUDS	(631.0 / 451.0) 11281638 (633.0 / 453.0) 4360263	(9.15, 1.58) (N/A, -0.02, -0.1)	6047.1 5456.9	0.3865 116.1 106.7	11.9466 [ 9.4321 ]	126.7%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 139904 (241.0 / 117.0) 207937	(4.08, 0.90) (N/A, -0.06, 0.1)	2036.5 1306.2	1.4863 72.9 112.5	18.2513 [ 20.0000 ]	91.3%			
5:3FTCA	(341.0 / 236.7) 846031 (341.0 / 217.0) 1352399	(5.98, 1.09) (N/A, -0.07, 0.1)	1959.8 1775.4	1.5985 97.1 99.9	16.3544 [ 20.0000 ]	81.8%			
7:3FTCA	(441.0 / 317.0) 1790898 (441.0 / 337.0) 1511428	(7.65, 1.39) (N/A, -0.06, 0.1)	1803.6 2018.1	0.8439 98.5 94.0	20.6270 [ 20.0000 ]	103.1%			
PFEESA	(315.0 / 135.0) 3501685 (315.0 / 83.0) 828380	(5.90, 1.07) (N/A, -0.07, 0.0)	3596.3 2295.9	0.2366 91.3 93.2	9.2647 [ 8.9246 ]	103.8%			
PFMPA	(229.0 / 85.0) 579516	(3.95, 0.87) (N/A, -0.05, 0.0)	4852.8	N/A 0.0 0.0	8.8416 [ 10.0000 ]	88.4%			
PFMBA	(279.0 / 85.0) 1804148	(4.86, 1.07) (N/A, -0.08, 0.0)	6769.7	N/A 0.0 0.0	8.6182 [ 10.0000 ]	86.2%			
NFDHA	(295.0 / 201.0) 1861952 (295.0 / 85.0) 1498509	(5.40, 0.98) (N/A, -0.07, -0.2)	3961.3 5089.6	0.8048 80.1 88.6	10.8372 [ 10.0000 ]	108.4%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [ 5.0000 ]	N/A%			CV2,
13C3_PFBA_IIS	(216.0 / 172.0) 131031	(3.59, N/A) (N/A, -0.05, N/A)	1844.2	N/A	0.6117 [ 1.0000 ]	61.2% { 89.7% }			IS1,
13C2_PFHxA_IIS	(315.0 / 270.0) 173574	(5.49, N/A) (N/A, -0.07, N/A)	3201.5	N/A	0.5527 [ 1.0000 ]	55.3% { 85.3% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 371593	(6.95, N/A) (N/A, -0.06, N/A)	3955.7	N/A	0.8046 [ 1.0000 ]	80.5% { 96.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 349694	(7.55, N/A) (N/A, -0.06, N/A)	8438.9	N/A	0.8380 [ 1.0000 ]	83.8% { 88.1% }			
13C2_PFDA_IIS	(515.0 / 470.1) 391626	(8.11, N/A) (N/A, -0.06, N/A)	1939086.6	N/A	0.9751 [ 1.0000 ]	97.5% { 106.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 444402	(7.09, N/A) (N/A, -0.07, N/A)	318.9	N/A	0.6546 [ 1.0000 ]	65.5% { 97.4% }			IS1,
13C4_PFOS_IIS	(503.0 / 79.9) 911934	(8.31, N/A) (N/A, -0.06, N/A)	1396.6	N/A	1.0628 [ 1.0000 ]	106.3% { 103.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1325734	(3.59, N/A) (N/A, -0.05, N/A)	5491.7	N/A	8.5018 [ 8.0000 ]	106.3% { 89.3% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1157901	(4.52, N/A) (N/A, -0.07, N/A)	4129.3	N/A	5.7747 [ 4.0000 ]	144.4% { 98.9% }			S2,
13C5_PFHxA_EIS	(318.0 / 273.0) 681765	(5.49, N/A) (N/A, -0.07, N/A)	2294.1	N/A	2.8180 [ 2.0000 ]	140.9% { 89.6% }			S2,
13C4_PFHpA_EIS	(367.0 / 322.0) 737273	(6.27, N/A) (N/A, -0.07, N/A)	3309.6	N/A	3.1991 [ 2.0000 ]	160.0% { 97.8% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 844830	(6.95, N/A) (N/A, -0.06, N/A)	6298.2	N/A	2.0927 [ 2.0000 ]	104.6% { 89.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 417112	(7.55, N/A) (N/A, -0.06, N/A)	1959.3	N/A	1.1226 [ 1.0000 ]	112.3% { 91.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 543699	(8.11, N/A) (N/A, -0.06, N/A)	1817.2	N/A	1.1535 [ 1.0000 ]	115.4% { 108.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 522674	(8.60, N/A) (N/A, -0.04, N/A)	2062.3	N/A	0.9946 [ 1.0000 ]	99.5% { 98.5% }			
13C2_PFDa_EIS	(615.0 / 570.0) 495234	(8.89, N/A) (N/A, -0.03, N/A)	1494.9	N/A	1.0781 [ 1.0000 ]	107.8% { 106.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 398135	(9.27, N/A) (N/A, -0.02, N/A)	1657.4	N/A	0.8217 [ 1.0000 ]	82.2% { 103.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1508919	(5.47, N/A) (N/A, -0.07, N/A)	4050.7	N/A	2.1432 [ 2.0000 ]	107.2% { 89.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1048904	(7.09, N/A) (N/A, -0.05, N/A)	2869.6	N/A	2.2941 [ 2.0000 ]	114.7% { 80.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2715805	(8.31, N/A) (N/A, -0.06, N/A)	1342.3	N/A	2.2212 [ 2.0000 ]	111.1% { 101.7% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 271728	(5.24, N/A) (N/A, -0.07, N/A)	1420.0	N/A	6.0846 [ 4.0000 ]	152.1% { 93.2% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 358294	(6.68, N/A) (N/A, -0.06, N/A)	1860.0	N/A	6.1108 [ 4.0000 ]	152.8% { 93.5% }			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 474072	(7.85, N/A) (N/A, -0.06, N/A)	2032.3	N/A	7.4634 [ 4.0000 ]	186.6% { 100.3% }			S2,
13C8_PFOsa_EIS	(506.0 / 78.0) 3866760	(9.76, N/A) (N/A, -0.01, N/A)	3309.5	N/A	1.8489 [ 2.0000 ]	92.4% { 99.2% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 720378	(10.40, N/A) (N/A, -0.01, N/A)	2475.7	N/A	1.3463 [ 2.0000 ]	67.3% { 114.9% }			S1,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT- CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 703827	(10.57, N/A) (N/A, -0.01, N/A)	2990.5	N/A	1.4451 [ 2.0000 ]	72.3% { 126.4% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 1251029	(8.22, N/A) (N/A, -0.05, N/A)	2341.0	N/A	5.9835 [ 4.0000 ]	149.6% { 128.9% }			S2,
D5_EiFOSAA_EIS	(589.0 / 419.0) 1127462	(8.46, N/A) (N/A, -0.05, N/A)	4101.6	N/A	4.8117 [ 4.0000 ]	120.3% { 135.6% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2856156	(10.33, N/A) (N/A, -0.01, N/A)	2100.1	N/A	17.1534 [ 20.0000 ]	85.8% { 112.6% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 3396673	(10.51, N/A) (N/A, -0.01, N/A)	1395.3	N/A	17.2836 [ 20.0000 ]	86.4% { 108.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1519624	(5.79, N/A) (N/A, -0.07, N/A)	3469.5	N/A	11.3741 [ 8.0000 ]	142.2% { 96.9% }			S2,

## ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC00916  
 Calibration: 2310010

SDG:  
 Project: Red Hill AFFF Assessment Sam  
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC00916-ICB1	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00	ng/mL	0.10	U
	PFOA	0.0136	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.0203	ng/mL	0.10	U
	PFBS	0.00	ng/mL	0.10	U
	PFPEs	0.00	ng/mL	0.10	U
	PFHXS	0.00	ng/mL	0.10	U
	PFHPS	0.00	ng/mL	0.10	U
	PFOS	0.00	ng/mL	0.10	U
	PFNS	0.00	ng/mL	0.10	U
	PFDS	0.00	ng/mL	0.10	U
	PFDOS	0.00	ng/mL	0.10	U
	4:2FTS	0.00	ng/mL	0.40	U
	6:2FTS	0.00	ng/mL	0.40	U
	8:2FTS	0.00	ng/mL	0.40	U
	PFOSA	0.00	ng/mL	0.10	U
	NMeFOSA	0.00	ng/mL	0.40	U
	NEtFOSA	0.00	ng/mL	0.40	U
	NMeFOSAA	0.0168	ng/mL	0.10	U
	NEtFOSAA	0.0225	ng/mL	0.10	U
	NMeFOSE	0.0804	ng/mL	0.40	U
	NEtFOSE	0.0948	ng/mL	0.40	U
	HFPO-DA	0.00	ng/mL	0.20	U
	ADONA	0.00	ng/mL	0.20	U
	PFEESA	0.00	ng/mL	0.20	U
	PFMPA	0.00	ng/mL	0.20	U

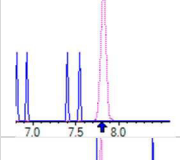
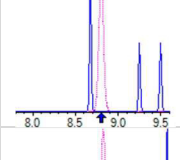
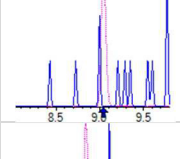


## ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC00916  
 Calibration: 2310010

SDG:  
 Project: Red Hill AFFF Assessment Sam  
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC00916-ICB1	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.0478	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	7.20	ng/mL		
	13C5-PFPEA	3.76	ng/mL		
	13C5-PFHXA	1.79	ng/mL		
	13C4-PFHPA	1.69	ng/mL		
	13C8-PFOA	1.76	ng/mL		
	13C9-PFNA	0.736	ng/mL		
	13C6-PFDA	0.824	ng/mL		
	13C7-PFUnA	0.889	ng/mL		
	13C2-PFDOA	1.02	ng/mL		
	13C2-PFTEDA	0.868	ng/mL		
	13C3-PFBS	1.99	ng/mL		
	13C3-PFHXS	1.80	ng/mL		
	13C8-PFOS	1.75	ng/mL		
	13C2-4:2FTS	3.79	ng/mL		
	13C2-6:2FTS	3.39	ng/mL		
	13C2-8:2FTS	3.41	ng/mL		
	13C8-PFOSA	1.85	ng/mL		
	D3-NMEFOSA	1.75	ng/mL		
	D5-NETFOSA	1.94	ng/mL		
	D3-NMEFOSAA	3.13	ng/mL		
	D5-NETFOSAA	3.41	ng/mL		
	D7-NMEFOSE	18.5	ng/mL		
	D9-NETFOSE	19.4	ng/mL		
	13C3-HFPO-DA	7.53	ng/mL		

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) N/A (363.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOA	(413.0 / 369.0) 5598 (413.0 / 169.0) 1649	(7.21, 1.00) (0.00, N/A, 1.3)	1765.2 714.9	0.2945 84.5 84.5	0.0136	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) 7244 (713.0 / 169.0) 2099	(9.40, 1.00) (0.00, N/A, -1.1)	31.4 178.5	0.2897 151.6 151.6	0.0203	N/A			IR2,

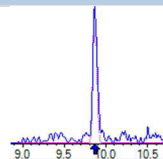
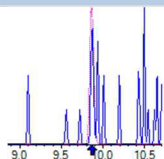
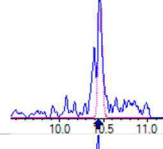
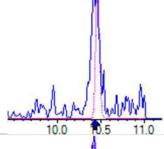
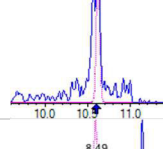
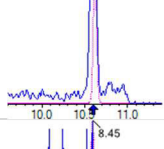
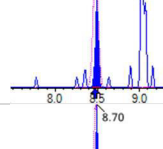
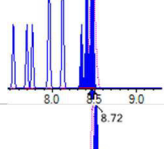
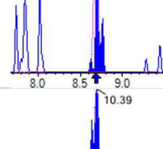
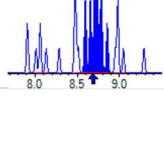
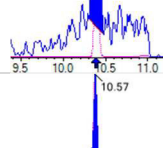
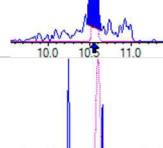
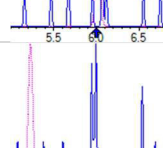
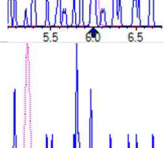
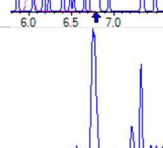
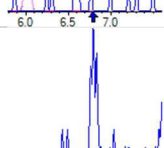
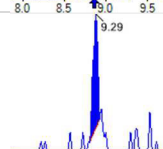
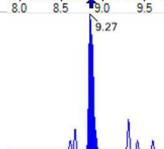
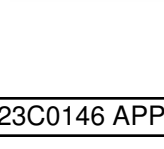
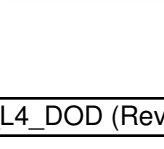


Chemist: DAG  
Instrument: Saphira  
Type: Sciex Q3 5500

Sample I.D.: SC00916-ICB1  
DF, IV: 1, 10.0µL  
Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
Path: S2023-03-07A (9)  
Acquired: 2023/03/07 - 17:09

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	( 299.0 / 80.0 ) N/A ( 299.0 / 99.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	( 349.0 / 80.0 ) N/A ( 349.0 / 99.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxS	( 399.0 / 80.0 ) N/A ( 399.0 / 99.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	( 449.0 / 80.0 ) N/A ( 449.0 / 99.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	( 499.0 / 80.0 ) N/A ( 499.0 / 99.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	( 549.0 / 80.0 ) N/A ( 549.0 / 99.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	( 599.0 / 80.0 ) N/A ( 599.0 / 99.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	( 699.0 / 80.0 ) N/A ( 699.0 / 99.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	( 327.0 / 307.0 ) N/A ( 327.0 / 81.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	( 427.0 / 407.0 ) N/A ( 427.0 / 81.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	( 527.0 / 507.0 ) N/A ( 527.0 / 81.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A )	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEIFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) 2697 (570.0 / 483.0) 1245	(8.49, 1.00) (0.02, N/A, 2.5)	1510.5 446.0	0.4614 98.2 98.2	0.0168	N/A			
NEIFOSAA	(584.0 / 419.0) 3590 (584.0 / 526.0) 4622	(8.70, 1.00) (0.01, N/A, -1.5)	1564.3 146.5	1.2877 201.7 201.7	0.0225	N/A			IR2,
NMeFOSE	(616.0 / 59.0) 11691	(10.39, 1.00) (0.00, N/A, 0.0)	22.1	N/A 0.0 0.0	0.0804	N/A			
NEIFOSE	(630.0 / 59.0) 16668	(10.57, 1.00) (0.01, N/A, 0.0)	20.8	N/A 0.0 0.0	0.0948	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-PF3OUDS	(631.0 / 451.0) 6356 (633.0 / 453.0) 5900	(9.29, 1.54) (N/A, 0.00, 1.2)	9.7 245.8	0.9282 278.7 278.7	0.0478	N/A			IR2,



Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-ICB1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (9)  
 Acquired: 2023/03/07 - 17:09

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 232842	(3.69, N/A) (N/A, 0.00, N/A)	2043.3	N/A	1.0870 [ 1.0000 ]	108.7% { 115.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 319636	(5.71, N/A) (N/A, 0.02, N/A)	3374.6	N/A	1.0177 [ 1.0000 ]	101.8% { 112.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 474636	(7.21, N/A) (N/A, 0.02, N/A)	3052.6	N/A	1.0278 [ 1.0000 ]	102.8% { 113.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 445306	(7.82, N/A) (N/A, 0.03, N/A)	364.9	N/A	1.0671 [ 1.0000 ]	106.7% { 115.4% }			

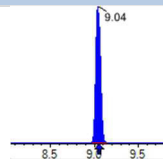
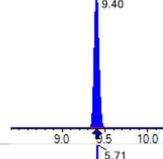
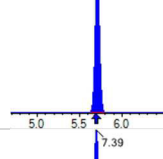
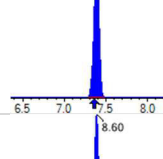
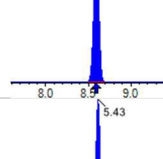
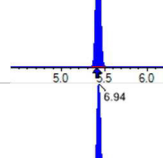
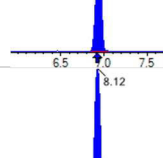
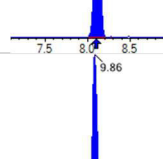
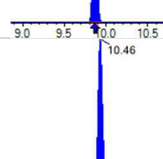
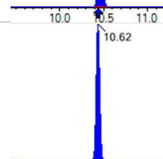
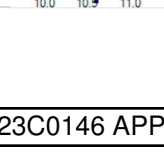


Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-ICB1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (9)  
 Acquired: 2023/03/07 - 17:09

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.0 / 470.1) 388299	(8.39, N/A) (N/A, 0.01, N/A)	210.7	N/A	0.9668 [ 1.0000 ]	96.7% { 101.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 647647	(7.39, N/A) (N/A, 0.03, N/A)	4282.3	N/A	0.9539 [ 1.0000 ]	95.4% { 108.2% }			
13C4_PFOS_IIS	(503.0 / 79.9) 868682	(8.60, N/A) (N/A, 0.01, N/A)	2002.7	N/A	1.0124 [ 1.0000 ]	101.2% { 104.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1994127	(3.68, N/A) (N/A, 0.00, N/A)	7087.2	N/A	7.1965 [ 8.0000 ]	90.0% { 94.2% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1387209	(4.75, N/A) (N/A, 0.01, N/A)	5017.5	N/A	3.7569 [ 4.0000 ]	93.9% { 92.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 797367	(5.71, N/A) (N/A, 0.02, N/A)	4316.1	N/A	1.7897 [ 2.0000 ]	89.5% { 91.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 716060	(6.52, N/A) (N/A, 0.01, N/A)	2684.9	N/A	1.6872 [ 2.0000 ]	84.4% { 84.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 908919	(7.21, N/A) (N/A, 0.02, N/A)	2391.1	N/A	1.7627 [ 2.0000 ]	88.1% { 89.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 348058	(7.82, N/A) (N/A, 0.03, N/A)	4426058.7	N/A	0.7356 [ 1.0000 ]	73.6% { 75.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 385290	(8.39, N/A) (N/A, 0.01, N/A)	6025.3	N/A	0.8244 [ 1.0000 ]	82.4% { 76.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 463187	(8.80, N/A) (N/A, 0.01, N/A)	965.7	N/A	0.8890 [ 1.0000 ]	88.9% { 88.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 465466	(9.04, N/A) (N/A, 0.00, N/A)	8419.9	N/A	1.0219 [ 1.0000 ]	102.2% { 101.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 417100	(9.40, N/A) (N/A, 0.00, N/A)	1612.0	N/A	0.8683 [ 1.0000 ]	86.8% { 83.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 2045070	(5.71, N/A) (N/A, 0.02, N/A)	4131.7	N/A	1.9932 [ 2.0000 ]	99.7% { 90.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1201286	(7.39, N/A) (N/A, 0.03, N/A)	3380.1	N/A	1.8028 [ 2.0000 ]	90.1% { 84.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2036595	(8.60, N/A) (N/A, 0.01, N/A)	1860.5	N/A	1.7486 [ 2.0000 ]	87.4% { 87.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 246626	(5.43, N/A) (N/A, 0.02, N/A)	1749.7	N/A	3.7894 [ 4.0000 ]	94.7% { 91.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 289642	(6.94, N/A) (N/A, 0.02, N/A)	2307.3	N/A	3.3897 [ 4.0000 ]	84.7% { 78.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 315826	(8.12, N/A) (N/A, 0.02, N/A)	1116.3	N/A	3.4117 [ 4.0000 ]	85.3% { 82.4% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3692427	(9.86, N/A) (N/A, 0.01, N/A)	4298.6	N/A	1.8535 [ 2.0000 ]	92.7% { 87.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 892287	(10.46, N/A) (N/A, 0.02, N/A)	2397.8	N/A	1.7506 [ 2.0000 ]	87.5% { 81.9% }			
D5_NeIFOSA_EIS	(531.0 / 169.0) 898022	(10.62, N/A) (N/A, 0.02, N/A)	4467.0	N/A	1.9356 [ 2.0000 ]	96.8% { 86.7% }			



Chemist: DAG  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC00916-ICB1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-07A  
 Path: S2023-03-07A (9)  
 Acquired: 2023/03/07 - 17:09

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 623733	( 8.48 , N/A ) ( N/A , 0.01 , N/A )	2634.9	N/A	3.1317 [ 4.0000 ]	78.3% { 77.9% }			
D5_EtFOSAA_EIS	( 589.0 / 419.0 ) 761280	( 8.68 , N/A ) ( N/A , 0.01 , N/A )	10745755.0	N/A	3.4107 [ 4.0000 ]	85.3% { 88.7% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 2935780	( 10.39 , N/A ) ( N/A , 0.02 , N/A )	1583.5	N/A	18.5095 [ 20.0000 ]	92.5% { 87.1% }			
D9_NEtFOSE_EIS	( 639.0 / 58.9 ) 3638490	( 10.56 , N/A ) ( N/A , 0.02 , N/A )	1855.7	N/A	19.4359 [ 20.0000 ]	97.2% { 87.6% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1851667	( 6.02 , N/A ) ( N/A , 0.02 , N/A )	3811.1	N/A	7.5261 [ 8.0000 ]	94.1% { 91.7% }			



## ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC01124  
 Calibration: 2310010

SDG:  
 Project: Red Hill AFFF Assessment Sam  
 Instrument: Saphira

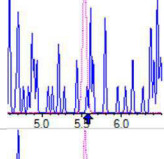
Lab Sample ID	Analyte	Found	Units	RL	C
SC01124-CCB1	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00854	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.00	ng/mL	0.10	U
	PFBS	0.00	ng/mL	0.10	U
	PFPEs	0.000452	ng/mL	0.10	U
	PFHXS	0.00	ng/mL	0.10	U
	PFHPS	0.00	ng/mL	0.10	U
	PFOS	0.0293	ng/mL	0.10	U
	PFNS	0.00	ng/mL	0.10	U
	PFDS	0.00	ng/mL	0.10	U
	PFDOS	0.00	ng/mL	0.10	U
	4:2FTS	0.00	ng/mL	0.40	U
	6:2FTS	0.00	ng/mL	0.40	U
	8:2FTS	0.00	ng/mL	0.40	U
	PFOSA	0.00	ng/mL	0.10	U
	NMeFOSA	0.00	ng/mL	0.40	U
	NEtFOSA	0.00	ng/mL	0.40	U
	NMeFOSAA	0.00	ng/mL	0.10	U
	NEtFOSAA	0.00	ng/mL	0.10	U
	NMeFOSE	0.00	ng/mL	0.40	U
	NEtFOSE	0.00	ng/mL	0.40	U
	HFPO-DA	0.00	ng/mL	0.20	U
	ADONA	0.00	ng/mL	0.20	U
	PFEESA	0.00	ng/mL	0.20	U
	PFMPA	0.00	ng/mL	0.20	U

## ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC01124  
 Calibration: 2310010

SDG:  
 Project: Red Hill AFFF Assessment Sam  
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC01124-CCB1	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	7.77	ng/mL		
	13C5-PFPEA	4.18	ng/mL		
	13C5-PFHXA	2.21	ng/mL		
	13C4-PFHPA	2.50	ng/mL		
	13C8-PFOA	1.82	ng/mL		
	13C9-PFNA	0.910	ng/mL		
	13C6-PFDA	0.823	ng/mL		
	13C7-PFUnA	0.868	ng/mL		
	13C2-PFDOA	0.917	ng/mL		
	13C2-PFTEDA	0.724	ng/mL		
	13C3-PFBS	1.75	ng/mL		
	13C3-PFHXS	1.77	ng/mL		
	13C8-PFOS	1.82	ng/mL		
	13C2-4:2FTS	5.12	ng/mL		
	13C2-6:2FTS	5.00	ng/mL		
	13C2-8:2FTS	6.09	ng/mL		
	13C8-PFOSA	1.32	ng/mL		
	D3-NMEFOSA	0.706	ng/mL		
	D5-NETFOSA	0.780	ng/mL		
	D3-NMEFOSAA	4.20	ng/mL		
	D5-NETFOSAA	3.48	ng/mL		
	D7-NMEFOSE	8.81	ng/mL		
	D9-NETFOSE	9.36	ng/mL		
	13C3-HFPO-DA	8.52	ng/mL		

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) 2253 (363.0 / 169.0) 331	(6.12, 0.97) (-0.19, N/A, -11.6)	17.8 42.1	0.1467 45.0 57.8	0.0085	N/A			IR1,
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



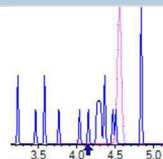
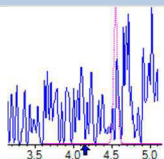
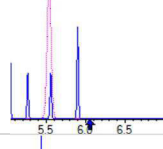
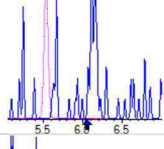
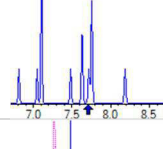
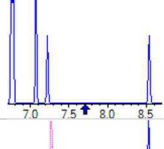
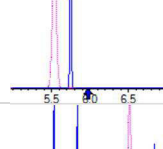
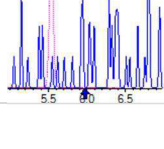
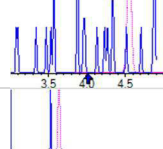
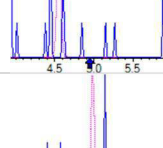
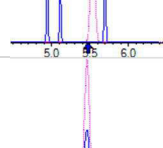
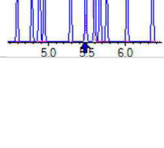
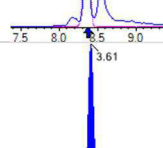
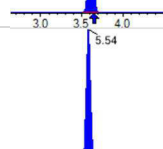
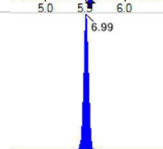
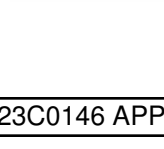
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 Instrument: Saphira  
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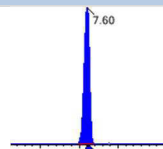
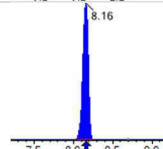
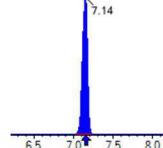
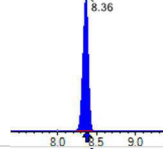
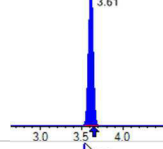
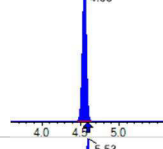
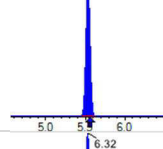
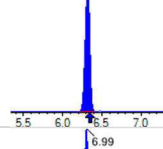
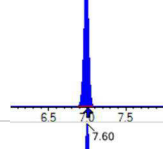
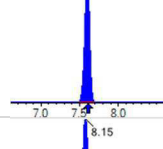
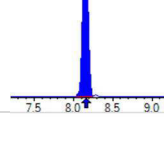
Sample I.D.: SC01124-CCB1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

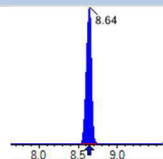
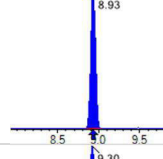
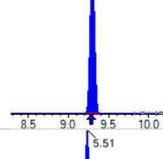
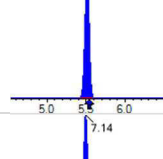
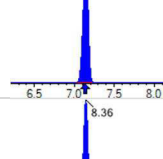
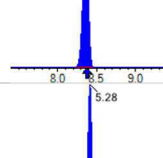
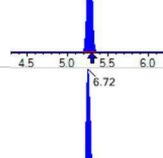
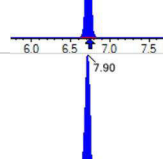
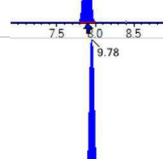
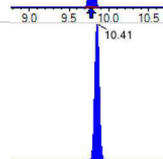
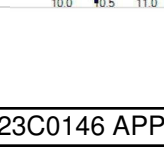
Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (1)  
 Acquired: 2023/03/21 - 13:57

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) 341 (349.0 / 99.0) 619	(6.33, 0.89) (N/A, -0.09, -30.5)	4919.9 265.9	1.8143 531.0 547.0	0.0005	N/A			IR2,
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) 35581 (499.0 / 99.0) 6009	(8.36, 1.00) (0.00, N/A, 0.2)	44.3 16.1	0.1689 78.0 77.7	0.0293	N/A			M12 ABK 3/22/23
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

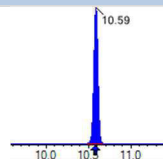
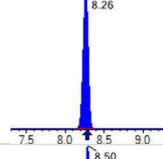
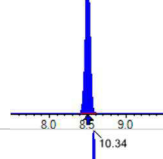
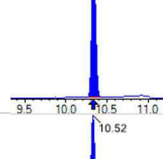
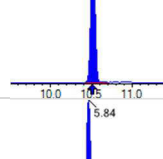
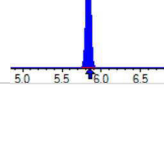
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CVmin, $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 129241	(3.61, N/A) (N/A, -0.04, N/A)	1595.8	N/A	0.6034 [ 1.0000 ]	60.3% { 88.5% }			IS1,
13C2_PFHxA_IIS	(315.0 / 270.0) 188186	(5.54, N/A) (N/A, -0.02, N/A)	11410.4	N/A	0.5992 [ 1.0000 ]	59.9% { 92.4% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 344725	(6.99, N/A) (N/A, -0.02, N/A)	256.5	N/A	0.7465 [ 1.0000 ]	74.6% { 89.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CVmin, $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 372360	(7.60, N/A) (N/A, -0.01, N/A)	6626.5	N/A	0.8923 [1.0000]	89.2% {93.8%}			
13C2_PFDA_IIS	(515.0 / 470.1) 385035	(8.16, N/A) (N/A, -0.01, N/A)	4483.4	N/A	0.9587 [1.0000]	95.9% {104.9%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 501530	(7.14, N/A) (N/A, -0.02, N/A)	6830.8	N/A	0.7387 [1.0000]	73.9% {109.9%}			
13C4_PFOS_IIS	(503.0 / 79.9) 881272	(8.36, N/A) (N/A, -0.01, N/A)	1160.9	N/A	1.0271 [1.0000]	102.7% {100.4%}			
13C4_PFBA_EIS	(217.0 / 172.0) 1195072	(3.61, N/A) (N/A, -0.03, N/A)	5328.7	N/A	7.7700 [8.0000]	97.1% {80.5%}			
13C5_PFPeA_EIS	(268.0 / 223.0) 907710	(4.55, N/A) (N/A, -0.04, N/A)	3251.2	N/A	4.1754 [4.0000]	104.4% {77.5%}			
13C5_PFHxA_EIS	(318.0 / 273.0) 578388	(5.53, N/A) (N/A, -0.03, N/A)	2603.7	N/A	2.2051 [2.0000]	110.3% {76.0%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 625346	(6.32, N/A) (N/A, -0.02, N/A)	2157.1	N/A	2.5028 [2.0000]	125.1% {83.0%}			
13C8_PFOA_EIS	(421.0 / 376.0) 681765	(6.99, N/A) (N/A, -0.02, N/A)	1692.4	N/A	1.8204 [2.0000]	91.0% {72.1%}			
13C9_PFNA_EIS	(472.0 / 427.0) 360126	(7.60, N/A) (N/A, -0.01, N/A)	7355.6	N/A	0.9102 [1.0000]	91.0% {79.3%}			
13C6_PFDA_EIS	(519.0 / 474.0) 381205	(8.15, N/A) (N/A, -0.01, N/A)	23616.1	N/A	0.8226 [1.0000]	82.3% {76.0%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT- CVmin, $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 448664	(8.64, N/A) (N/A, 0.00, N/A)	925.6	N/A	0.8684 [1.0000]	86.8% {84.5%}			
13C2_PFDa_EIS	(615.0 / 570.0) 413973	(8.93, N/A) (N/A, 0.01, N/A)	1652.7	N/A	0.9166 [1.0000]	91.7% {89.3%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 344992	(9.30, N/A) (N/A, 0.01, N/A)	742.2	N/A	0.7243 [1.0000]	72.4% {89.6%}			
13C3_PFBs_EIS	(302.0 / 80.0) 1390578	(5.51, N/A) (N/A, -0.03, N/A)	2446.7	N/A	1.7501 [2.0000]	87.5% {82.9%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 914644	(7.14, N/A) (N/A, 0.00, N/A)	2691.7	N/A	1.7726 [2.0000]	88.6% {69.8%}			
13C8_PFOS_EIS	(507.0 / 80.0) 2149385	(8.36, N/A) (N/A, -0.01, N/A)	2348.1	N/A	1.8191 [2.0000]	91.0% {80.5%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 258176	(5.28, N/A) (N/A, -0.03, N/A)	1955.9	N/A	5.1226 [4.0000]	128.1% {88.6%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 330978	(6.72, N/A) (N/A, -0.02, N/A)	1710.6	N/A	5.0019 [4.0000]	125.0% {86.4%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 436238	(7.90, N/A) (N/A, -0.01, N/A)	1556.0	N/A	6.0854 [4.0000]	152.1% {92.3%}			S2,
13C8_PFOsa_EIS	(506.0 / 78.0) 2666326	(9.78, N/A) (N/A, 0.01, N/A)	4332.2	N/A	1.3193 [2.0000]	66.0% {68.4%}			S1,
D3_NMeFOsa_EIS	(515.0 / 169.0) 365205	(10.41, N/A) (N/A, 0.01, N/A)	1230.4	N/A	0.7063 [2.0000]	35.3% {58.3%}			S1,



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT- CVmin, $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 367006	(10.59, N/A) (N/A, 0.01, N/A)	1788.0	N/A	0.7798 [2.0000]	39.0% {65.9%}			S1,
D3_MeFOSAA_EIS	(573.0 / 419.0) 848303	(8.26, N/A) (N/A, -0.01, N/A)	1547.3	N/A	4.1985 [4.0000]	105.0% {87.4%}			
D5_EiFOSAA_EIS	(589.0 / 419.0) 789026	(8.50, N/A) (N/A, 0.00, N/A)	4906.8	N/A	3.4845 [4.0000]	87.1% {94.9%}			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1417151	(10.34, N/A) (N/A, 0.00, N/A)	651.9	N/A	8.8072 [20.0000]	44.0% {55.9%}			S1,
D9_NEiFOSE_EIS	(639.0 / 58.9) 1778244	(10.52, N/A) (N/A, 0.00, N/A)	1271.5	N/A	9.3633 [20.0000]	46.8% {56.8%}			S1,
13C3_HFPODA_EIS	(287.0 / 169.0) 1234333	(5.84, N/A) (N/A, -0.02, N/A)	3450.5	N/A	8.5214 [8.0000]	106.5% {78.7%}			

## ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC01124  
 Calibration: 2310010

SDG:  
 Project: Red Hill AFFF Assessment Sam  
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC01124-CCB2	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00481	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.00	ng/mL	0.10	U
	PFBS	0.00	ng/mL	0.10	U
	PFPEs	0.000971	ng/mL	0.10	U
	PFHXS	0.00	ng/mL	0.10	U
	PFHPS	0.00	ng/mL	0.10	U
	PFOS	0.0221	ng/mL	0.10	U
	PFNS	0.00	ng/mL	0.10	U
	PFDS	0.00	ng/mL	0.10	U
	PFDOS	0.00	ng/mL	0.10	U
	4:2FTS	0.00	ng/mL	0.40	U
	6:2FTS	0.00	ng/mL	0.40	U
	8:2FTS	0.00	ng/mL	0.40	U
	PFOSA	0.00	ng/mL	0.10	U
	NMeFOSA	0.00	ng/mL	0.40	U
	NEtFOSA	0.00	ng/mL	0.40	U
	NMeFOSAA	0.00	ng/mL	0.10	U
	NEtFOSAA	0.00	ng/mL	0.10	U
	NMeFOSE	0.00	ng/mL	0.40	U
	NEtFOSE	0.00	ng/mL	0.40	U
	HFPO-DA	0.00	ng/mL	0.20	U
	ADONA	0.00	ng/mL	0.20	U
	PFEESA	0.00	ng/mL	0.20	U
	PFMPA	0.00	ng/mL	0.20	U

## ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC01124  
 Calibration: 2310010

SDG:  
 Project: Red Hill AFFF Assessment Sam  
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC01124-CCB2	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	7.62	ng/mL		
	13C5-PFPEA	5.06	ng/mL		
	13C5-PFHXA	2.66	ng/mL		
	13C4-PFHPA	2.97	ng/mL		
	13C8-PFOA	1.87	ng/mL		
	13C9-PFNA	0.902	ng/mL		
	13C6-PFDA	1.03	ng/mL		
	13C7-PFUnA	0.946	ng/mL		
	13C2-PFDOA	0.955	ng/mL		
	13C2-PFTEDA	0.811	ng/mL		
	13C3-PFBS	2.09	ng/mL		
	13C3-PFHXS	2.08	ng/mL		
	13C8-PFOS	1.86	ng/mL		
	13C2-4:2FTS	5.85	ng/mL		
	13C2-6:2FTS	5.36	ng/mL		
	13C2-8:2FTS	6.42	ng/mL		
	13C8-PFOSA	1.72	ng/mL		
	D3-NMEFOSA	0.980	ng/mL		
	D5-NETFOSA	0.964	ng/mL		
	D3-NMEFOSAA	4.13	ng/mL		
	D5-NETFOSAA	3.29	ng/mL		
	D7-NMEFOSE	12.4	ng/mL		
	D9-NETFOSSE	12.3	ng/mL		
	13C3-HFPO-DA	9.98	ng/mL		



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCB2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (6)  
 Acquired: 2023/03/21 - 15:02

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) 1256 (363.0 / 169.0) 707	(6.16, 0.98) (-0.15, N/A, -19.9)	11.2 76.4	0.5633 172.8 221.8	0.0048	N/A			IR2.
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

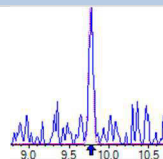
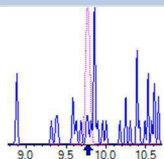
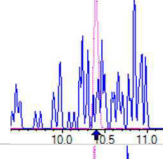
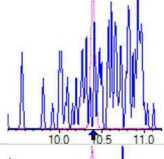
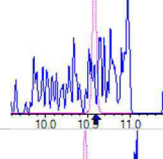
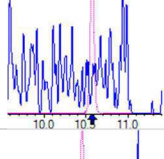
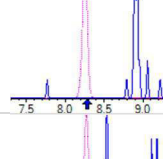
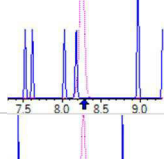
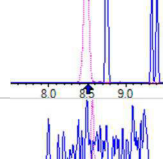
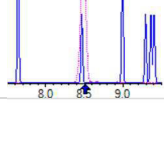
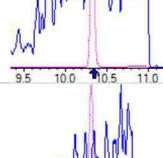
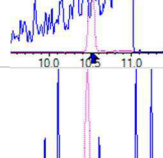
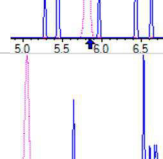
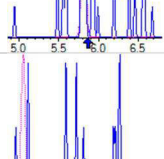
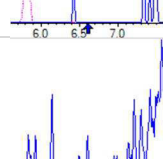
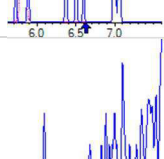
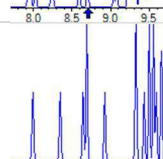
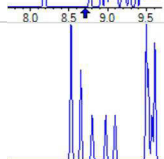
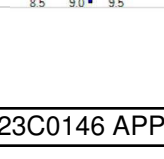
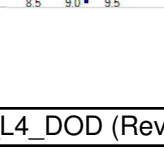


Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCB2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (6)  
 Acquired: 2023/03/21 - 15:02

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) 683 (349.0 / 99.0) 821	(6.38, 0.89) (N/A, -0.04, -3.6)	165.6 528.8	1.2021 351.8 362.4	0.0010	N/A			IR2,
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) 25666 (499.0 / 99.0) 6572	(8.34, 1.00) (0.00, N/A, 1.0)	52.3 26.7	0.2561 118.3 117.8	0.0221	N/A			M12 ABK 3/22/23
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: HGH  
Instrument: Saphira

Sample I.D.: SC01124-CCB2

DF, IV: 1, 10.0µL

Quant Method: 1633 - S2023-03-06A

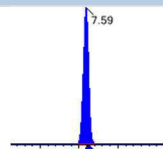
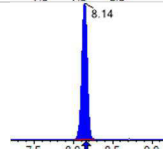
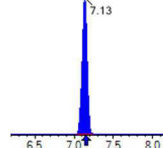
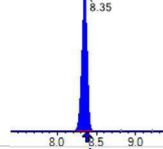
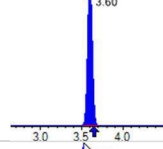
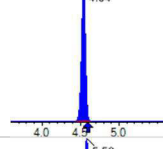
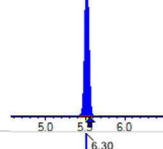
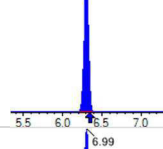
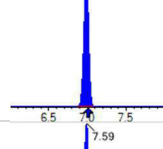
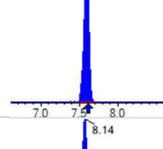
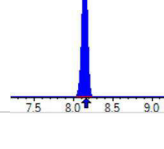
Path: S2023-03-21A (6)

Type: Sciex Q3 5500

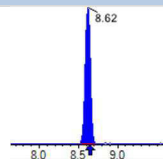
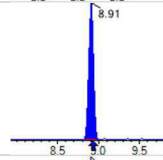
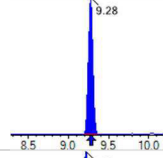
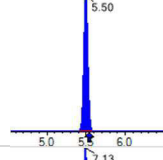
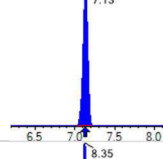
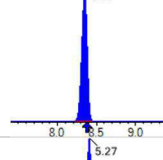
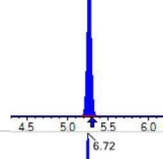
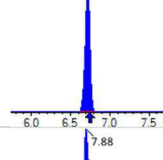
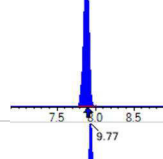
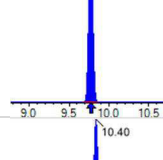
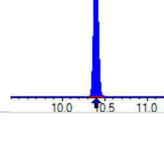
Acquisition Method: 1633 2023-03-07.dam

Acquired: 2023/03/21 - 15:02

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 134386	(3.60, N/A) (N/A, -0.04, N/A)	2043.9	N/A	0.6274 [ 1.0000 ]	62.7% { 92.0% }			IS1,
13C2_PFHxA_IIS	(315.0 / 270.0) 156863	(5.52, N/A) (N/A, -0.04, N/A)	828.2	N/A	0.4995 [ 1.0000 ]	49.9% { 77.0% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 335477	(6.98, N/A) (N/A, -0.03, N/A)	2865.2	N/A	0.7264 [ 1.0000 ]	72.6% { 86.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 342721	(7.59, N/A) (N/A, -0.02, N/A)	45100.0	N/A	0.8212 [ 1.0000 ]	82.1% { 86.3% }			
13C2_PFDA_IIS	(515.0 / 470.1) 316662	(8.14, N/A) (N/A, -0.02, N/A)	5883.7	N/A	0.7885 [ 1.0000 ]	78.8% { 86.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 398010	(7.13, N/A) (N/A, -0.03, N/A)	2059.0	N/A	0.5862 [ 1.0000 ]	58.6% { 87.2% }			IS1,
13C4_PFOS_IIS	(503.0 / 79.9) 826475	(8.35, N/A) (N/A, -0.02, N/A)	1091.1	N/A	0.9632 [ 1.0000 ]	96.3% { 94.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1218942	(3.60, N/A) (N/A, -0.05, N/A)	4878.0	N/A	7.6218 [ 8.0000 ]	95.3% { 82.1% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 917731	(4.54, N/A) (N/A, -0.05, N/A)	3682.2	N/A	5.0645 [ 4.0000 ]	126.6% { 78.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 581443	(5.52, N/A) (N/A, -0.04, N/A)	3487.2	N/A	2.6594 [ 2.0000 ]	133.0% { 76.4% }			S2,
13C4_PFHpA_EIS	(367.0 / 322.0) 619393	(6.30, N/A) (N/A, -0.04, N/A)	2377.2	N/A	2.9739 [ 2.0000 ]	148.7% { 82.2% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 680808	(6.99, N/A) (N/A, -0.02, N/A)	4883.0	N/A	1.8680 [ 2.0000 ]	93.4% { 72.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 328628	(7.59, N/A) (N/A, -0.02, N/A)	888.5	N/A	0.9024 [ 1.0000 ]	90.2% { 72.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 392160	(8.14, N/A) (N/A, -0.02, N/A)	5345.1	N/A	1.0290 [ 1.0000 ]	102.9% { 78.1% }			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 401998	(8.62, N/A) (N/A, -0.02, N/A)	1339.5	N/A	0.9461 [ 1.0000 ]	94.6% { 75.7% }			
13C2_PFDa_EIS	(615.0 / 570.0) 354717	(8.91, N/A) (N/A, -0.01, N/A)	967.4	N/A	0.9550 [ 1.0000 ]	95.5% { 76.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 317605	(9.28, N/A) (N/A, -0.01, N/A)	1139.3	N/A	0.8107 [ 1.0000 ]	81.1% { 82.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1316765	(5.50, N/A) (N/A, -0.04, N/A)	2993.8	N/A	2.0883 [ 2.0000 ]	104.4% { 78.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 853441	(7.13, N/A) (N/A, -0.01, N/A)	2057.3	N/A	2.0841 [ 2.0000 ]	104.2% { 65.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2055835	(8.35, N/A) (N/A, -0.02, N/A)	2827.0	N/A	1.8553 [ 2.0000 ]	92.8% { 77.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 233929	(5.27, N/A) (N/A, -0.04, N/A)	2063.3	N/A	5.8487 [ 4.0000 ]	146.2% { 80.3% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 281613	(6.72, N/A) (N/A, -0.03, N/A)	6339.0	N/A	5.3628 [ 4.0000 ]	134.1% { 73.5% }			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 365510	(7.88, N/A) (N/A, -0.02, N/A)	1600.7	N/A	6.4250 [ 4.0000 ]	160.6% { 77.3% }			S2,
13C8_PFOsa_EIS	(506.0 / 78.0) 3259286	(9.77, N/A) (N/A, -0.01, N/A)	4060.2	N/A	1.7196 [ 2.0000 ]	86.0% { 83.6% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 475182	(10.40, N/A) (N/A, -0.01, N/A)	2299.4	N/A	0.9799 [ 2.0000 ]	49.0% { 75.8% }			S1,



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCB2  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (6)  
 Acquired: 2023/03/21 - 15:02

Analyte	( Q1 / Q3 ) Area Counts*min	R.T. ( R.T [min], R.R.T. ) ( ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEIFOSA_EIS	( 531.0 / 169.0 ) 425719	( 10.57 , N/A ) ( N/A , -0.01 , N/A )	1993.5	N/A	0.9645 [ 2.0000 ]	48.2% { 76.5% }			S1,
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 783488	( 8.25 , N/A ) ( N/A , -0.02 , N/A )	1855.2	N/A	4.1348 [ 4.0000 ]	103.4% { 80.7% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 698817	( 8.49 , N/A ) ( N/A , -0.02 , N/A )	6927674.3	N/A	3.2907 [ 4.0000 ]	82.3% { 84.1% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 1869665	( 10.33 , N/A ) ( N/A , -0.01 , N/A )	1147.0	N/A	12.3898 [ 20.0000 ]	61.9% { 73.7% }			S1,
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 2192488	( 10.51 , N/A ) ( N/A , -0.01 , N/A )	962.0	N/A	12.3098 [ 20.0000 ]	61.5% { 70.0% }			S1,
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1205119	( 5.82 , N/A ) ( N/A , -0.04 , N/A )	4503.2	N/A	9.9810 [ 8.0000 ]	124.8% { 76.9% }			

## ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC01124  
 Calibration: 2310010

SDG:  
 Project: Red Hill AFFF Assessment Sam  
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC01124-CCB3	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00651	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.00	ng/mL	0.10	U
	PFBS	0.00	ng/mL	0.10	U
	PFPEs	0.000680	ng/mL	0.10	U
	PFHXS	0.00	ng/mL	0.10	U
	PFHPS	0.00	ng/mL	0.10	U
	PFOS	0.0247	ng/mL	0.10	U
	PFNS	0.00	ng/mL	0.10	U
	PFDS	0.00	ng/mL	0.10	U
	PFDOS	0.00	ng/mL	0.10	U
	4:2FTS	0.00	ng/mL	0.40	U
	6:2FTS	0.00	ng/mL	0.40	U
	8:2FTS	0.00	ng/mL	0.40	U
	PFOSA	0.00	ng/mL	0.10	U
	NMeFOSA	0.00	ng/mL	0.40	U
	NEtFOSA	0.00	ng/mL	0.40	U
	NMeFOSAA	0.00	ng/mL	0.10	U
	NEtFOSAA	0.00	ng/mL	0.10	U
	NMeFOSE	0.00	ng/mL	0.40	U
	NEtFOSE	0.00	ng/mL	0.40	U
	HFPO-DA	0.00	ng/mL	0.20	U
	ADONA	0.00	ng/mL	0.20	U
	PFEESA	0.00	ng/mL	0.20	U
	PFMPA	0.00	ng/mL	0.20	U

## ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC01124  
 Calibration: 2310010

SDG:  
 Project: Red Hill AFFF Assessment Sam  
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC01124-CCB3	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	7.34	ng/mL		
	13C5-PFPEA	6.25	ng/mL		
	13C5-PFHXA	3.47	ng/mL		
	13C4-PFHPA	3.62	ng/mL		
	13C8-PFOA	1.88	ng/mL		
	13C9-PFNA	0.943	ng/mL		
	13C6-PFDA	0.895	ng/mL		
	13C7-PFUnA	0.840	ng/mL		
	13C2-PFDOA	0.795	ng/mL		
	13C2-PFTEDA	0.742	ng/mL		
	13C3-PFBS	2.04	ng/mL		
	13C3-PFHXS	1.99	ng/mL		
	13C8-PFOS	1.94	ng/mL		
	13C2-4:2FTS	6.19	ng/mL		
	13C2-6:2FTS	5.37	ng/mL		
	13C2-8:2FTS	5.81	ng/mL		
	13C8-PFOSA	1.78	ng/mL		
	D3-NMEFOSA	1.16	ng/mL		
	D5-NETFOSA	1.13	ng/mL		
	D3-NMEFOSAA	4.53	ng/mL		
	D5-NETFOSAA	3.33	ng/mL		
	D7-NMEFOSE	14.2	ng/mL		
	D9-NETFOSSE	14.9	ng/mL		
	13C3-HFPO-DA	12.0	ng/mL		



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCB3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (12)  
 Acquired: 2023/03/21 - 16:19

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) 1905 (363.0 / 169.0) 826	(6.49, 1.03) (0.20, N/A, 10.5)	25.1 114.8	0.4333 132.9 170.6	0.0065	N/A			IR2.
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCB3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (12)  
 Acquired: 2023/03/21 - 16:19

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) 475 (349.0 / 99.0) 682	(6.78, 0.95) (N/A, 0.36, 26.8)	104.7 106.8	1.4373 420.7 433.3	0.0007	N/A			IR2,
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) 29855 (499.0 / 99.0) 7602	(8.33, 1.00) (-0.01, N/A, -0.6)	62.4 26.0	0.2546 117.6 117.1	0.0247	N/A			M12 ABK 3/22/23
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



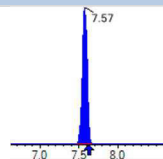
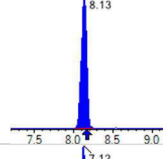
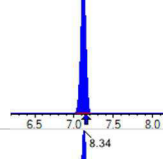
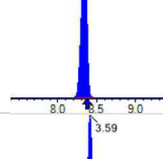
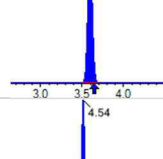
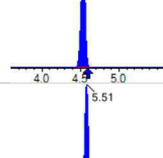
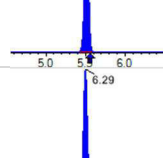
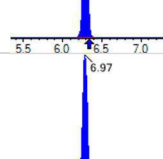
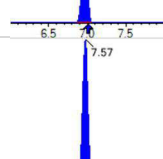
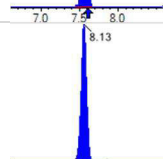
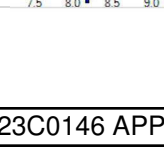
Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCB3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (12)  
 Acquired: 2023/03/21 - 16:19

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 154722	(3.60, N/A) (N/A, -0.05, N/A)	2113.5	N/A	0.7223 [ 1.0000 ]	72.2% { 106.0% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 144285	(5.52, N/A) (N/A, -0.05, N/A)	2506.1	N/A	0.4594 [ 1.0000 ]	45.9% { 70.9% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 353171	(6.97, N/A) (N/A, -0.04, N/A)	9347.8	N/A	0.7647 [ 1.0000 ]	76.5% { 91.5% }			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 375462	(7.57, N/A) (N/A, -0.04, N/A)	311353.0	N/A	0.8997 [ 1.0000 ]	90.0% { 94.6% }			
13C2_PFDA_IIS	(515.0 / 470.1) 372150	(8.13, N/A) (N/A, -0.03, N/A)	2399.0	N/A	0.9266 [ 1.0000 ]	92.7% { 101.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 412337	(7.12, N/A) (N/A, -0.04, N/A)	1847.3	N/A	0.6073 [ 1.0000 ]	60.7% { 90.4% }			IS1,
13C4_PFOS_IIS	(503.0 / 79.9) 821814	(8.34, N/A) (N/A, -0.03, N/A)	1411.5	N/A	0.9578 [ 1.0000 ]	95.8% { 93.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1351915	(3.59, N/A) (N/A, -0.05, N/A)	5986.4	N/A	7.3422 [ 8.0000 ]	91.8% { 91.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1041039	(4.54, N/A) (N/A, -0.05, N/A)	3753.3	N/A	6.2458 [ 4.0000 ]	156.1% { 88.9% }			S2,
13C5_PFHxA_EIS	(318.0 / 273.0) 698690	(5.51, N/A) (N/A, -0.05, N/A)	4669.0	N/A	3.4742 [ 2.0000 ]	173.7% { 91.8% }			S2,
13C4_PFHpA_EIS	(367.0 / 322.0) 694092	(6.29, N/A) (N/A, -0.05, N/A)	5730.5	N/A	3.6231 [ 2.0000 ]	181.2% { 92.1% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 719556	(6.97, N/A) (N/A, -0.04, N/A)	3368.9	N/A	1.8754 [ 2.0000 ]	93.8% { 76.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 376085	(7.57, N/A) (N/A, -0.04, N/A)	5252.9	N/A	0.9427 [ 1.0000 ]	94.3% { 82.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 401060	(8.13, N/A) (N/A, -0.03, N/A)	1087.1	N/A	0.8954 [ 1.0000 ]	89.5% { 79.9% }			

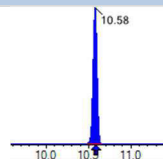
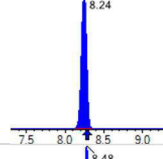
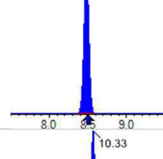
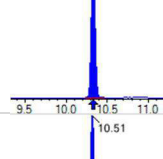
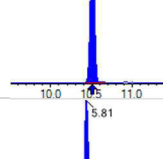
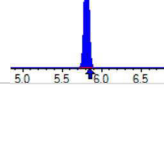


Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCB3  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (12)  
 Acquired: 2023/03/21 - 16:19

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 419338	(8.61, N/A) (N/A, -0.02, N/A)	1606.6	N/A	0.8397 [ 1.0000 ]	84.0% { 79.0% }			
13C2_PFDa_EIS	(615.0 / 570.0) 346945	(8.90, N/A) (N/A, -0.02, N/A)	2761.5	N/A	0.7948 [ 1.0000 ]	79.5% { 74.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 341471	(9.27, N/A) (N/A, -0.01, N/A)	1655.7	N/A	0.7417 [ 1.0000 ]	74.2% { 88.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1331769	(5.49, N/A) (N/A, -0.05, N/A)	3724.1	N/A	2.0387 [ 2.0000 ]	101.9% { 79.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 846139	(7.12, N/A) (N/A, -0.02, N/A)	2287.3	N/A	1.9945 [ 2.0000 ]	99.7% { 64.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2141432	(8.33, N/A) (N/A, -0.03, N/A)	2762.9	N/A	1.9435 [ 2.0000 ]	97.2% { 80.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 256356	(5.25, N/A) (N/A, -0.05, N/A)	1700.6	N/A	6.1868 [ 4.0000 ]	154.7% { 88.0% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 292394	(6.71, N/A) (N/A, -0.04, N/A)	3744.3	N/A	5.3746 [ 4.0000 ]	134.4% { 76.3% }			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 342180	(7.87, N/A) (N/A, -0.03, N/A)	1446.3	N/A	5.8059 [ 4.0000 ]	145.1% { 72.4% }			S2,
13C8_PFOsa_EIS	(506.0 / 78.0) 3358332	(9.77, N/A) (N/A, -0.01, N/A)	4127.3	N/A	1.7819 [ 2.0000 ]	89.1% { 86.2% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 557425	(10.40, N/A) (N/A, 0.00, N/A)	2421.4	N/A	1.1560 [ 2.0000 ]	57.8% { 88.9% }			S1,

Analyte	( Q1 / Q3 ) Area Counts*min	R.T. ( R.T [min], R.R.T. ) ( ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	( 531.0 / 169.0 ) 494490	( 10.58 , N/A ) ( N/A , -0.01 , N/A )	2583.7	N/A	1.1266 [ 2.0000 ]	56.3% { 88.8% }			S1,
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 852645	( 8.24 , N/A ) ( N/A , -0.03 , N/A )	2321.9	N/A	4.5253 [ 4.0000 ]	113.1% { 87.9% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 703283	( 8.48 , N/A ) ( N/A , -0.02 , N/A )	80912.9	N/A	3.3305 [ 4.0000 ]	83.3% { 84.6% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 2123902	( 10.33 , N/A ) ( N/A , 0.00 , N/A )	1333.4	N/A	14.1544 [ 20.0000 ]	70.8% { 83.7% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 2647335	( 10.51 , N/A ) ( N/A , 0.00 , N/A )	1294.7	N/A	14.9479 [ 20.0000 ]	74.7% { 84.6% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1328929	( 5.81 , N/A ) ( N/A , -0.05 , N/A )	3162.4	N/A	11.9660 [ 8.0000 ]	149.6% { 84.8% }			S2,

## ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC01124  
 Calibration: 2310010

SDG:  
 Project: Red Hill AFFF Assessment Sam  
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC01124-CCB4	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00570	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.00	ng/mL	0.10	U
	PFBS	0.00	ng/mL	0.10	U
	PFPEs	0.000790	ng/mL	0.10	U
	PFHXS	0.00	ng/mL	0.10	U
	PFHPS	0.00	ng/mL	0.10	U
	PFOS	0.0216	ng/mL	0.10	U
	PFNS	0.00	ng/mL	0.10	U
	PFDS	0.00	ng/mL	0.10	U
	PFDOS	0.00	ng/mL	0.10	U
	4:2FTS	0.00	ng/mL	0.40	U
	6:2FTS	0.00	ng/mL	0.40	U
	8:2FTS	0.00	ng/mL	0.40	U
	PFOSA	0.00	ng/mL	0.10	U
	NMeFOSA	0.00	ng/mL	0.40	U
	NEtFOSA	0.00	ng/mL	0.40	U
	NMeFOSAA	0.00	ng/mL	0.10	U
	NEtFOSAA	0.00	ng/mL	0.10	U
	NMeFOSE	0.00	ng/mL	0.40	U
	NEtFOSE	0.00	ng/mL	0.40	U
	HFPO-DA	0.00	ng/mL	0.20	U
	ADONA	0.00	ng/mL	0.20	U
	PFEESA	0.00	ng/mL	0.20	U
	PFMPA	0.00	ng/mL	0.20	U

## ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC01124  
 Calibration: 2310010

SDG:  
 Project: Red Hill AFFF Assessment Sam  
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC01124-CCB4	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	7.45	ng/mL		
	13C5-PFPEA	4.68	ng/mL		
	13C5-PFHXA	2.27	ng/mL		
	13C4-PFHPA	2.74	ng/mL		
	13C8-PFOA	1.78	ng/mL		
	13C9-PFNA	0.925	ng/mL		
	13C6-PFDA	0.912	ng/mL		
	13C7-PFUnA	0.867	ng/mL		
	13C2-PFDOA	0.895	ng/mL		
	13C2-PFTEDA	0.775	ng/mL		
	13C3-PFBS	1.97	ng/mL		
	13C3-PFHXS	1.87	ng/mL		
	13C8-PFOS	1.86	ng/mL		
	13C2-4:2FTS	5.19	ng/mL		
	13C2-6:2FTS	4.98	ng/mL		
	13C2-8:2FTS	5.79	ng/mL		
	13C8-PFOSA	1.78	ng/mL		
	D3-NMEFOSA	1.24	ng/mL		
	D5-NETFOSA	1.27	ng/mL		
	D3-NMEFOSAA	4.57	ng/mL		
	D5-NETFOSAA	3.28	ng/mL		
	D7-NMEFOSE	15.8	ng/mL		
	D9-NETFOSSE	16.8	ng/mL		
	13C3-HFPO-DA	9.07	ng/mL		



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCB4  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (37)  
 Acquired: 2023/03/21 - 21:41

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) 1656 (363.0 / 169.0) 466	(6.15, 0.98) (-0.12, N/A, -20.4)	40.8 104.0	0.2816 86.4 110.9	0.0057	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

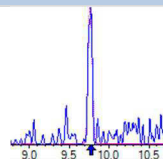
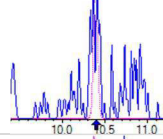
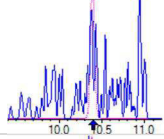
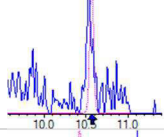
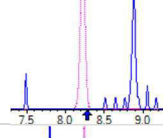
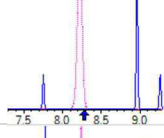
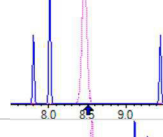
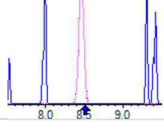
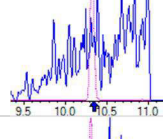
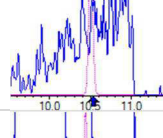
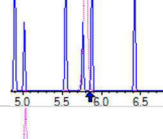
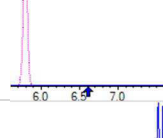
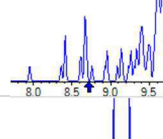
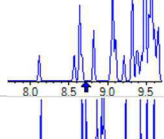
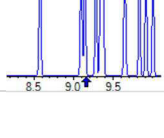


Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

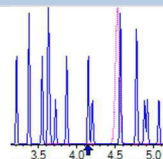
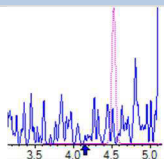
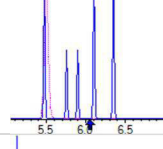
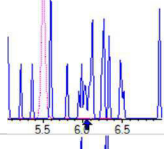
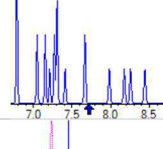
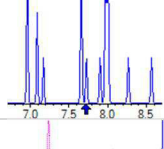
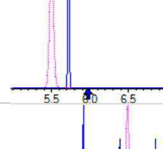
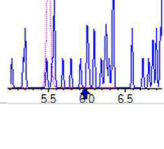
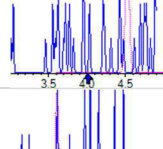
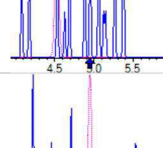
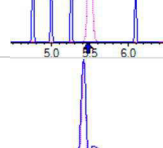
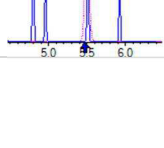
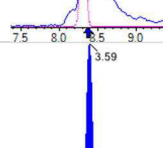
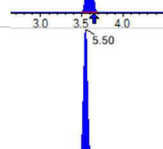
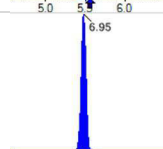
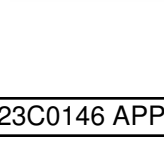
Sample I.D.: SC01124-CCB4  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

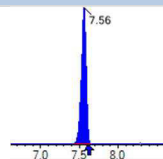
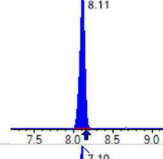
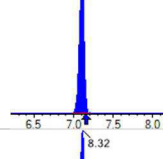
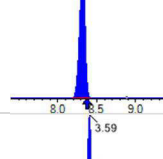
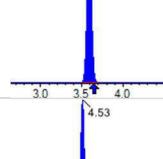
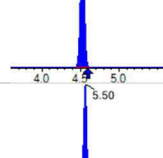
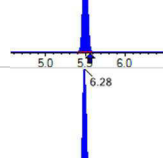
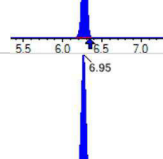
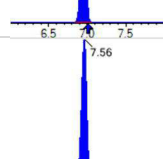
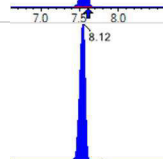
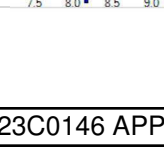
Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (37)  
 Acquired: 2023/03/21 - 21:41

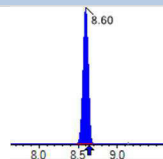
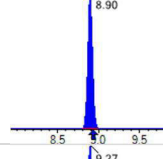
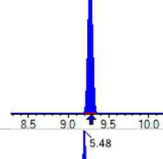
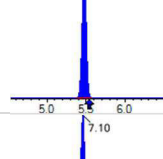
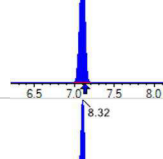
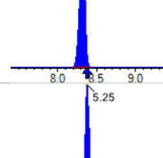
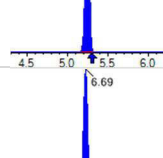
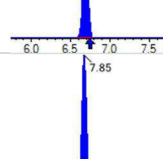
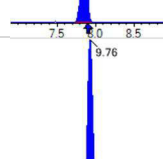
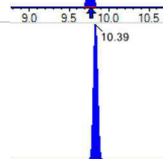
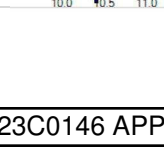
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT-CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) 573 (349.0 / 99.0) 164	(6.55, 0.92) (N/A, 0.13, 5.5)	610.0 59.5	0.2863 83.8 86.3	0.0008	N/A			
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) 26220 (499.0 / 99.0) 3187	(8.32, 1.00) (0.00, N/A, 0.2)	48.6 17.6	0.1215 56.2 55.9	0.0216	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 143257	(3.59, N/A) (N/A, -0.05, N/A)	2030.6	N/A	0.6688 [ 1.0000 ]	66.9% { 98.1% }			IS1,
13C2_PFHxA_IIS	(315.0 / 270.0) 189092	(5.50, N/A) (N/A, -0.06, N/A)	27589.6	N/A	0.6021 [ 1.0000 ]	60.2% { 92.9% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 368960	(6.95, N/A) (N/A, -0.06, N/A)	2093.2	N/A	0.7989 [ 1.0000 ]	79.9% { 95.6% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 378401	(7.56, N/A) (N/A, -0.05, N/A)	3575.8	N/A	0.9067 [ 1.0000 ]	90.7% { 95.3% }			
13C2_PFDA_IIS	(515.0 / 470.1) 374912	(8.11, N/A) (N/A, -0.05, N/A)	22910.9	N/A	0.9335 [ 1.0000 ]	93.4% { 102.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 457351	(7.10, N/A) (N/A, -0.06, N/A)	4618.2	N/A	0.6736 [ 1.0000 ]	67.4% { 100.2% }			IS1,
13C4_PFOS_IIS	(503.0 / 79.9) 866329	(8.32, N/A) (N/A, -0.05, N/A)	1345.2	N/A	1.0096 [ 1.0000 ]	101.0% { 98.7% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1270066	(3.59, N/A) (N/A, -0.05, N/A)	7064.1	N/A	7.4497 [ 8.0000 ]	93.1% { 85.5% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1021457	(4.53, N/A) (N/A, -0.06, N/A)	3759.9	N/A	4.6762 [ 4.0000 ]	116.9% { 87.2% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 598225	(5.50, N/A) (N/A, -0.06, N/A)	2581.7	N/A	2.2698 [ 2.0000 ]	113.5% { 78.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 688567	(6.28, N/A) (N/A, -0.06, N/A)	2806.2	N/A	2.7426 [ 2.0000 ]	137.1% { 91.4% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 713346	(6.95, N/A) (N/A, -0.06, N/A)	1832.7	N/A	1.7796 [ 2.0000 ]	89.0% { 75.4% }			
13C9_PFNA_EIS	(472.0 / 427.0) 372078	(7.56, N/A) (N/A, -0.06, N/A)	3897.2	N/A	0.9254 [ 1.0000 ]	92.5% { 81.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 411616	(8.12, N/A) (N/A, -0.05, N/A)	1903.3	N/A	0.9122 [ 1.0000 ]	91.2% { 82.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 436035	(8.60, N/A) (N/A, -0.04, N/A)	2105.4	N/A	0.8667 [ 1.0000 ]	86.7% { 82.1% }			
13C2_PFDa_EIS	(615.0 / 570.0) 393809	(8.90, N/A) (N/A, -0.03, N/A)	2980.6	N/A	0.8955 [ 1.0000 ]	89.5% { 85.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 359399	(9.27, N/A) (N/A, -0.02, N/A)	1782.1	N/A	0.7749 [ 1.0000 ]	77.5% { 93.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1426196	(5.48, N/A) (N/A, -0.06, N/A)	3436.0	N/A	1.9684 [ 2.0000 ]	98.4% { 85.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 879704	(7.10, N/A) (N/A, -0.04, N/A)	2310.2	N/A	1.8695 [ 2.0000 ]	93.5% { 67.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2154774	(8.32, N/A) (N/A, -0.05, N/A)	1827.0	N/A	1.8551 [ 2.0000 ]	92.8% { 80.7% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 238746	(5.25, N/A) (N/A, -0.06, N/A)	1373.4	N/A	5.1947 [ 4.0000 ]	129.9% { 81.9% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 300503	(6.69, N/A) (N/A, -0.06, N/A)	5636.4	N/A	4.9800 [ 4.0000 ]	124.5% { 78.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 378451	(7.85, N/A) (N/A, -0.05, N/A)	1802.5	N/A	5.7893 [ 4.0000 ]	144.7% { 80.1% }			S2,
13C8_PFOsa_EIS	(506.0 / 78.0) 3545133	(9.76, N/A) (N/A, -0.02, N/A)	3698.3	N/A	1.7844 [ 2.0000 ]	89.2% { 91.0% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 628769	(10.39, N/A) (N/A, -0.01, N/A)	1947.4	N/A	1.2370 [ 2.0000 ]	61.8% { 100.3% }			S1,



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCB4  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (37)  
 Acquired: 2023/03/21 - 21:41

Analyte	( Q1 / Q3 ) Area Counts*min	R.T. ( R.T [min], R.R.T. ) ( ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	( 531.0 / 169.0 ) 586355	( 10.57 , N/A ) ( N/A , -0.01 , N/A )	3082.9	N/A	1.2673 [ 2.0000 ]	63.4% { 105.3% }			S1,
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 907797	( 8.22 , N/A ) ( N/A , -0.05 , N/A )	1846.8	N/A	4.5704 [ 4.0000 ]	114.3% { 93.5% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 730797	( 8.46 , N/A ) ( N/A , -0.04 , N/A )	12052.9	N/A	3.2830 [ 4.0000 ]	82.1% { 87.9% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 2504355	( 10.32 , N/A ) ( N/A , -0.01 , N/A )	1595.2	N/A	15.8323 [ 20.0000 ]	79.2% { 98.7% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 3135309	( 10.50 , N/A ) ( N/A , -0.01 , N/A )	1394.5	N/A	16.7936 [ 20.0000 ]	84.0% { 100.2% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1320041	( 5.80 , N/A ) ( N/A , -0.06 , N/A )	3403.0	N/A	9.0694 [ 8.0000 ]	113.4% { 84.2% }			

## ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC01124  
 Calibration: 2310010

SDG:  
 Project: Red Hill AFFF Assessment Sam  
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC01124-CCB5	PFBA	0.00	ng/mL	0.40	U
	PFPEA	0.00	ng/mL	0.20	U
	PFHXA	0.00	ng/mL	0.10	U
	PFHPA	0.00435	ng/mL	0.10	U
	PFOA	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.00	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.00	ng/mL	0.10	U
	PFBS	0.00	ng/mL	0.10	U
	PFPEs	0.00148	ng/mL	0.10	U
	PFHXS	0.0300	ng/mL	0.10	U
	PFHPS	0.00	ng/mL	0.10	U
	PFOS	0.131	ng/mL	0.10	
	PFNS	0.00	ng/mL	0.10	U
	PFDS	0.00	ng/mL	0.10	U
	PFDOS	0.00	ng/mL	0.10	U
	4:2FTS	0.00	ng/mL	0.40	U
	6:2FTS	0.00	ng/mL	0.40	U
	8:2FTS	0.00	ng/mL	0.40	U
	PFOSA	0.00	ng/mL	0.10	U
	NMeFOSA	0.00	ng/mL	0.40	U
	NEtFOSA	0.00	ng/mL	0.40	U
	NMeFOSAA	0.00	ng/mL	0.10	U
	NEtFOSAA	0.00	ng/mL	0.10	U
	NMeFOSE	0.00	ng/mL	0.40	U
	NEtFOSE	0.00	ng/mL	0.40	U
	HFPO-DA	0.00	ng/mL	0.20	U
	ADONA	0.00	ng/mL	0.20	U
	PFEESA	0.00	ng/mL	0.20	U
	PFMPA	0.00	ng/mL	0.20	U

## ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC01124  
 Calibration: 2310010

SDG:  
 Project: Red Hill AFFF Assessment Sam  
 Instrument: Saphira

Lab Sample ID	Analyte	Found	Units	RL	C
SC01124-CCB5	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	7.21	ng/mL		
	13C5-PFPEA	5.70	ng/mL		
	13C5-PFHXA	2.83	ng/mL		
	13C4-PFHPA	3.07	ng/mL		
	13C8-PFOA	1.79	ng/mL		
	13C9-PFNA	0.928	ng/mL		
	13C6-PFDA	0.984	ng/mL		
	13C7-PFUnA	0.895	ng/mL		
	13C2-PFDOA	0.950	ng/mL		
	13C2-PFTEDA	0.947	ng/mL		
	13C3-PFBS	1.90	ng/mL		
	13C3-PFHXS	1.87	ng/mL		
	13C8-PFOS	1.85	ng/mL		
	13C2-4:2FTS	5.55	ng/mL		
	13C2-6:2FTS	5.36	ng/mL		
	13C2-8:2FTS	6.27	ng/mL		
	13C8-PFOSA	1.61	ng/mL		
	D3-NMEFOSA	1.21	ng/mL		
	D5-NETFOSA	1.25	ng/mL		
	D3-NMEFOSAA	4.68	ng/mL		
	D5-NETFOSAA	3.33	ng/mL		
	D7-NMEFOSE	14.9	ng/mL		
	D9-NETFOSSE	15.6	ng/mL		
	13C3-HFPO-DA	10.8	ng/mL		



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCB5  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (59)  
 Acquired: 2023/03/22 - 02:25

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) 1111 (363.0 / 169.0) 637	(5.90, 0.94) (-0.37, N/A, -34.0)	7.8 4393.6	0.5736 176.0 225.8	0.0044	N/A			IR2.
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

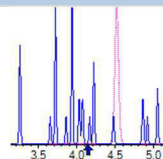
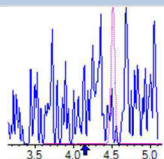
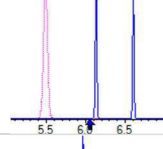
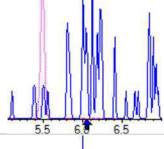
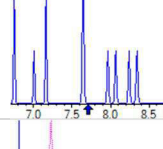
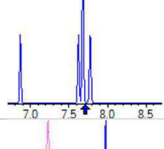
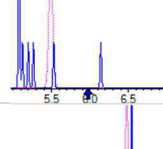
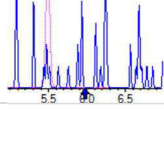
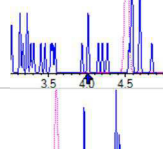
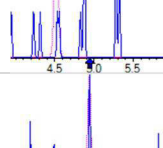
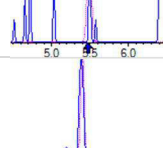
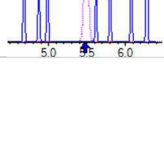
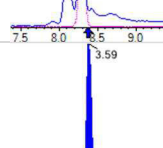
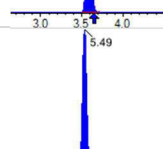
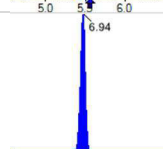
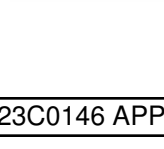
Sample I.D.: SC01124-CCB5  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

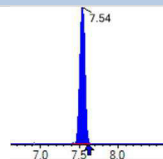
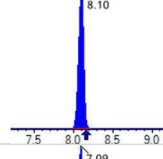
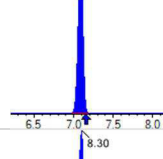
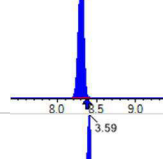
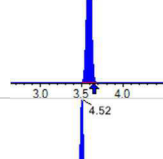
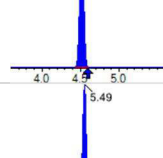
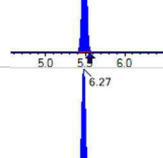
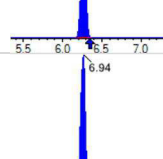
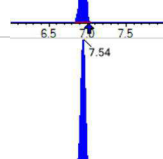
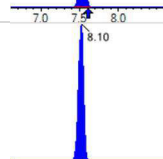
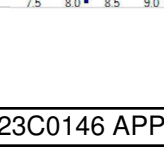
Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (59)  
 Acquired: 2023/03/22 - 02:25

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) 972 (349.0 / 99.0) 682	(6.47, 0.91) (N/A, 0.04, 6.5)	158.7 153.0	0.7015 205.3 211.5	0.0015	N/A			IR2,
PFHxS	(399.0 / 80.0) 17893 (399.0 / 99.0) 3025	(7.09, 1.00) (0.00, N/A, 1.2)	79.6 48.9	0.1691 49.3 48.5	0.0300	N/A			IR1,
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) 157410 (499.0 / 99.0) 27942	(8.29, 1.00) (-0.01, N/A, -0.6)	74.0 76.2	0.1775 82.0 81.6	0.1313	N/A			
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) N/A (498.0 / 478.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSA	(512.0 / 219.0) N/A (512.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	(526.0 / 219.0) N/A (526.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	(630.0 / 59.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBa_IIS	(216.0 / 172.0) 132006	(3.59, N/A) (N/A, -0.06, N/A)	2290.0	N/A	0.6163 [ 1.0000 ]	61.6% { 90.4% }			IS1,
13C2_PFHxA_IIS	(315.0 / 270.0) 148613	(5.49, N/A) (N/A, -0.07, N/A)	2767.2	N/A	0.4732 [ 1.0000 ]	47.3% { 73.0% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 355202	(6.94, N/A) (N/A, -0.07, N/A)	372.6	N/A	0.7691 [ 1.0000 ]	76.9% { 92.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 343692	(7.54, N/A) (N/A, -0.07, N/A)	1400.2	N/A	0.8236 [ 1.0000 ]	82.4% { 86.6% }			
13C2_PFDA_IIS	(515.0 / 470.1) 336671	(8.10, N/A) (N/A, -0.06, N/A)	7990.7	N/A	0.8383 [ 1.0000 ]	83.8% { 91.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 411674	(7.09, N/A) (N/A, -0.07, N/A)	12053.1	N/A	0.6064 [ 1.0000 ]	60.6% { 90.2% }			IS1,
13C4_PFOS_IIS	(503.0 / 79.9) 858259	(8.30, N/A) (N/A, -0.06, N/A)	1594.2	N/A	1.0002 [ 1.0000 ]	100.0% { 97.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1132322	(3.59, N/A) (N/A, -0.06, N/A)	7955.5	N/A	7.2078 [ 8.0000 ]	90.1% { 76.2% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 978600	(4.52, N/A) (N/A, -0.07, N/A)	4346.9	N/A	5.7002 [ 4.0000 ]	142.5% { 83.6% }			S2,
13C5_PFHxA_EIS	(318.0 / 273.0) 586259	(5.49, N/A) (N/A, -0.07, N/A)	1979.2	N/A	2.8302 [ 2.0000 ]	141.5% { 77.0% }			S2,
13C4_PFHpA_EIS	(367.0 / 322.0) 604855	(6.27, N/A) (N/A, -0.07, N/A)	2962.6	N/A	3.0653 [ 2.0000 ]	153.3% { 80.3% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 689569	(6.94, N/A) (N/A, -0.07, N/A)	2575.2	N/A	1.7869 [ 2.0000 ]	89.3% { 72.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 338734	(7.54, N/A) (N/A, -0.07, N/A)	4161541.3	N/A	0.9276 [ 1.0000 ]	92.8% { 74.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 398867	(8.10, N/A) (N/A, -0.07, N/A)	1852.3	N/A	0.9844 [ 1.0000 ]	98.4% { 79.5% }			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCB5  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (59)  
 Acquired: 2023/03/22 - 02:25

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 404294	(8.59, N/A) (N/A, -0.05, N/A)	6834.3	N/A	0.8949 [ 1.0000 ]	89.5% { 76.2% }			
13C2_PFDa_EIS	(615.0 / 570.0) 375057	(8.88, N/A) (N/A, -0.04, N/A)	1559.7	N/A	0.9497 [ 1.0000 ]	95.0% { 80.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 394447	(9.26, N/A) (N/A, -0.02, N/A)	1250.3	N/A	0.9470 [ 1.0000 ]	94.7% { 102.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1241179	(5.47, N/A) (N/A, -0.08, N/A)	3407.9	N/A	1.9031 [ 2.0000 ]	95.2% { 74.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 794027	(7.09, N/A) (N/A, -0.06, N/A)	1607.9	N/A	1.8747 [ 2.0000 ]	93.7% { 60.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2124807	(8.30, N/A) (N/A, -0.07, N/A)	1908.7	N/A	1.8465 [ 2.0000 ]	92.3% { 79.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 229761	(5.23, N/A) (N/A, -0.07, N/A)	1976.0	N/A	5.5539 [ 4.0000 ]	138.8% { 78.8% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 291356	(6.68, N/A) (N/A, -0.07, N/A)	1440.9	N/A	5.3642 [ 4.0000 ]	134.1% { 76.0% }			S2,
13C2_8:2FTS_EIS	(529.0 / 81.0) 368665	(7.84, N/A) (N/A, -0.06, N/A)	1631.6	N/A	6.2653 [ 4.0000 ]	156.6% { 78.0% }			S2,
13C8_PFOsa_EIS	(506.0 / 78.0) 3165060	(9.76, N/A) (N/A, -0.02, N/A)	4274.3	N/A	1.6081 [ 2.0000 ]	80.4% { 81.2% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 611234	(10.39, N/A) (N/A, -0.01, N/A)	2465.7	N/A	1.2138 [ 2.0000 ]	60.7% { 97.5% }			S1,



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-CCB5  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (59)  
 Acquired: 2023/03/22 - 02:25

Analyte	( Q1 / Q3 ) Area Counts*min	R.T. ( R.T [min], R.R.T. ) ( ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	( 531.0 / 169.0 ) 573288	( 10.56 , N/A ) ( N/A , -0.02 , N/A )	3243.7	N/A	1.2507 [ 2.0000 ]	62.5% { 103.0% }			S1,
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 921694	( 8.21 , N/A ) ( N/A , -0.06 , N/A )	2213.4	N/A	4.6840 [ 4.0000 ]	117.1% { 95.0% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 735209	( 8.45 , N/A ) ( N/A , -0.06 , N/A )	4873.0	N/A	3.3339 [ 4.0000 ]	83.3% { 88.4% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 2341180	( 10.32 , N/A ) ( N/A , -0.01 , N/A )	1831.7	N/A	14.9399 [ 20.0000 ]	74.7% { 92.3% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 2893959	( 10.50 , N/A ) ( N/A , -0.02 , N/A )	1351.9	N/A	15.6466 [ 20.0000 ]	78.2% { 92.4% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1234325	( 5.79 , N/A ) ( N/A , -0.07 , N/A )	2749.6	N/A	10.7904 [ 8.0000 ]	134.9% { 78.7% }			S2,



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-PEM1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (4)  
 Acquired: 2023/03/21 - 14:36

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) 13235 (313.0 / 119.0) 1045	(5.52, 1.00) (0.00, N/A, 1.7)	28.1 139.5	0.0790 75.0 92.0	0.0401	N/A			
PFHpA	(363.0 / 319.0) 28870 (363.0 / 169.0) 10404	(6.30, 1.00) (0.00, N/A, -0.2)	268.5 359907.5	0.3604 110.6 141.9	0.0885	N/A			
PFOA	(413.0 / 369.0) 3731566 (413.0 / 169.0) 1246637	(6.98, 1.00) (0.00, N/A, 0.0)	2803.1 3121.9	0.3341 95.9 109.5	9.9351	N/A			
PFNA	(463.0 / 419.0) 2787 (463.0 / 169.0) 931	(7.40, 0.98) (-0.18, N/A, -10.4)	28.6 147.5	0.3340 142.7 151.5	0.0081	N/A			IR2,
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: HGH  
Instrument: Saphira  
Type: Sciex Q3 5500

Sample I.D.: SC01124-PEM1  
DF, IV: 1, 10.0µL  
Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
Path: S2023-03-21A (4)  
Acquired: 2023/03/21 - 14:36

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 342 (299.0 / 99.0) 565	(5.83, 1.06) (0.34, N/A, -5.0)	57200.1 69.4	1.6505 281.3 252.5	0.0007	N/A			IR2,
PFPeS	(349.0 / 80.0) 317 (349.0 / 99.0) 492	(6.90, 0.97) (N/A, 0.48, 26.1)	2895.7 96536.5	1.5515 454.1 467.8	0.0004	N/A			IR2,
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) 185 (449.0 / 99.0) 388	(7.78, 0.93) (N/A, -0.02, 2.0)	34315.0 217.8	2.0917 736.1 752.6	0.0002	N/A			IR2,
PFOS	(499.0 / 80.0) N/A (499.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNS	(549.0 / 80.0) 431 (549.0 / 99.0) 415	(8.78, 1.05) (N/A, 0.00, 12.8)	159.2 2363.2	0.9637 420.3 423.2	0.0003	N/A			IR2,
PFDS	(599.0 / 80.0) 821 (599.0 / 99.0) 1264	(9.22, 1.10) (N/A, 0.19, -18.3)	8.7 10.6	1.5388 679.8 691.2	0.0005	N/A			IR2,
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



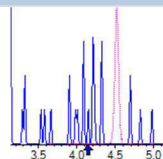
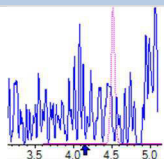
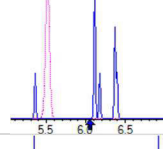
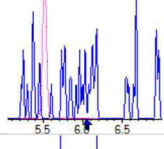
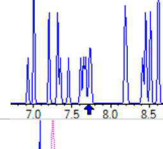
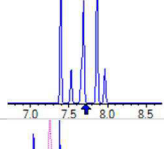
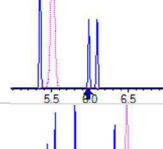
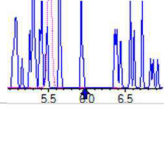
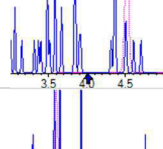
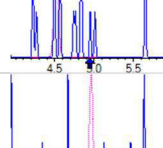
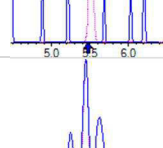
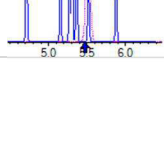
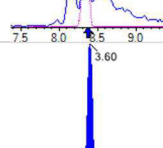
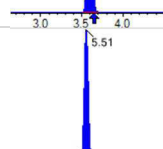
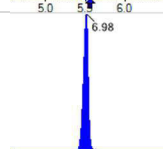
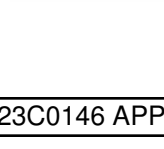
Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-PEM1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (4)  
 Acquired: 2023/03/21 - 14:36

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 17472760 (498.0 / 478.0) 431606	(9.77, 1.00) (0.00, N/A, 0.2)	3905.8 1129.2	0.0247 111.2 104.4	11.7759	N/A			
NMeFOSA	(512.0 / 219.0) 2387245 (512.0 / 169.0) 2146463	(10.39, 1.00) (-0.01, N/A, 0.9)	4097.8 4517.3	0.8991 107.5 103.4	10.3823	N/A			
NEtFOSA	(526.0 / 219.0) 2527850 (526.0 / 169.0) 3156944	(10.57, 1.00) (0.00, N/A, 0.8)	4928.3 5084.4	1.2489 97.8 98.7	10.5559	N/A			
NMeFOSAA	(570.0 / 419.0) N/A (570.0 / 483.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	(584.0 / 419.0) N/A (584.0 / 526.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	(616.0 / 59.0) 1271525	(10.34, 1.00) (0.01, N/A, 0.0)	1028.0	N/A 0.0 0.0	11.5888	N/A			
NEtFOSE	(630.0 / 59.0) 1415851	(10.52, 1.00) (0.01, N/A, 0.0)	1064.7	N/A 0.0 0.0	11.1529	N/A			
HFPO-DA	(285.0 / 169.0) N/A (285.0 / 185.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	(377.0 / 85.0) N/A (377.0 / 251.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9Cl-Pf3ONS	(531.0 / 351.0) N/A (533.0 / 353.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11Cl-Pf3OUDS	(631.0 / 451.0) N/A (633.0 / 453.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 180643	(3.60, N/A) (N/A, -0.05, N/A)	2142.0	N/A	0.8433 [ 1.0000 ]	84.3% { 123.7% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 205981	(5.51, N/A) (N/A, -0.05, N/A)	776.4	N/A	0.6558 [ 1.0000 ]	65.6% { 101.2% }			IS1,
13C4_PFOA_IIS	(417.0 / 372.0) 449512	(6.98, N/A) (N/A, -0.03, N/A)	1295.2	N/A	0.9734 [ 1.0000 ]	97.3% { 116.4% }			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-PEM1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (4)  
 Acquired: 2023/03/21 - 14:36

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 427625	(7.59, N/A) (N/A, -0.03, N/A)	1910.4	N/A	1.0247 [ 1.0000 ]	102.5% { 107.7% }			
13C2_PFDA_IIS	(515.0 / 470.1) 468969	(8.14, N/A) (N/A, -0.02, N/A)	1375.8	N/A	1.1677 [ 1.0000 ]	116.8% { 127.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 538996	(7.13, N/A) (N/A, -0.03, N/A)	17247.8	N/A	0.7939 [ 1.0000 ]	79.4% { 118.1% }			
13C4_PFOS_IIS	(503.0 / 79.9) 1123665	(8.35, N/A) (N/A, -0.02, N/A)	1801.9	N/A	1.3095 [ 1.0000 ]	131.0% { 128.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1514403	(3.60, N/A) (N/A, -0.05, N/A)	6794.8	N/A	7.0445 [ 8.0000 ]	88.1% { 102.0% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1169205	(4.52, N/A) (N/A, -0.07, N/A)	4545.8	N/A	4.9137 [ 4.0000 ]	122.8% { 99.9% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 743447	(5.51, N/A) (N/A, -0.05, N/A)	3020.0	N/A	2.5895 [ 2.0000 ]	129.5% { 97.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 773489	(6.30, N/A) (N/A, -0.04, N/A)	4313.0	N/A	2.8282 [ 2.0000 ]	141.4% { 102.6% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 827600	(6.98, N/A) (N/A, -0.03, N/A)	3622.1	N/A	1.6947 [ 2.0000 ]	84.7% { 87.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 397663	(7.59, N/A) (N/A, -0.03, N/A)	8586.5	N/A	0.8752 [ 1.0000 ]	87.5% { 87.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 495943	(8.14, N/A) (N/A, -0.02, N/A)	2143.6	N/A	0.8787 [ 1.0000 ]	87.9% { 98.8% }			

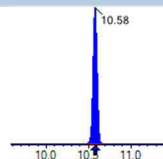
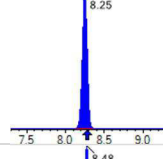
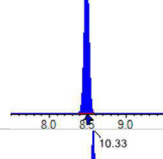
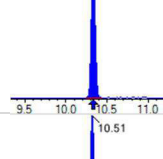
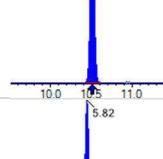
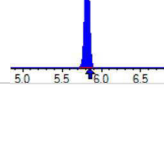


Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: SC01124-PEM1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (4)  
 Acquired: 2023/03/21 - 14:36

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 511114	(8.62, N/A) (N/A, -0.02, N/A)	2067.9	N/A	0.8122 [ 1.0000 ]	81.2% { 96.3% }			
13C2_PFDa_EIS	(615.0 / 570.0) 435638	(8.91, N/A) (N/A, -0.01, N/A)	1952.0	N/A	0.7919 [ 1.0000 ]	79.2% { 94.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 342460	(9.28, N/A) (N/A, -0.01, N/A)	1267.4	N/A	0.5903 [ 1.0000 ]	59.0% { 89.0% }			S1,
13C3_PFBs_EIS	(302.0 / 80.0) 1608693	(5.49, N/A) (N/A, -0.05, N/A)	5112.2	N/A	1.8839 [ 2.0000 ]	94.2% { 95.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 1009623	(7.13, N/A) (N/A, -0.01, N/A)	2436.0	N/A	1.8206 [ 2.0000 ]	91.0% { 77.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2563475	(8.35, N/A) (N/A, -0.02, N/A)	2455.5	N/A	1.7016 [ 2.0000 ]	85.1% { 96.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 293346	(5.25, N/A) (N/A, -0.05, N/A)	1943.6	N/A	5.4159 [ 4.0000 ]	135.4% { 100.7% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 358328	(6.72, N/A) (N/A, -0.03, N/A)	1459.7	N/A	5.0388 [ 4.0000 ]	126.0% { 93.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 450272	(7.88, N/A) (N/A, -0.02, N/A)	6818.6	N/A	5.8446 [ 4.0000 ]	146.1% { 95.3% }			S2,
13C8_PFOsa_EIS	(506.0 / 78.0) 3575611	(9.77, N/A) (N/A, 0.00, N/A)	4414.0	N/A	1.3876 [ 2.0000 ]	69.4% { 91.8% }			S1,
D3_NMeFOsa_EIS	(515.0 / 169.0) 559273	(10.40, N/A) (N/A, 0.00, N/A)	2216.4	N/A	0.8483 [ 2.0000 ]	42.4% { 89.2% }			S1,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT- CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	(531.0 / 169.0) 503123	(10.58, N/A) (N/A, 0.00, N/A)	2271.0	N/A	0.8384 [ 2.0000 ]	41.9% { 90.4% }			S1,
D3_MeFOSAA_EIS	(573.0 / 419.0) 975157	(8.25, N/A) (N/A, -0.02, N/A)	2064.2	N/A	3.7852 [ 4.0000 ]	94.6% { 100.5% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 830671	(8.48, N/A) (N/A, -0.02, N/A)	10712.0	N/A	2.8771 [ 4.0000 ]	71.9% { 99.9% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 2215686	(10.33, N/A) (N/A, 0.00, N/A)	1281.9	N/A	10.7995 [ 20.0000 ]	54.0% { 87.4% }			S1,
D9_NEiFOSE_EIS	(639.0 / 58.9) 2626821	(10.51, N/A) (N/A, 0.00, N/A)	1326.2	N/A	10.8477 [ 20.0000 ]	54.2% { 83.9% }			S1,
13C3_HFPODA_EIS	(287.0 / 169.0) 1457457	(5.82, N/A) (N/A, -0.04, N/A)	3416.2	N/A	9.1925 [ 8.0000 ]	114.9% { 92.9% }			

Analyte	( Q1 / Q3 ) Area Counts*min	R.T. ( R.T [min] , R.R.T. ) ( ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOS	( 499.0 / 80.0 ) 31630 ( 499.0 / 99.0 ) 3026178	( 7.98 , 0.96 ) ( -0.36 , N/A , -21.7)	7.6	95.6731 44202.4 44002.5	0.0200	N/A			
TDCA	( 499.0 / 80.0 ) 7814765	( 6.57 , 0.79 ) ( N/A , #Value! , 0.0)	12454.9	N/A 0.0 0.0	5.3293	N/A			

*R.T.PFOS – R.T.TDCA > 1 minute*

7.98 - 6.57 = 1.41 Pass

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# QUALITY CONTROL RAW DATA



# ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	23C0146
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCC0177-BLK1
Sampled:		Prepared:	03/17/23 11:22
Solids:		Preparation:	EPA 1633
Batch:	BCC0177	Sequence:	SC01124
Column:	1	Calibration:	2310010
		Instrument:	Saphira
		File ID:	S2023-03-21A (13)
		Analyzed:	03/21/23 16:32
		Dilution:	1

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	0.80 U	1.6	0.80	0.21	U
PFPEA	0.40 U	0.80	0.40	0.065	U
PFHXA	0.20 U	0.40	0.20	0.055	U
PFHPA	0.20 U	0.40	0.20	0.041	U
PFOA	0.30 U	0.40	0.30	0.15	U
PFNA	0.20 U	0.40	0.20	0.082	U
PFDA	0.20 U	0.40	0.20	0.10	U
PFUnA	0.30 U	0.40	0.30	0.16	U
PFDOA	0.20 U	0.40	0.20	0.11	U
PFTRDA	0.30 U	0.40	0.30	0.20	U
PFTEDA	0.30 U	0.40	0.30	0.20	U
PFBS	0.20 U	0.40	0.20	0.037	U
PFPEs	0.20 U	0.40	0.20	0.063	IR2, U
PFHXS	0.20 U	0.40	0.20	0.032	U
PFHPS	0.20 U	0.40	0.20	0.051	U
PFOS	0.0941 J	0.40	0.20	0.064	MI2, J
PFNS	0.20 U	0.40	0.20	0.12	U
PFDS	0.30 U	0.40	0.30	0.15	U
PFDOS	0.20 U	0.40	0.20	0.12	U
4:2FTS	0.80 U	1.6	0.80	0.29	U
6:2FTS	0.80 U	1.6	0.80	0.31	U
8:2FTS	0.80 U	1.6	0.80	0.082	U
PFOSA	0.295 J	0.40	0.20	0.10	J
NMeFOSA	0.80 U	1.6	0.80	0.47	U
NEtFOSA	0.80 U	1.6	0.80	0.41	U
NMeFOSAA	0.20 U	0.40	0.20	0.11	U
NEtFOSAA	0.20 U	0.40	0.20	0.11	U
NMeFOSE	1.2 U	1.6	1.2	1.0	U
NEtFOSE	1.2 U	1.6	1.2	1.0	U
HFPO-DA	0.40 U	0.80	0.40	0.17	U

**ANALYSIS DATA SHEET**

Blank

Laboratory:	APPL, LLC	Work Order:	23C0146
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCC0177-BLK1
Sampled:		File ID:	S2023-03-21A (13)
Solids:		Prepared:	03/17/23 11:22
Batch:	BCC0177	Analyzed:	03/21/23 16:32
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Sequence:	SC01124
		Calibration:	2310010
		Instrument:	Saphira

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.40 U	0.80	0.40	0.12	U
PFEESA	0.40 U	0.80	0.40	0.11	U
PFMPA	0.40 U	0.80	0.40	0.054	U
PFMBA	0.40 U	0.80	0.40	0.091	U
NFDHA	0.40 U	0.80	0.40	0.30	U
9CL-PF3ONS	0.40 U	0.80	0.40	0.21	U
11CL-PF3OUDS	0.40 U	0.80	0.40	0.21	U
3:3FTCA	0.80 U	1.6	0.80	0.57	U
5:3FTCA	0.80 U	1.6	0.80	0.44	U
7:3FTCA	0.80 U	1.6	0.80	0.55	U



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCC0177-BLK1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (13)  
 Acquired: 2023/03/21 - 16:32

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeA	(263.0 / 219.0) N/A (263.0 / 69.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHxA	(313.0 / 269.0) N/A (313.0 / 119.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpA	(363.0 / 319.0) 1899 (363.0 / 169.0) 496	(6.30, 1.00) (0.01, N/A, 0.2)	33.2 629.4	0.2609 80.0 102.7	0.0064	N/A			
PFOA	(413.0 / 369.0) N/A (413.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFNA	(463.0 / 419.0) N/A (463.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDA	(513.0 / 469.0) N/A (513.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFUnA	(563.0 / 519.0) N/A (563.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoA	(613.0 / 569.0) N/A (613.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTrDA	(663.0 / 619.0) N/A (663.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFTeDA	(713.0 / 669.0) N/A (713.0 / 169.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCC0177-BLK1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (13)  
 Acquired: 2023/03/21 - 16:32

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) N/A (299.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFPeS	(349.0 / 80.0) 429 (349.0 / 99.0) 314	(6.54, 0.92) (N/A, 0.12, -21.0)	391.9 5297.7	0.7323 214.3 220.8	0.0006	N/A			IR2,
PFHxS	(399.0 / 80.0) N/A (399.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFHpS	(449.0 / 80.0) N/A (449.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFOS	(499.0 / 80.0) 30499 (499.0 / 99.0) 5661	(8.32, 1.00) (-0.01, N/A, -0.9)	20.2 18.2	0.1856 85.8 85.4	0.0235	N/A			M12 ABK 3/22/23
PFNS	(549.0 / 80.0) N/A (549.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDS	(599.0 / 80.0) N/A (599.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFDoS	(699.0 / 80.0) N/A (699.0 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
4:2FTS	(327.0 / 307.0) N/A (327.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
6:2FTS	(427.0 / 407.0) N/A (427.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
8:2FTS	(527.0 / 507.0) N/A (527.0 / 81.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCC0177-BLK1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (13)  
 Acquired: 2023/03/21 - 16:32

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	( 498.0 / 78.0 ) 108439 ( 498.0 / 478.0 ) 2827	( 9.77 , 1.00 ) ( 0.00 , N/A , -0.5)	393.6 38.4	0.0261 117.3 110.2	0.0737	N/A			
NMeFOSA	( 512.0 / 219.0 ) N/A ( 512.0 / 169.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSA	( 526.0 / 219.0 ) N/A ( 526.0 / 169.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSAA	( 570.0 / 419.0 ) N/A ( 570.0 / 483.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSAA	( 584.0 / 419.0 ) N/A ( 584.0 / 526.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
NMeFOSE	( 616.0 / 59.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NEtFOSE	( 630.0 / 59.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
HFPO-DA	( 285.0 / 169.0 ) N/A ( 285.0 / 185.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
ADONA	( 377.0 / 85.0 ) N/A ( 377.0 / 251.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
9CI-Pf3ONS	( 531.0 / 351.0 ) N/A ( 533.0 / 353.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
11CI-PF3OUDS	( 631.0 / 451.0 ) N/A ( 633.0 / 453.0 ) N/A	( N/A , N/A ) ( N/A , N/A , N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCC0177-BLK1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (13)  
 Acquired: 2023/03/21 - 16:32

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) N/A (241.0 / 117.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
5:3FTCA	(341.0 / 236.7) N/A (341.0 / 217.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
7:3FTCA	(441.0 / 317.0) N/A (441.0 / 337.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFEESA	(315.0 / 135.0) N/A (315.0 / 83.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
PFMPA	(229.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
PFMBA	(279.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
NFDHA	(295.0 / 201.0) N/A (295.0 / 85.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 0.0 0.0	0.0000	N/A			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000	N/A			
13C3_PFBA_IIS	(216.0 / 172.0) 148325	(3.64, N/A) (N/A, -0.01, N/A)	2028.8	N/A	0.6925 [ 1.0000 ]	69.2% { 101.6% }			
13C2_PFHxA_IIS	(315.0 / 270.0) 156879	(5.50, N/A) (N/A, -0.06, N/A)	299018.8	N/A	0.4995 [ 1.0000 ]	50.0% { 77.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 366121	(6.97, N/A) (N/A, -0.04, N/A)	3913.9	N/A	0.7928 [ 1.0000 ]	79.3% { 94.8% }			

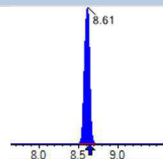
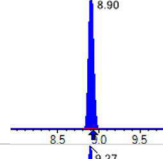
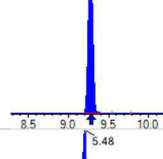
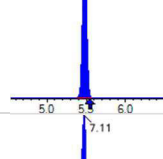
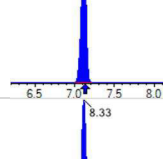
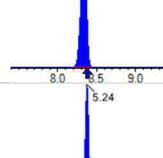
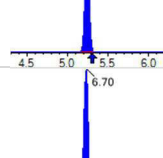
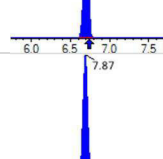
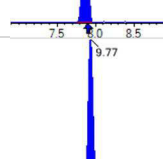
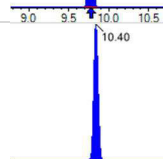
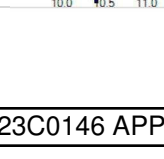


Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

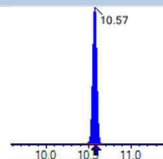
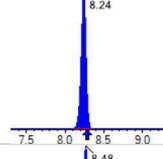
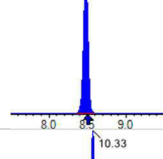
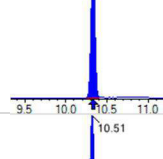
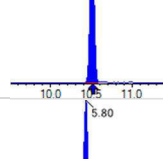
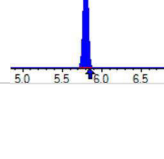
Sample I.D.: BCC0177-BLK1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (13)  
 Acquired: 2023/03/21 - 16:32

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 408841	(7.57, N/A) (N/A, -0.04, N/A)	1716.8	N/A	0.9797 [ 1.0000 ]	98.0% { 103.0% }			
13C2_PFDA_IIS	(515.0 / 470.1) 387649	(8.13, N/A) (N/A, -0.04, N/A)	1363.5	N/A	0.9652 [ 1.0000 ]	96.5% { 105.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 473881	(7.12, N/A) (N/A, -0.04, N/A)	3283.6	N/A	0.6980 [ 1.0000 ]	69.8% { 103.8% }			
13C4_PFOS_IIS	(503.0 / 79.9) 972895	(8.33, N/A) (N/A, -0.04, N/A)	1197.8	N/A	1.1338 [ 1.0000 ]	113.4% { 110.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1325374	(3.63, N/A) (N/A, -0.01, N/A)	8335.2	N/A	7.5085 [ 8.0000 ]	93.9% { 89.2% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1061309	(4.52, N/A) (N/A, -0.07, N/A)	3308.3	N/A	5.8563 [ 4.0000 ]	146.4% { 90.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 641722	(5.50, N/A) (N/A, -0.06, N/A)	4146.9	N/A	2.9347 [ 2.0000 ]	146.7% { 84.3% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 701099	(6.28, N/A) (N/A, -0.06, N/A)	4118.1	N/A	3.3659 [ 2.0000 ]	168.3% { 93.0% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 909744	(6.97, N/A) (N/A, -0.04, N/A)	4339.2	N/A	2.2872 [ 2.0000 ]	114.4% { 96.2% }			
13C9_PFNA_EIS	(472.0 / 427.0) 405034	(7.57, N/A) (N/A, -0.04, N/A)	30741.5	N/A	0.9324 [ 1.0000 ]	93.2% { 89.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 454726	(8.13, N/A) (N/A, -0.03, N/A)	2663.0	N/A	0.9746 [ 1.0000 ]	97.5% { 90.6% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 482360	(8.61, N/A) (N/A, -0.03, N/A)	3109.4	N/A	0.9273 [ 1.0000 ]	92.7% { 90.9% }			
13C2_PFDa_EIS	(615.0 / 570.0) 396648	(8.90, N/A) (N/A, -0.02, N/A)	6304.5	N/A	0.8723 [ 1.0000 ]	87.2% { 85.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 404580	(9.27, N/A) (N/A, -0.01, N/A)	1283.0	N/A	0.8436 [ 1.0000 ]	84.4% { 105.1% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1453580	(5.48, N/A) (N/A, -0.06, N/A)	3081.5	N/A	1.9362 [ 2.0000 ]	96.8% { 86.6% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 915543	(7.11, N/A) (N/A, -0.03, N/A)	1962.3	N/A	1.8778 [ 2.0000 ]	93.9% { 69.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2297874	(8.33, N/A) (N/A, -0.04, N/A)	2163.0	N/A	1.7616 [ 2.0000 ]	88.1% { 86.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 439169	(5.24, N/A) (N/A, -0.07, N/A)	2742.1	N/A	9.2222 [ 4.0000 ]	230.6% { 150.7% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 368226	(6.70, N/A) (N/A, -0.05, N/A)	1552.7	N/A	5.8895 [ 4.0000 ]	147.2% { 96.1% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 402939	(7.87, N/A) (N/A, -0.04, N/A)	2095.6	N/A	5.9489 [ 4.0000 ]	148.7% { 85.2% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3545029	(9.77, N/A) (N/A, -0.01, N/A)	4234.4	N/A	1.5889 [ 2.0000 ]	79.4% { 91.0% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 392221	(10.40, N/A) (N/A, -0.01, N/A)	1954.9	N/A	0.6871 [ 2.0000 ]	34.4% { 62.6% }			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT- CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEIFOSA_EIS	(531.0 / 169.0) 371057	(10.57, N/A) (N/A, -0.01, N/A)	1892.6	N/A	0.7141 [ 2.0000 ]	35.7% { 66.7% }			
D3_MeFOSAA_EIS	(573.0 / 419.0) 930334	(8.24, N/A) (N/A, -0.03, N/A)	1998.4	N/A	4.1708 [ 4.0000 ]	104.3% { 95.9% }			
D5_EiFOSAA_EIS	(589.0 / 419.0) 795870	(8.48, N/A) (N/A, -0.03, N/A)	84715.2	N/A	3.1837 [ 4.0000 ]	79.6% { 95.7% }			
D7_NMeFOSE_EIS	(623.0 / 58.9) 1671909	(10.33, N/A) (N/A, 0.00, N/A)	1003.7	N/A	9.4119 [ 20.0000 ]	47.1% { 65.9% }			
D9_NEiFOSE_EIS	(639.0 / 58.9) 2419685	(10.51, N/A) (N/A, -0.01, N/A)	1410.5	N/A	11.5409 [ 20.0000 ]	57.7% { 77.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 1323846	(5.80, N/A) (N/A, -0.06, N/A)	3836.1	N/A	10.9632 [ 8.0000 ]	137.0% { 84.4% }			

**ANALYSIS DATA SHEET****LCS**

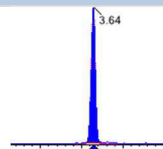
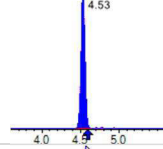
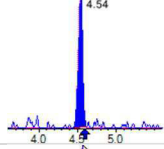
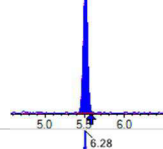
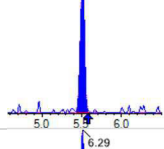
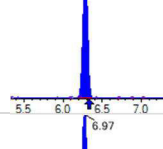
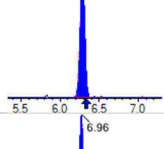
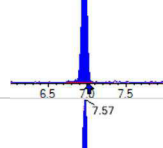
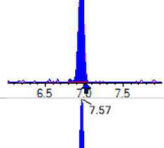
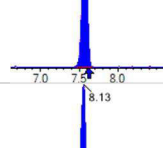
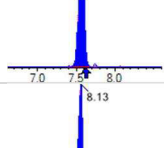
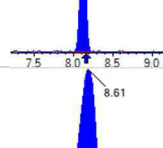
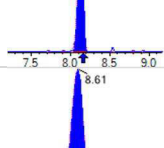
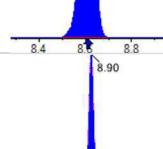
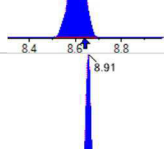
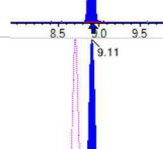
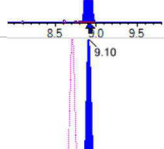
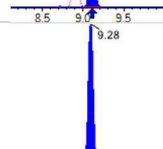
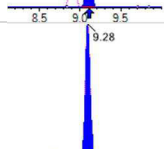
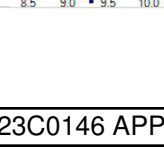
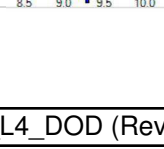
Laboratory:	APPL, LLC	Work Order:	23C0146
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCC0177-BS1
Sampled:		File ID:	S2023-03-21A (14)
Solids:		Prepared:	03/17/23 11:22
Batch:	BCC0177	Analyzed:	03/21/23 16:45
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Calibration:	2310010
		Instrument:	Saphira
		Sequence:	SC01124

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
PFBA	16.0	1.6	0.21	
PFPEA	8.01	0.80	0.065	
PFHXA	4.00	0.40	0.055	
PFHPA	3.60	0.40	0.041	
PFOA	4.10	0.40	0.15	
PFNA	3.67	0.40	0.082	
PFDA	3.72	0.40	0.10	
PFUnA	3.76	0.40	0.16	
PFDOA	3.85	0.40	0.11	
PFTRDA	3.65	0.40	0.20	
PFTEDA	3.91	0.40	0.20	
PFBS	3.49	0.40	0.037	
PFPEs	4.48	0.40	0.063	
PFHXS	3.69	0.40	0.032	
PFHPS	3.02	0.40	0.051	
PFOS	3.16	0.40	0.064	
PFNS	3.31	0.40	0.12	
PFDS	3.16	0.40	0.15	
PFDOS	2.82	0.40	0.12	
4:2FTS	14.5	1.6	0.29	
6:2FTS	16.0	1.6	0.31	
8:2FTS	14.4	1.6	0.082	
PFOSA	3.89	0.40	0.10	
NMeFOSA	16.1	1.6	0.47	
NEtFOSA	15.5	1.6	0.41	
NMeFOSAA	3.01	0.40	0.11	
NEtFOSAA	4.17	0.40	0.11	
NMeFOSE	15.3	1.6	1.0	
NEtFOSE	14.8	1.6	1.0	
HFPO-DA	9.88	0.80	0.17	

**ANALYSIS DATA SHEET****LCS**

Laboratory:	APPL, LLC	Work Order:	23C0146
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCC0177-BS1
Sampled:		File ID:	S2023-03-21A (14)
Solids:		Prepared:	03/17/23 11:22
Batch:	BCC0177	Analyzed:	03/21/23 16:45
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Calibration:	2310010
		Instrument:	Saphira
		Sequence:	SC01124

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
ADONA	7.88	0.80	0.12	
PFEESA	7.91	0.80	0.11	
PFMPA	7.06	0.80	0.054	
PFMBA	8.51	0.80	0.091	
NFDHA	7.58	0.80	0.30	
9CL-PF3ONS	10.1	0.80	0.21	
11CL-PF3OUDS	9.70	0.80	0.21	
3:3FTCA	14.7	1.6	0.57	
5:3FTCA	12.4	1.6	0.44	
7:3FTCA	14.4	1.6	0.55	

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 539105	(3.64, 1.00) (0.00, N/A, 0.0)	330.1	N/A 0.0 0.0	4.0028 [4.0000]	100.1%			
PFPeA	(263.0 / 219.0) 447728 (263.0 / 69.0) 5454	(4.53, 1.00) (0.00, N/A, -0.6)	1262.1 95.7	0.0122 107.6 107.8	2.0037 [2.0000]	100.2%			
PFHxA	(313.0 / 269.0) 272258 (313.0 / 119.0) 24938	(5.51, 1.00) (0.00, N/A, 0.0)	684.4 551.7	0.0916 87.0 106.7	1.0003 [1.0000]	100.0%			
PFHpA	(363.0 / 319.0) 243909 (363.0 / 169.0) 83728	(6.28, 1.00) (0.00, N/A, -0.2)	2137.0 2376165.2	0.3433 105.3 135.1	0.9008 [1.0000]	90.1%			
PFOA	(413.0 / 369.0) 368894 (413.0 / 169.0) 101526	(6.97, 1.00) (0.00, N/A, 0.1)	854.3 3577.8	0.2752 79.0 90.2	1.0256 [1.0000]	102.6%			
PFNA	(463.0 / 419.0) 320683 (463.0 / 169.0) 74075	(7.57, 1.00) (0.00, N/A, 0.1)	35449.0 16124.9	0.2310 98.7 104.8	0.9181 [1.0000]	91.8%			
PFDA	(513.0 / 469.0) 401730 (513.0 / 169.0) 49342	(8.13, 1.00) (0.00, N/A, -0.2)	476.2 790.9	0.1228 115.5 112.7	0.9301 [1.0000]	93.0%			
PFUnA	(563.0 / 519.0) 343153 (563.0 / 169.0) 47201	(8.61, 1.00) (0.00, N/A, 0.1)	856.8 494.1	0.1376 114.7 121.6	0.9398 [1.0000]	94.0%			
PFDoA	(613.0 / 569.0) 331449 (613.0 / 169.0) 58394	(8.90, 1.00) (0.00, N/A, 0.0)	885.3 2076.1	0.1762 108.2 105.3	0.9615 [1.0000]	96.2%			
PFTrDA	(663.0 / 619.0) 301999 (663.0 / 169.0) 82768	(9.11, 1.02) (N/A, -0.01, 0.1)	1440.8 3635.7	0.2741 112.3 125.4	0.9135 [1.0000]	91.4%			
PFTeDA	(713.0 / 669.0) 319379 (713.0 / 169.0) 60206	(9.28, 1.00) (0.00, N/A, 0.0)	1074.3 396.6	0.1885 98.6 99.1	0.9764 [1.0000]	97.6%			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCC0177-BS1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (14)  
 Acquired: 2023/03/21 - 16:45

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 381597 (299.0 / 99.0) 231415	(5.49, 1.00) (0.00, N/A, -0.1)	5289.4 502857.5	0.6064 103.4 92.8	0.8731 [0.8847]	98.7%			
PFPeS	(349.0 / 80.0) 866931 (349.0 / 99.0) 286830	(6.37, 0.90) (N/A, -0.05, 0.0)	19706121.9 8588.3	0.3309 96.8 99.8	1.1199 [0.9384]	119.3%			
PFHxS	(399.0 / 80.0) 649861 (399.0 / 99.0) 220358	(7.11, 1.00) (0.00, N/A, 0.1)	12636.3 1862.9	0.3391 98.9 97.2	0.9228 [0.9110]	101.3%			
PFHpS	(449.0 / 80.0) 806032 (449.0 / 99.0) 201443	(7.76, 0.93) (N/A, -0.04, 0.1)	12367309.0 2184.4	0.2499 88.0 89.9	0.7544 [0.9514]	79.3%			
PFOS	(499.0 / 80.0) 1050491 (499.0 / 99.0) 224632	(8.33, 1.00) (0.00, N/A, -0.2)	464.2 289.3	0.2138 98.8 98.3	0.7910 [0.9275]	85.3%			
PFNS	(549.0 / 80.0) 1043225 (549.0 / 99.0) 265947	(8.76, 1.05) (N/A, -0.02, 0.0)	19956.1 1914.2	0.2549 111.2 112.0	0.8284 [0.9599]	86.3%			
PFDS	(599.0 / 80.0) 1148980 (599.0 / 99.0) 282687	(9.01, 1.08) (N/A, -0.01, 0.0)	1153.0 501.5	0.2460 108.7 110.5	0.7897 [0.9631]	82.0%			
PFDoS	(699.0 / 80.0) 819910 (699.0 / 99.0) 192455	(9.35, 1.12) (N/A, -0.01, -0.1)	1912.1 1012.6	0.2347 107.7 98.6	0.7050 [0.9696]	72.7%			
4:2FTS	(327.0 / 307.0) 1157138 (327.0 / 81.0) 734690	(5.25, 1.00) (0.00, N/A, 0.1)	4558.0 2197.8	0.6349 102.5 102.5	3.6374 [3.7381]	97.3%			
6:2FTS	(427.0 / 407.0) 451905 (427.0 / 81.0) 339040	(6.70, 1.00) (0.00, N/A, -0.1)	1790.8 1241.6	0.7502 108.6 111.8	3.9991 [3.7962]	105.3%			
8:2FTS	(527.0 / 507.0) 514330 (527.0 / 81.0) 420485	(7.87, 1.00) (0.00, N/A, -0.1)	981.2 1197.8	0.8175 121.1 105.2	3.6096 [3.8332]	94.2%			

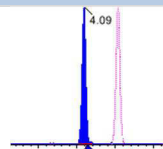
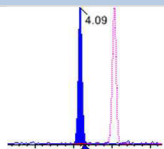
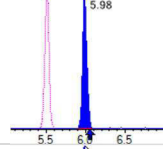
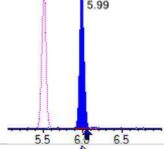
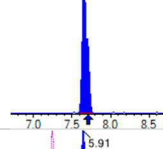
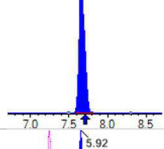
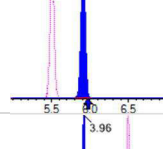
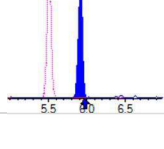
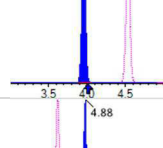
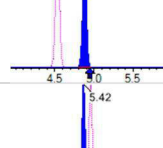
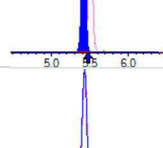
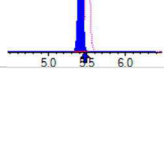
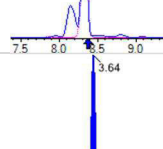
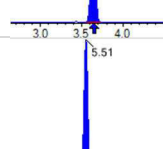
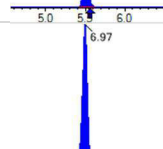
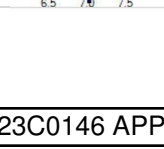


Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCC0177-BS1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (14)  
 Acquired: 2023/03/21 - 16:45

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 1288076 (498.0 / 478.0) 34192	(9.77, 1.00) (0.00, N/A, -0.1)	2251.2 272.3	0.0265 119.5 112.2	0.9722 [ 1.0000 ]	97.2%			
NMeFOSA	(512.0 / 219.0) 473197 (512.0 / 169.0) 406215	(10.39, 1.00) (-0.01, N/A, 0.8)	2180.7 1660.7	0.8584 102.7 98.8	4.0227 [ 4.0000 ]	100.6%			
NEIFOSA	(526.0 / 219.0) 458173 (526.0 / 169.0) 579302	(10.56, 1.00) (-0.01, N/A, 0.5)	2069.3 2045.3	1.2644 99.1 99.9	3.8834 [ 4.0000 ]	97.1%			
NMeFOSAA	(570.0 / 419.0) 170553 (570.0 / 483.0) 70110	(8.24, 1.00) (0.01, N/A, 0.0)	3311049.0 303.2	0.4111 87.5 87.8	0.7524 [ 1.0000 ]	75.2%			
NEIFOSAA	(584.0 / 419.0) 171590 (584.0 / 526.0) 91944	(8.48, 1.00) (0.01, N/A, -0.1)	5131.4 13076.6	0.5358 83.9 91.3	1.0413 [ 1.0000 ]	104.1%			
NMeFOSE	(616.0 / 59.0) 259385	(10.34, 1.00) (0.01, N/A, 0.0)	477.1	N/A 0.0 0.0	3.8227 [ 4.0000 ]	95.6%			
NEtFOSE	(630.0 / 59.0) 347079	(10.52, 1.00) (0.01, N/A, 0.0)	507.0	N/A 0.0 0.0	3.6934 [ 4.0000 ]	92.3%			
HFPO-DA	(285.0 / 169.0) 309357 (285.0 / 185.0) 751103	(5.80, 1.00) (0.00, N/A, 0.0)	1369.5 3296.4	2.4279 90.2 99.3	2.4698 [ 2.0000 ]	123.5%			
ADONA	(377.0 / 85.0) 970344 (377.0 / 251.0) 106926	(6.56, 1.13) (N/A, -0.05, 0.1)	2499.2 1002.5	0.1102 114.1 109.6	1.9705 [ 1.8854 ]	104.5%			
9CI-Pf3ONS	(531.0 / 351.0) 3337907 (533.0 / 353.0) 1016721	(8.68, 1.50) (N/A, -0.02, 0.2)	2894.0 1543.4	0.3046 95.5 98.3	2.5147 [ 1.8665 ]	134.7%			
11CI-PF3OUDS	(631.0 / 451.0) 1955430 (633.0 / 453.0) 711097	(9.16, 1.58) (N/A, -0.01, 0.0)	2982.4 2156.9	0.3637 109.2 100.4	2.4243 [ 1.8864 ]	128.5%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-I[ $\mu$ min], $\Delta$ RT-CV[ $\mu$ min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 24790 (241.0 / 117.0) 34532	(4.09, 0.90) (N/A, -0.05, 0.1)	986.6 350.8	1.3930 68.3 105.5	3.6852 [4.0000]	92.1%			
5:3FTCA	(341.0 / 236.7) 143584 (341.0 / 217.0) 284550	(5.98, 1.09) (N/A, -0.06, -0.1)	1220.6 856.3	1.9818 120.3 123.8	3.0903 [4.0000]	77.3%			
7:3FTCA	(441.0 / 317.0) 279796 (441.0 / 337.0) 252276	(7.66, 1.39) (N/A, -0.05, -0.3)	807.1 1123.8	0.9016 105.2 100.5	3.5880 [4.0000]	89.7%			
PFEESA	(315.0 / 135.0) 671549 (315.0 / 83.0) 142982	(5.91, 1.07) (N/A, -0.06, -0.3)	88189.3 681.8	0.2129 82.2 83.9	1.9782 [1.7849]	110.8%			
PFMPA	(229.0 / 85.0) 101585	(3.96, 0.87) (N/A, -0.04, 0.0)	2411.8	N/A 0.0 0.0	1.7661 [2.0000]	88.3%			
PFMBA	(279.0 / 85.0) 390692	(4.88, 1.08) (N/A, -0.05, 0.0)	2753.8	N/A 0.0 0.0	2.1267 [2.0000]	106.3%			
NFDHA	(295.0 / 201.0) 292323 (295.0 / 85.0) 257394	(5.42, 0.98) (N/A, -0.06, 0.0)	4498.7 2013.1	0.8805 87.7 96.9	1.8943 [2.0000]	94.7%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [1.0000]	N/A%			BS2,
13C3_PFBA_IIS	(216.0 / 172.0) 139334	(3.64, N/A) (N/A, -0.01, N/A)	1474.0	N/A	0.6505 [1.0000]	65.0% {95.4%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 150679	(5.51, N/A) (N/A, -0.06, N/A)	10918.9	N/A	0.4798 [1.0000]	48.0% {74.0%}			
13C4_PFOA_IIS	(417.0 / 372.0) 347329	(6.97, N/A) (N/A, -0.04, N/A)	3226.8	N/A	0.7521 [1.0000]	75.2% {90.0%}			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCC0177-BS1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (14)  
 Acquired: 2023/03/21 - 16:45

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 382267	(7.57, N/A) (N/A, -0.04, N/A)	7791.0	N/A	0.9160 [ 1.0000 ]	91.6% { 96.3% }			
13C2_PFDA_IIS	(515.0 / 470.1) 374753	(8.13, N/A) (N/A, -0.04, N/A)	5702.9	N/A	0.9331 [ 1.0000 ]	93.3% { 102.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 498418	(7.12, N/A) (N/A, -0.04, N/A)	3370.0	N/A	0.7341 [ 1.0000 ]	73.4% { 109.2% }			
13C4_PFOS_IIS	(503.0 / 79.9) 890937	(8.33, N/A) (N/A, -0.04, N/A)	1356.2	N/A	1.0383 [ 1.0000 ]	103.8% { 101.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1304745	(3.64, N/A) (N/A, 0.00, N/A)	6438.6	N/A	7.8686 [ 8.0000 ]	98.4% { 87.9% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1016141	(4.53, N/A) (N/A, -0.06, N/A)	3231.0	N/A	5.8377 [ 4.0000 ]	145.9% { 86.8% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 612331	(5.51, N/A) (N/A, -0.05, N/A)	14143.8	N/A	2.9156 [ 2.0000 ]	145.8% { 80.5% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 641808	(6.28, N/A) (N/A, -0.05, N/A)	4282.9	N/A	3.2080 [ 2.0000 ]	160.4% { 85.2% }			S2,
13C8_PFOA_EIS	(421.0 / 376.0) 792569	(6.97, N/A) (N/A, -0.04, N/A)	1667.7	N/A	2.1004 [ 2.0000 ]	105.0% { 83.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 403629	(7.57, N/A) (N/A, -0.04, N/A)	1435.9	N/A	0.9937 [ 1.0000 ]	99.4% { 88.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 457862	(8.13, N/A) (N/A, -0.04, N/A)	8423.5	N/A	1.0151 [ 1.0000 ]	101.5% { 91.2% }			





Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCC0177-BS1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (14)  
 Acquired: 2023/03/21 - 16:45

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 457159	(8.61, N/A) (N/A, -0.03, N/A)	1796.8	N/A	0.9091 [ 1.0000 ]	90.9% { 86.1% }			
13C2_PFDa_EIS	(615.0 / 570.0) 409768	(8.90, N/A) (N/A, -0.02, N/A)	1275.0	N/A	0.9322 [ 1.0000 ]	93.2% { 88.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 383125	(9.28, N/A) (N/A, -0.01, N/A)	1560.1	N/A	0.8264 [ 1.0000 ]	82.6% { 99.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1354138	(5.49, N/A) (N/A, -0.05, N/A)	2849.8	N/A	1.7149 [ 2.0000 ]	85.7% { 80.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 938798	(7.12, N/A) (N/A, -0.03, N/A)	1617.7	N/A	1.8307 [ 2.0000 ]	91.5% { 71.6% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2354289	(8.33, N/A) (N/A, -0.04, N/A)	1612.7	N/A	1.9709 [ 2.0000 ]	98.5% { 88.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 436276	(5.25, N/A) (N/A, -0.05, N/A)	2401.4	N/A	8.7104 [ 4.0000 ]	217.8% { 149.7% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 314665	(6.70, N/A) (N/A, -0.05, N/A)	1959.9	N/A	4.7851 [ 4.0000 ]	119.6% { 82.1% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 425777	(7.87, N/A) (N/A, -0.04, N/A)	2949.2	N/A	5.9766 [ 4.0000 ]	149.4% { 90.1% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3192644	(9.77, N/A) (N/A, -0.01, N/A)	3731.8	N/A	1.5626 [ 2.0000 ]	78.1% { 81.9% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 286117	(10.40, N/A) (N/A, -0.01, N/A)	1490.5	N/A	0.5473 [ 2.0000 ]	27.4% { 45.7% }			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCC0177-BS1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (14)  
 Acquired: 2023/03/21 - 16:45

Analyte	( Q1 / Q3 ) Area Counts*min	R.T. ( R.T [min], R.R.T. ) ( ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEiFOSA_EIS	( 531.0 / 169.0 ) 247878	( 10.57 , N/A ) ( N/A , -0.01 , N/A )	1780.0	N/A	0.5209 [ 2.0000 ]	26.0% { 44.5% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 880329	( 8.24 , N/A ) ( N/A , -0.04 , N/A )	1585.6	N/A	4.3097 [ 4.0000 ]	107.7% { 90.7% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 786700	( 8.47 , N/A ) ( N/A , -0.03 , N/A )	12962.3	N/A	3.4365 [ 4.0000 ]	85.9% { 94.6% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 1370257	( 10.33 , N/A ) ( N/A , 0.00 , N/A )	1056.7	N/A	8.4234 [ 20.0000 ]	42.1% { 54.0% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 1944485	( 10.51 , N/A ) ( N/A , -0.01 , N/A )	1303.7	N/A	10.1275 [ 20.0000 ]	50.6% { 62.1% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1260486	( 5.80 , N/A ) ( N/A , -0.05 , N/A )	3092.2	N/A	10.8680 [ 8.0000 ]	135.9% { 80.4% }			

**ANALYSIS DATA SHEET****MRL Check**

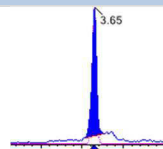
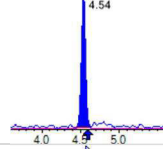
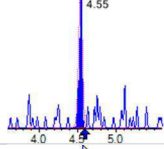
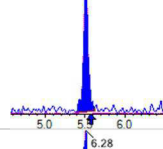
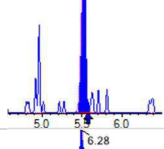
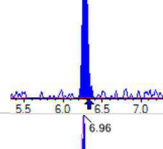
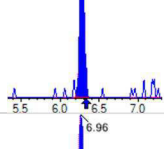
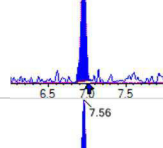
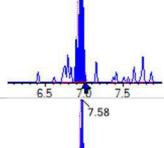
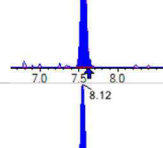
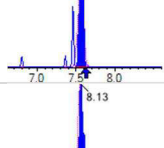
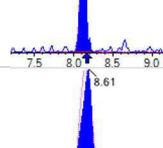
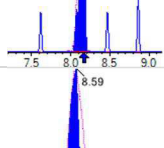
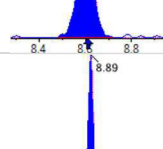
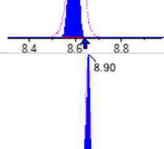
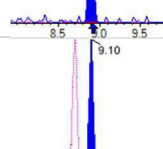
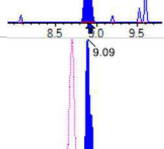
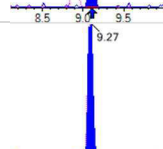
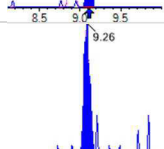
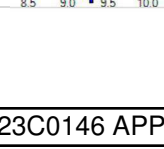
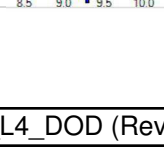
Laboratory:	APPL, LLC	Work Order:	23C0146
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCC0177-MRL1
Sampled:		File ID:	S2023-03-21A (15)
Solids:		Prepared:	03/17/23 11:22
Batch:	BCC0177	Analyzed:	03/21/23 16:58
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Calibration:	2310010
		Instrument:	Saphira
		Sequence:	SC01124

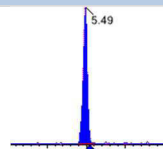
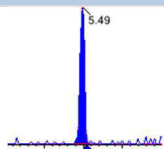
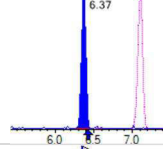
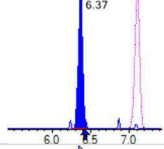
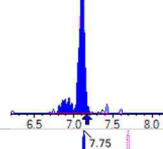
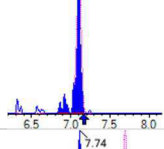
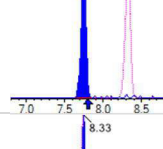
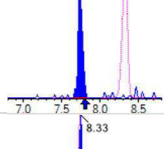
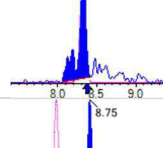
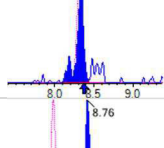
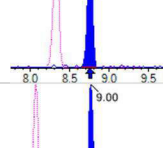
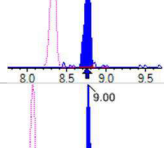
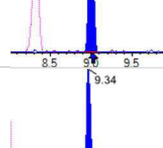
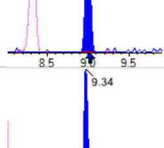
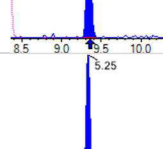
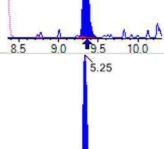
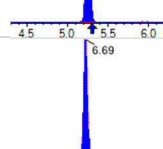
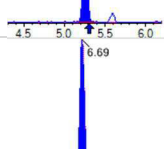
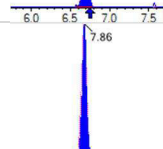
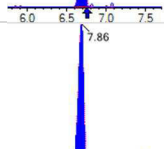
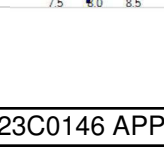
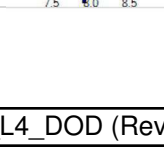
COMPOUND	CONC. (ng/L)	LOQ	DL	Q
PFBA	1.94	1.6	0.21	BS2
PFPEA	0.946	0.80	0.065	
PFHXA	0.607	0.40	0.055	BS2
PFHPA	0.503	0.40	0.041	
PFOA	0.422	0.40	0.15	
PFNA	0.460	0.40	0.082	
PFDA	0.572	0.40	0.10	
PFUnA	0.420	0.40	0.16	IR1
PFDOA	0.419	0.40	0.11	IR2
PFTRDA	0.433	0.40	0.20	
PFTEDA	0.374	0.40	0.20	J
PFBS	0.503	0.40	0.037	
PFPEs	0.499	0.40	0.063	
PFHXS	0.412	0.40	0.032	
PFHPS	0.307	0.40	0.051	J
PFOS	0.384	0.40	0.064	J
PFNS	0.382	0.40	0.12	J
PFDS	0.372	0.40	0.15	J
PFDOS	0.296	0.40	0.12	J
4:2FTS	1.57	1.6	0.29	J
6:2FTS	1.46	1.6	0.31	J
8:2FTS	1.24	1.6	0.082	J
PFOSA	0.428	0.40	0.10	
NMeFOSA	1.74	1.6	0.47	
NEtFOSA	1.71	1.6	0.41	
NMeFOSAA	0.320	0.40	0.11	J
NEtFOSAA	0.317	0.40	0.11	J
NMeFOSE	1.84	1.6	1.0	
NEtFOSE	1.58	1.6	1.0	J
HFPO-DA	1.02	1.6	1.0	

**ANALYSIS DATA SHEET****MRL Check**

Laboratory:	APPL, LLC	Work Order:	23C0146
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BCC0177-MRL1
Sampled:		File ID:	S2023-03-21A (15)
Solids:		Prepared:	03/17/23 11:22
Batch:	BCC0177	Analyzed:	03/21/23 16:58
Column:	1	Preparation:	EPA 1633
		Dilution:	1
		Calibration:	2310010
		Instrument:	Saphira
		Sequence:	SC01124

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
ADONA	0.853	0.80	0.12	
PFEESA	0.800	0.80	0.11	
PFMPA	0.710	0.80	0.054	J
PFMBA	0.887	0.80	0.091	
NFDHA	0.956	0.80	0.30	
9CL-PF3ONS	0.994	0.80	0.21	
11CL-PF3OUDS	1.21	0.80	0.21	BS2
3:3FTCA	1.42	1.6	0.57	J
5:3FTCA	1.47	1.6	0.44	J
7:3FTCA	2.01	1.6	0.55	

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(213.0 / 169.0) 66430	(3.65, 1.00) (0.00, N/A, 0.0)	53.3	N/A 0.0 0.0	0.4848 [0.4000]	121.2%			BS2,
PFPeA	(263.0 / 219.0) 53583 (263.0 / 69.0) 939	(4.54, 1.00) (0.00, N/A, -0.4)	243.9 30.2	0.0175 154.8 155.1	0.2366 [0.2000]	118.3%			
PFHxA	(313.0 / 269.0) 41756 (313.0 / 119.0) 3598	(5.51, 1.00) (0.00, N/A, -0.7)	111.8 2194.1	0.0862 81.8 100.4	0.1516 [0.1000]	151.6%			BS2,
PFHpA	(363.0 / 319.0) 34353 (363.0 / 169.0) 7935	(6.28, 1.00) (0.00, N/A, 0.2)	239.8 164.5	0.2310 70.9 90.9	0.1259 [0.1000]	125.9%			
PFOA	(413.0 / 369.0) 36840 (413.0 / 169.0) 13673	(6.96, 1.00) (0.00, N/A, -0.4)	115.1 37.2	0.3711 106.5 121.6	0.1056 [0.1000]	105.6%			
PFNA	(463.0 / 419.0) 39687 (463.0 / 169.0) 5218	(7.56, 1.00) (0.00, N/A, -1.0)	130185.3 96.4	0.1315 56.2 59.7	0.1149 [0.1000]	114.9%			
PFDA	(513.0 / 469.0) 57471 (513.0 / 169.0) 4280	(8.12, 1.00) (0.00, N/A, -1.1)	101.7 957.1	0.0745 70.0 68.4	0.1429 [0.1000]	142.9%			
PFUnA	(563.0 / 519.0) 39985 (563.0 / 169.0) 1839	(8.61, 1.00) (0.01, N/A, 0.7)	198.2 1617.8	0.0460 38.4 40.7	0.1050 [0.1000]	105.0%			IR1,
PFDoA	(613.0 / 569.0) 34673 (613.0 / 169.0) 8511	(8.89, 1.00) (0.00, N/A, -0.5)	148.9 539.8	0.2455 150.8 146.8	0.1047 [0.1000]	104.7%			IR2,
PFTrDA	(663.0 / 619.0) 34411 (663.0 / 169.0) 10214	(9.10, 1.02) (N/A, -0.02, 0.6)	270.4 5075.8	0.2968 121.6 135.8	0.1083 [0.1000]	108.3%			
PFTeDA	(713.0 / 669.0) 29242 (713.0 / 169.0) 6273	(9.27, 1.00) (0.01, N/A, 0.5)	281.4 49.7	0.2145 112.2 112.8	0.0934 [0.1000]	93.4%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(299.0 / 80.0) 56387 (299.0 / 99.0) 28077	(5.49, 1.00) (0.00, N/A, 0.0)	4411.4 50675.6	0.4979 84.9 76.2	0.1258 [0.0885]	142.2%			
PFPeS	(349.0 / 80.0) 96258 (349.0 / 99.0) 30955	(6.37, 0.90) (N/A, -0.06, 0.1)	2858423.9 344.4	0.3216 94.1 97.0	0.1247 [0.0938]	132.9%			
PFHxS	(399.0 / 80.0) 72401 (399.0 / 99.0) 18327	(7.11, 1.00) (0.00, N/A, 0.3)	202.8 980.6	0.2531 73.8 72.6	0.1031 [0.0911]	113.2%			
PFHpS	(449.0 / 80.0) 77687 (449.0 / 99.0) 22019	(7.75, 0.93) (N/A, -0.05, 0.7)	595.8 64324.2	0.2834 99.8 102.0	0.0767 [0.0951]	80.6%			
PFOS	(499.0 / 80.0) 120863 (499.0 / 99.0) 29580	(8.33, 1.00) (0.00, N/A, -0.3)	77.7 77.2	0.2447 113.1 112.6	0.0960 [0.0927]	103.5%			
PFNS	(549.0 / 80.0) 114069 (549.0 / 99.0) 31581	(8.75, 1.05) (N/A, -0.03, -0.6)	2537.3 424.3	0.2769 120.7 121.6	0.0956 [0.0960]	99.6%			
PFDS	(599.0 / 80.0) 128135 (599.0 / 99.0) 34396	(9.00, 1.08) (N/A, -0.02, -0.3)	301.5 163.2	0.2684 118.6 120.6	0.0929 [0.0963]	96.5%			
PFDoS	(699.0 / 80.0) 81659 (699.0 / 99.0) 23496	(9.34, 1.12) (N/A, -0.02, -0.3)	322.7 133.0	0.2877 132.0 120.9	0.0741 [0.0970]	76.4%			
4:2FTS	(327.0 / 307.0) 127403 (327.0 / 81.0) 77762	(5.25, 1.00) (0.00, N/A, 0.1)	1806.6 461.6	0.6104 98.6 98.5	0.3930 [0.3738]	105.1%			
6:2FTS	(427.0 / 407.0) 48658 (427.0 / 81.0) 40827	(6.69, 1.00) (0.00, N/A, 0.0)	1051876.5 621.1	0.8391 121.4 125.1	0.3653 [0.3796]	96.2%			
8:2FTS	(527.0 / 507.0) 44546 (527.0 / 81.0) 40239	(7.86, 1.00) (0.00, N/A, 0.2)	232.2 525.0	0.9033 133.8 116.2	0.3094 [0.3833]	80.7%			

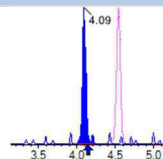
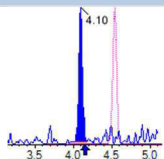
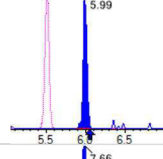
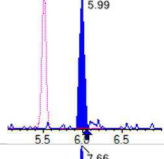
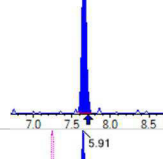
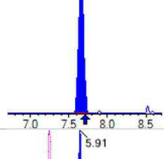
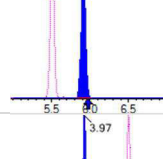
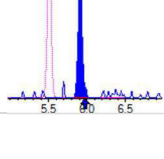
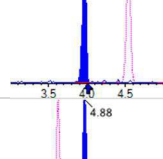
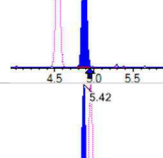
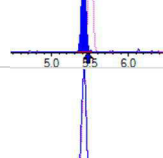
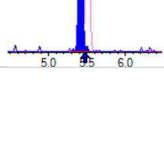
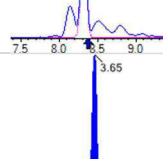
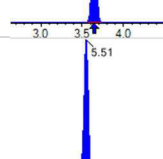
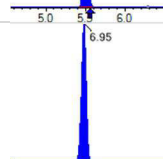
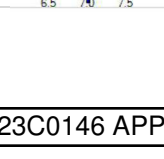


Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

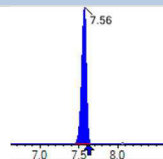
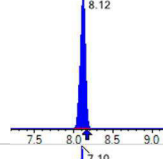
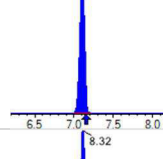
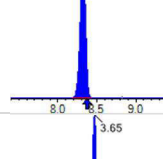
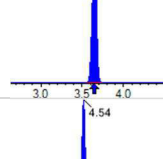
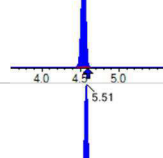
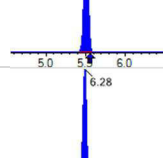
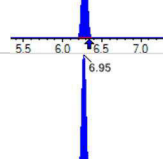
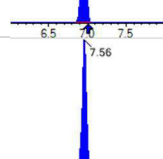
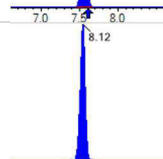
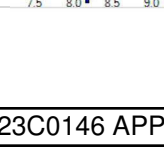
Sample I.D.: BCC0177-MRL1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

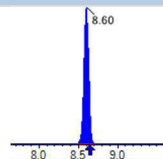
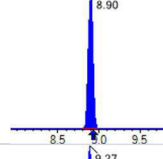
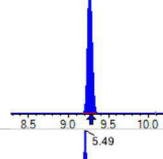
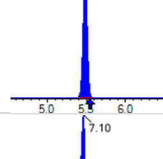
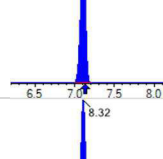
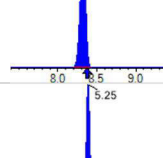
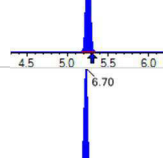
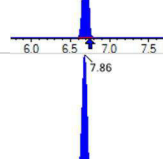
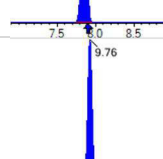
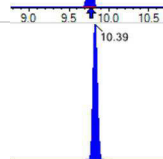
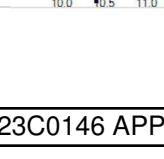
Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (15)  
 Acquired: 2023/03/21 - 16:58

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 151834 (498.0 / 478.0) 4019	(9.76, 1.00) (0.00, N/A, 0.0)	697.1 55.0	0.0265 119.1 111.8	0.1069 [0.1000]	106.9%			
NMeFOSA	(512.0 / 219.0) 61131 (512.0 / 169.0) 57052	(10.38, 1.00) (-0.01, N/A, 0.9)	431.5 503.5	0.9333 111.6 107.4	0.4354 [0.4000]	108.8%			
NEIFOSA	(526.0 / 219.0) 58473 (526.0 / 169.0) 76423	(10.55, 1.00) (-0.01, N/A, 0.6)	413.6 436.1	1.3070 102.4 103.3	0.4275 [0.4000]	106.9%			
NMeFOSAA	(570.0 / 419.0) 18213 (570.0 / 483.0) 11095	(8.25, 1.00) (0.02, N/A, 1.7)	48325.6 27350.9	0.6092 129.7 130.1	0.0800 [0.1000]	80.0%			
NEIFOSAA	(584.0 / 419.0) 12835 (584.0 / 526.0) 10978	(8.48, 1.00) (0.01, N/A, 0.9)	5194.7 20311.9	0.8554 134.0 145.7	0.0793 [0.1000]	79.3%			
NMeFOSE	(616.0 / 59.0) 32354	(10.33, 1.00) (0.01, N/A, 0.0)	77.9	N/A 0.0 0.0	0.4603 [0.4000]	115.1%			
NEtFOSE	(630.0 / 59.0) 37996	(10.51, 1.00) (0.01, N/A, 0.0)	92.5	N/A 0.0 0.0	0.3957 [0.4000]	98.9%			
HFPO-DA	(285.0 / 169.0) 32962 (285.0 / 185.0) 75118	(5.81, 1.00) (0.00, N/A, 0.2)	14018.4 403.9	2.2789 84.7 93.2	0.2561 [0.2000]	128.0%			
ADONA	(377.0 / 85.0) 107933 (377.0 / 251.0) 11032	(6.55, 1.13) (N/A, -0.06, -0.3)	654.4 88.9	0.1022 105.8 101.6	0.2133 [0.1885]	113.1%			
9CI-Pf3ONS	(531.0 / 351.0) 339013 (533.0 / 353.0) 115339	(8.67, 1.49) (N/A, -0.03, 0.0)	553.2 388.7	0.3402 106.6 109.8	0.2485 [0.1867]	133.1%			
11CI-PF3OUDS	(631.0 / 451.0) 221770 (633.0 / 453.0) 81687	(9.15, 1.58) (N/A, -0.02, 0.2)	895.9 545.7	0.3683 110.6 101.7	0.3029 [0.1886]	160.6%			BS2,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 2422 (241.0 / 117.0) 4262	(4.09, 0.90) (N/A, -0.05, -0.2)	136.4 56.9	1.7599 86.3 133.2	0.3552 [0.4000]	88.8%			
5:3FTCA	(341.0 / 236.7) 17251 (341.0 / 217.0) 26638	(5.99, 1.09) (N/A, -0.05, 0.2)	925.2 146.4	1.5442 93.8 96.5	0.3670 [0.4000]	91.7%			
7:3FTCA	(441.0 / 317.0) 39614 (441.0 / 337.0) 32868	(7.66, 1.39) (N/A, -0.05, -0.1)	277.0 8510.5	0.8297 96.8 92.4	0.5021 [0.4000]	125.5%			
PFEESA	(315.0 / 135.0) 68707 (315.0 / 83.0) 15375	(5.91, 1.07) (N/A, -0.06, 0.2)	389.6 108.6	0.2238 86.4 88.2	0.2000 [0.1785]	112.1%			
PFMPA	(229.0 / 85.0) 10355	(3.97, 0.87) (N/A, -0.03, 0.0)	451.5	N/A 0.0 0.0	0.1776 [0.2000]	88.8%			
PFMBA	(279.0 / 85.0) 41305	(4.88, 1.07) (N/A, -0.06, 0.0)	1265.9	N/A 0.0 0.0	0.2218 [0.2000]	110.9%			
NFDHA	(295.0 / 201.0) 37333 (295.0 / 85.0) 30283	(5.42, 0.98) (N/A, -0.05, 0.5)	827.6 271.9	0.8112 80.8 89.3	0.2391 [0.2000]	119.6%			
TDCA	(499.0 / 80.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A	N/A 0.0 0.0	0.0000 [0.1000]	N/A%			BS2,
13C3_PFBA_IIS	(216.0 / 172.0) 153787	(3.65, N/A) (N/A, 0.00, N/A)	1954.8	N/A	0.7180 [1.0000]	71.8% {105.3%}			
13C2_PFHxA_IIS	(315.0 / 270.0) 201553	(5.51, N/A) (N/A, -0.05, N/A)	134905.0	N/A	0.6417 [1.0000]	64.2% {99.0%}			
13C4_PFOA_IIS	(417.0 / 372.0) 376811	(6.95, N/A) (N/A, -0.06, N/A)	3398.5	N/A	0.8159 [1.0000]	81.6% {97.6%}			



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C5_PFNA_IIS	(468.0 / 423.0) 379187	(7.56, N/A) (N/A, -0.05, N/A)	2302.9	N/A	0.9086 [ 1.0000 ]	90.9% { 95.5% }			
13C2_PFDA_IIS	(515.0 / 470.1) 369240	(8.12, N/A) (N/A, -0.04, N/A)	3465.1	N/A	0.9194 [ 1.0000 ]	91.9% { 100.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 463002	(7.10, N/A) (N/A, -0.06, N/A)	18667.1	N/A	0.6820 [ 1.0000 ]	68.2% { 101.5% }			
13C4_PFOS_IIS	(503.0 / 79.9) 950595	(8.32, N/A) (N/A, -0.05, N/A)	1345.2	N/A	1.1078 [ 1.0000 ]	110.8% { 108.3% }			
13C4_PFBA_EIS	(217.0 / 172.0) 1327552	(3.65, N/A) (N/A, 0.00, N/A)	6151.1	N/A	7.2537 [ 8.0000 ]	90.7% { 89.4% }			
13C5_PFPeA_EIS	(268.0 / 223.0) 1029943	(4.54, N/A) (N/A, -0.05, N/A)	3341.5	N/A	4.4235 [ 4.0000 ]	110.6% { 88.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 619517	(5.51, N/A) (N/A, -0.05, N/A)	4627.3	N/A	2.2052 [ 2.0000 ]	110.3% { 81.4% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 646975	(6.28, N/A) (N/A, -0.06, N/A)	5463.0	N/A	2.4176 [ 2.0000 ]	120.9% { 85.8% }			
13C8_PFOA_EIS	(421.0 / 376.0) 768923	(6.95, N/A) (N/A, -0.06, N/A)	2695.2	N/A	1.8783 [ 2.0000 ]	93.9% { 81.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 399004	(7.56, N/A) (N/A, -0.05, N/A)	3161.9	N/A	0.9903 [ 1.0000 ]	99.0% { 87.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 426412	(8.12, N/A) (N/A, -0.05, N/A)	1590.3	N/A	0.9595 [ 1.0000 ]	96.0% { 85.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) ( $\Delta$ RT-[min], $\Delta$ RT- CV[min], $\Delta$ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C7_PFUa_EIS	(570.0 / 525.0) 476763	(8.60, N/A) (N/A, -0.04, N/A)	1999.0	N/A	0.9622 [ 1.0000 ]	96.2% { 89.8% }			
13C2_PFDa_EIS	(615.0 / 570.0) 393782	(8.90, N/A) (N/A, -0.02, N/A)	3626.9	N/A	0.9092 [ 1.0000 ]	90.9% { 85.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 366645	(9.27, N/A) (N/A, -0.02, N/A)	1605.1	N/A	0.8026 [ 1.0000 ]	80.3% { 95.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 1388710	(5.49, N/A) (N/A, -0.05, N/A)	3936.6	N/A	1.8932 [ 2.0000 ]	94.7% { 82.8% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 936348	(7.10, N/A) (N/A, -0.04, N/A)	2351.5	N/A	1.9656 [ 2.0000 ]	98.3% { 71.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 2231088	(8.32, N/A) (N/A, -0.04, N/A)	1836.9	N/A	1.7505 [ 2.0000 ]	87.5% { 83.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 444632	(5.25, N/A) (N/A, -0.05, N/A)	2430.0	N/A	9.5563 [ 4.0000 ]	238.9% { 152.6% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 370890	(6.70, N/A) (N/A, -0.05, N/A)	2280.5	N/A	6.0715 [ 4.0000 ]	151.8% { 96.8% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 430211	(7.86, N/A) (N/A, -0.05, N/A)	1928.1	N/A	6.5008 [ 4.0000 ]	162.5% { 91.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 3421371	(9.76, N/A) (N/A, -0.02, N/A)	4259.1	N/A	1.5694 [ 2.0000 ]	78.5% { 87.8% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 341531	(10.39, N/A) (N/A, -0.01, N/A)	1435.4	N/A	0.6123 [ 2.0000 ]	30.6% { 54.5% }			



Chemist: HGH  
 Instrument: Saphira  
 Type: Sciex Q3 5500

Sample I.D.: BCC0177-MRL1  
 DF, IV: 1, 10.0µL  
 Acquisition Method: 1633 2023-03-07.dam

Quant Method: 1633 - S2023-03-06A  
 Path: S2023-03-21A (15)  
 Acquired: 2023/03/21 - 16:58

Analyte	( Q1 / Q3 ) Area Counts*min	R.T. ( R.T [min], R.R.T. ) ( ΔRT-I[min], ΔRT- CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [ True ] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D5_NEIFOSA_EIS	( 531.0 / 169.0 ) 287342	( 10.56 , N/A ) ( N/A , -0.02 , N/A )	1587.1	N/A	0.5660 [ 2.0000 ]	28.3% { 51.6% }			
D3_MeFOSAA_EIS	( 573.0 / 419.0 ) 883896	( 8.23 , N/A ) ( N/A , -0.05 , N/A )	2156.1	N/A	4.0556 [ 4.0000 ]	101.4% { 91.1% }			
D5_EiFOSAA_EIS	( 589.0 / 419.0 ) 772978	( 8.47 , N/A ) ( N/A , -0.04 , N/A )	3650.7	N/A	3.1647 [ 4.0000 ]	79.1% { 93.0% }			
D7_NMeFOSE_EIS	( 623.0 / 58.9 ) 1419395	( 10.32 , N/A ) ( N/A , -0.01 , N/A )	1148.2	N/A	8.1778 [ 20.0000 ]	40.9% { 56.0% }			
D9_NEiFOSE_EIS	( 639.0 / 58.9 ) 1986996	( 10.50 , N/A ) ( N/A , -0.02 , N/A )	1107.9	N/A	9.6994 [ 20.0000 ]	48.5% { 63.5% }			
13C3_HFPODA_EIS	( 287.0 / 169.0 ) 1295433	( 5.80 , N/A ) ( N/A , -0.05 , N/A )	3119.4	N/A	8.3501 [ 8.0000 ]	104.4% { 82.6% }			

# PREPARATION BATCH SUMMARY

## EPA 1633

Laboratory: APPL, LLC

Work Order: 23C0146

Client: AECOM

Project: Red Hill AFFF Assessment Sampling

Batch: BCC0177

Batch Matrix: Water

Preparation: EPA 1633

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT mL	FINAL VOL. mL
RHSF-PUMP-PR-01-031523-N	23C0146-01	03/17/23 11:22	581.10	2.00
RHSF-PUMP-PR-01-031523-N	23C0146-01RE1	03/17/23 11:22	581.10	2.00
RHS-EF-TRAIN-01-031523-N	23C0146-02	03/17/23 11:22	565.00	2.00
RHS-EF-TRAIN-01-031523-N	23C0146-02RE1	03/17/23 11:22	565.00	2.00
Blank	BCC0177-BLK1	03/17/23 11:22	500.00	2.00
LCS	BCC0177-BS1	03/17/23 11:22	500.00	2.00
MRL Check	BCC0177-MRL1	03/17/23 11:22	500.00	2.00

# PREPARATION BENCH SHEET

## Organics

Print Date/Time: 03/23/2023 11:57 am

BCC0177

**Matrix: Water**

**Prepared using: PFAS - EPA 1633**

<b>Analyses</b> 1633	<b>Spiking Solution(s)</b> PFAS - MIX 1633 10ng/mL	<b>Surrogate Solution(s)</b> MPFAC-HIF-ES 20.0ng/mL	
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Lab Number	Sample and Source ID	Date Due	Extract by	Prepared	Initial (mL)	Final (mL)	ul Spike	ul Surrogate	Extraction Comments
23C0063-01	WP013P-EB-H20-01	03/23/2023	04/05/2023	3/17/2023 11:22:00AM	540.45	2		200	
23C0063-01RE1	WP013P-EB-H20-01	03/23/2023	04/05/2023	3/17/2023 11:22:00AM	540.45	2		200	Added 3/21/2023 by ABK
23C0063-02	WP013P-LF01-MW33S-01	03/23/2023	04/05/2023	3/17/2023 11:22:00AM	511.52	2		200	
23C0063-02RE1	WP013P-LF01-MW33S-01	03/23/2023	04/05/2023	3/17/2023 11:22:00AM	511.52	2		200	Added 3/21/2023 by ABK
23C0063-03	WP013P-EB-H20-02	03/23/2023	04/05/2023	3/17/2023 11:22:00AM	543.65	2		200	
23C0063-03RE1	WP013P-EB-H20-02	03/23/2023	04/05/2023	3/17/2023 11:22:00AM	543.65	2		200	Added 3/21/2023 by ABK
23C0063-04	WP013P-SCOTT03-MW001-01	03/23/2023	04/05/2023	3/17/2023 11:22:00AM	557.42	2		200	
23C0063-04RE1	WP013P-SCOTT03-MW001-01	03/23/2023	04/05/2023	3/17/2023 11:22:00AM	557.42	2		200	Added 3/21/2023 by ABK
23C0063-05	WP013P-LF01-MW22S-01	03/23/2023	04/05/2023	3/17/2023 11:22:00AM	544.77	2		200	
23C0063-05RE1	WP013P-LF01-MW22S-01	03/23/2023	04/05/2023	3/17/2023 11:22:00AM	544.77	2		200	Added 3/21/2023 by ABK
23C0063-06	WP013P-FRB-H20-01	03/23/2023	04/05/2023	3/17/2023 11:22:00AM	555.29	2		200	
23C0063-06RE1	WP013P-FRB-H20-01	03/23/2023	04/05/2023	3/17/2023 11:22:00AM	555.29	2		200	Added 3/21/2023 by ABK
23C0063-07	WP013P-SCOTT03-MW501-01	03/23/2023	04/05/2023	3/17/2023 11:22:00AM	519.5	2		200	
23C0063-07RE1	WP013P-SCOTT03-MW501-01	03/23/2023	04/05/2023	3/17/2023 11:22:00AM	519.5	2		200	Added 3/21/2023 by ABK
23C0100-01	FT004P-EB-H20-02	03/27/2023	04/07/2023	3/17/2023 11:22:00AM	529.69	2		200	
23C0100-01RE1	FT004P-EB-H20-02	03/27/2023	04/07/2023	3/17/2023 11:22:00AM	529.69	2		200	Added 3/21/2023 by ABK
23C0100-02	FT004P-FT04-MW05S-01	03/27/2023	04/07/2023	3/17/2023 11:22:00AM	504.35	2		200	
23C0100-02RE1	FT004P-FT04-MW05S-01	03/27/2023	04/07/2023	3/17/2023 11:22:00AM	504.35	2		200	Added 3/21/2023 by ABK
23C0100-02RE2	FT004P-FT04-MW05S-01	03/27/2023	04/07/2023	3/17/2023 11:22:00AM	504.35	2		20000	Added 3/22/2023 by ABK
23C0100-03	FT004P-SS19-MW03-01	03/27/2023	04/07/2023	3/17/2023 11:22:00AM	522.96	2		200	
23C0100-03RE1	FT004P-SS19-MW03-01	03/27/2023	04/07/2023	3/17/2023 11:22:00AM	522.96	2		200	Added 3/21/2023 by ABK
23C0100-04	FT004P-SS19-MW02-01	03/27/2023	04/07/2023	3/17/2023 11:22:00AM	561.96	2		200	

Spiking Witnessed By	Date	Preparation Reviewed By	Date
Extracts Received By	Date	Date	Date

# PREPARATION BENCH SHEET

## Organics

BCC0177

(Continued)

Print Date/Time: 03/23/2023 11:57 am

**Matrix: Water**

**Prepared using: PFAS - EPA 1633**

Analyses		Spiking Solution(s)			Surrogate Solution(s)		
1633	PFAS - MIX 1633 10ng/mL	23C0251	PFAS - MIX 1633 10ng/mL	23C0274	MPFAC-HIF-ES 20.0ng/mL	23C0274	MPFAC-HIF-ES 20.0ng/mL
23C0100-04RE1	FT004P-SS19-MW02-01	04/07/2023	3/17/2023 11:22:00AM	200	Added 3/21/2023 by ABK		
23C0100-04RE2	FT004P-SS19-MW02-01	04/07/2023	3/17/2023 11:22:00AM	20000	Added 3/22/2023 by ABK		
23C0100-05	FT004P-SS19-MW05-01	04/07/2023	3/17/2023 11:22:00AM	200			
23C0100-05RE1	FT004P-SS19-MW05-01	04/07/2023	3/17/2023 11:22:00AM	200	Added 3/21/2023 by ABK		
23C0100-05RE2	FT004P-SS19-MW05-01	04/07/2023	3/17/2023 11:22:00AM	20000	Added 3/22/2023 by ABK		
23C0100-06	FT004P-FT04-MW11-01	04/07/2023	3/17/2023 11:22:00AM	200			
23C0100-06RE1	FT004P-FT04-MW11-01	04/07/2023	3/17/2023 11:22:00AM	200	Added 3/21/2023 by ABK		
23C0100-06RE2	FT004P-FT04-MW11-01	04/07/2023	3/17/2023 11:22:00AM	20000	Added 3/22/2023 by DAG		
23C0100-06RE3	FT004P-FT04-MW11-01	04/07/2023	3/17/2023 11:22:00AM	200000	Added 3/22/2023 by DAG		
23C0100-07	FT004P-FT04-MW511-01	04/07/2023	3/17/2023 11:22:00AM	200			
23C0100-07RE1	FT004P-FT04-MW511-01	04/07/2023	3/17/2023 11:22:00AM	200	Added 3/21/2023 by ABK		
23C0100-07RE2	FT004P-FT04-MW511-01	04/07/2023	3/17/2023 11:22:00AM	20000	Added 3/22/2023 by DAG		
23C0100-07RE3	FT004P-FT04-MW511-01	04/07/2023	3/17/2023 11:22:00AM	200000	Added 3/22/2023 by DAG		
23C0115-02	FT004P-FT04-MW06S-01	04/10/2023	3/17/2023 11:22:00AM	200			
23C0115-02RE1	FT004P-FT04-MW06S-01	04/10/2023	3/17/2023 11:22:00AM	200	Added 3/21/2023 by ABK		
23C0115-02RE2	FT004P-FT04-MW06S-01	04/10/2023	3/17/2023 11:22:00AM	20000	Added 3/22/2023 by DAG		
23C0115-02RE3	FT004P-FT04-MW06S-01	04/10/2023	3/17/2023 11:22:00AM	200000	Added 3/22/2023 by DAG		
23C0115-03	FT004P-FT04-MW17-01	04/10/2023	3/17/2023 11:22:00AM	200			
23C0115-03RE1	FT004P-FT04-MW17-01	04/10/2023	3/17/2023 11:22:00AM	200	Added 3/21/2023 by ABK		
23C0115-03RE2	FT004P-FT04-MW17-01	04/10/2023	3/17/2023 11:22:00AM	20000	Added 3/22/2023 by DAG		
23C0115-03RE3	FT004P-FT04-MW17-01	04/10/2023	3/17/2023 11:22:00AM	200000	Added 3/22/2023 by DAG		
23C0115-04	FT004P-FT04-MW04S-01	04/10/2023	3/17/2023 11:22:00AM	200			
23C0115-04RE1	FT004P-FT04-MW04S-01	04/10/2023	3/17/2023 11:22:00AM	200	Added 3/21/2023 by ABK		
23C0115-04RE2	FT004P-FT04-MW04S-01	04/10/2023	3/17/2023 11:22:00AM	20000	Added 3/22/2023 by DAG		
		04/10/2023	3/17/2023 11:22:00AM	200000	Added 3/22/2023 by DAG		

Spiking Witnessed By	Preparation Reviewed By	Date
Extracts Received By	Date	Date

# PREPARATION BENCH SHEET

## Organics

Print Date/Time: 03/23/2023 11:57 am

BCC0177

(Continued)

**Matrix: Water**

**Prepared using: PFAS - EPA 1633**

Analyses		Spiking Solution(s)			Surrogate Solution(s)	
1633		23C0251	PFAS - MIX 1633 10ng/mL	23C0274	MPFAC-HIF-ES 20.0ng/mL	
23C0115-04RE3	FT004P-FT04-MW04S-01	04/10/2023	3/17/2023 11:22:00AM	200000	Added 3/22/2023 by DAG	
23C0146-01	RHSF-PUMP-PR-01-031523-N	04/12/2023	3/17/2023 11:22:00AM	200	"Report relevant surrogates"	
23C0146-01IRE1	RHSF-PUMP-PR-01-031523-N	04/12/2023	3/17/2023 11:22:00AM	200	"Report relevant surrogates"	
23C0146-02	RHS-EF-TRAIN-01-031523-N	04/12/2023	3/17/2023 11:22:00AM	200	"Report relevant surrogates"	
23C0146-02RE1	RHS-EF-TRAIN-01-031523-N	04/12/2023	3/17/2023 11:22:00AM	200	"Report relevant surrogates"	
BCC0177-BLK1	Blank		3/17/2023 11:22:00AM	0		
BCC0177-BS1	LCS		3/17/2023 11:22:00AM	200		
BCC0177-MRL1	MRL Check		3/17/2023 11:22:00AM	20		
BCC0177-MS1	Matrix Spike [23C0063-02]		3/17/2023 11:22:00AM	200		
BCC0177-MSD1	Matrix Spike Dup [23C0063-02]		3/17/2023 11:22:00AM	200		

Standard	Description	LotNum
22C0296	Envi-carb	122395
23B0116	Reagent -0.3M Formic Acid	M13H051
23B0413	Reagent - 1.0% Ammonia Hydroxide	219481
23B0607	Am. Ac. preservative	*
23C0006	Reagent - 0.05MFA wash	x

Start Date/Time \_\_\_\_\_

Stop Date/Time \_\_\_\_\_

Batch Comments:

Spiked by: DAG 3/17/23 11:25 AM

Balance #: WB2

Cartridge: Oasis

Concentration: 3/12/23 6:30 AM - 2:45 PM

Spiking Witnessed By \_\_\_\_\_ Date \_\_\_\_\_

Preparation Reviewed By \_\_\_\_\_ Date \_\_\_\_\_

Extracts Received By \_\_\_\_\_ Date \_\_\_\_\_

# INJECTION LOG - ANALYSIS SEQUENCE SUMMARY

EPA 1633

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC00916  
 Calibration: 2310010

SDG:  
 Project: Red Hill AFFF Assessment Sampling  
 Instrument: Saphira

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	SC00916-CAL1	S2023-03-07A (1)	03/07/23 15:26
Cal Standard	SC00916-CAL2	S2023-03-07A (2)	03/07/23 15:38
Cal Standard	SC00916-CAL3	S2023-03-07A (3)	03/07/23 15:51
Cal Standard	SC00916-CAL4	S2023-03-07A (4)	03/07/23 16:04
Cal Standard	SC00916-CAL5	S2023-03-07A (5)	03/07/23 16:17
Cal Standard	SC00916-CAL6	S2023-03-07A (6)	03/07/23 16:30
Cal Standard	SC00916-CAL7	S2023-03-07A (7)	03/07/23 16:43
Cal Standard	SC00916-CAL8	S2023-03-07A (8)	03/07/23 16:56
Initial Cal Blank	SC00916-ICB1	S2023-03-07A (9)	03/07/23 17:09
Secondary Cal Check	SC00916-SCV1	S2023-03-07A (10)	03/07/23 17:22



# INJECTION LOG - ANALYSIS SEQUENCE SUMMARY

EPA 1633

Laboratory: APPL, LLC  
 Client: AECOM  
 Sequence: SC01124  
 Calibration: 2310010

SDG:  
 Project: Red Hill AFFF Assessment Sampling  
 Instrument: Saphira

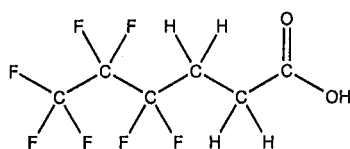
Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Blank	SC01124-CCB1	S2023-03-21A (1)	03/21/23 13:57
Low Cal Check	SC01124-LCV1	S2023-03-21A (2)	03/21/23 14:10
Calibration Check	SC01124-CCV1	S2023-03-21A (3)	03/21/23 14:23
Performance Mix	SC01124-PEM1	S2023-03-21A (4)	03/21/23 14:36
Performance Mix	SC01124-PEM2	S2023-03-21A (5)	03/21/23 14:49
Calibration Blank	SC01124-CCB2	S2023-03-21A (6)	03/21/23 15:02
Calibration Check	SC01124-CCV2	S2023-03-21A (11)	03/21/23 16:06
Calibration Blank	SC01124-CCB3	S2023-03-21A (12)	03/21/23 16:19
Blank	BCC0177-BLK1	S2023-03-21A (13)	03/21/23 16:32
LCS	BCC0177-BS1	S2023-03-21A (14)	03/21/23 16:45
MRL Check	BCC0177-MRL1	S2023-03-21A (15)	03/21/23 16:58
RHSF-PUMP-PR-01-031523-N	23C0146-01	S2023-03-21A (18)	03/21/23 17:37
RHSF-PUMP-PR-01-031523-N	23C0146-01RE1	S2023-03-21A (19)	03/21/23 17:49
RHS-EF-TRAIN-01-031523-N	23C0146-02	S2023-03-21A (20)	03/21/23 18:02
RHS-EF-TRAIN-01-031523-N	23C0146-02RE1	S2023-03-21A (21)	03/21/23 18:15
Calibration Check	SC01124-CCV3	S2023-03-21A (36)	03/21/23 21:28
Calibration Blank	SC01124-CCB4	S2023-03-21A (37)	03/21/23 21:41
Calibration Check	SC01124-CCV4	S2023-03-21A (58)	03/22/23 02:12
Calibration Blank	SC01124-CCB5	S2023-03-21A (59)	03/22/23 02:25



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** FPrPA **LOT NUMBER:** FPrPA1020  
**COMPOUND:** 3-Perfluoropropyl propanoic acid  
**STRUCTURE:** **CAS #:** 356-02-5



**MOLECULAR FORMULA:**  $C_8H_5F_7O_2$  **MOLECULAR WEIGHT:** 242.09  
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/mL}$  **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/12/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 11/12/2025  
**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% of the unsaturated 3:3 telomer acid ( $C_8H_3F_7O_2$ ) as an impurity determined by  $^{19}\text{F}$  NMR.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
 B.G. Chittim, General Manager

**Date:** 11/27/2020  
 (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

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

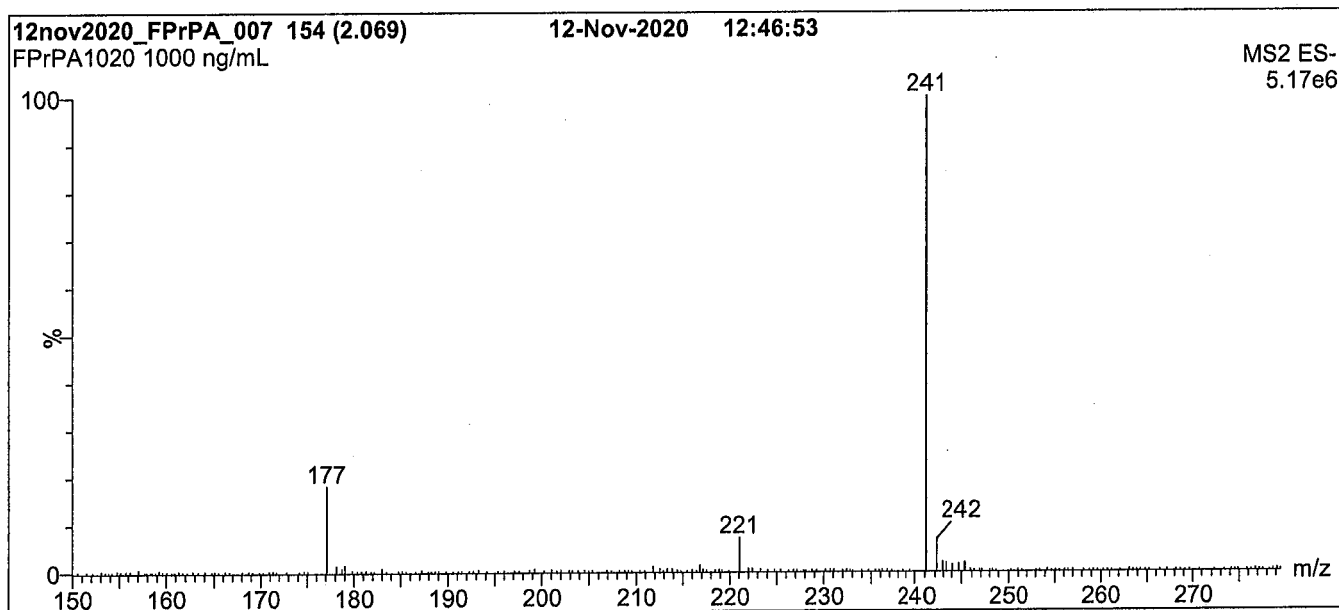
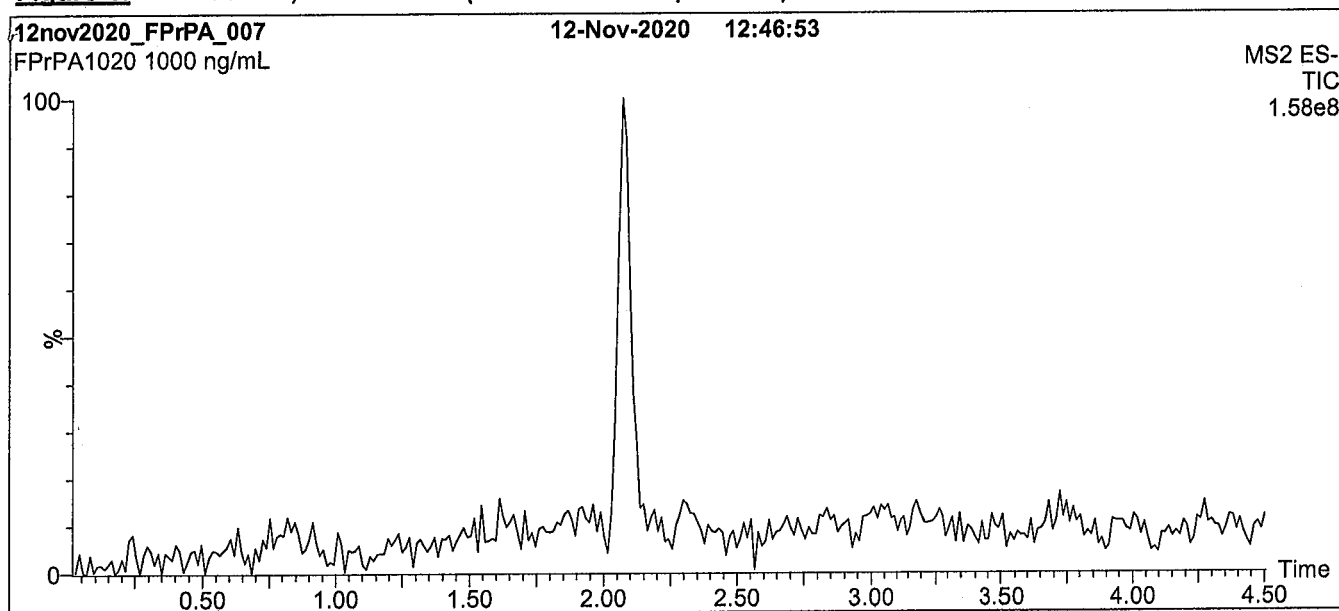
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: FPrPA; LC/MS Data (TIC and Mass Spectrum)****Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H<sub>2</sub>O / 40% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for 2 min  
before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (150 - 850 amu)

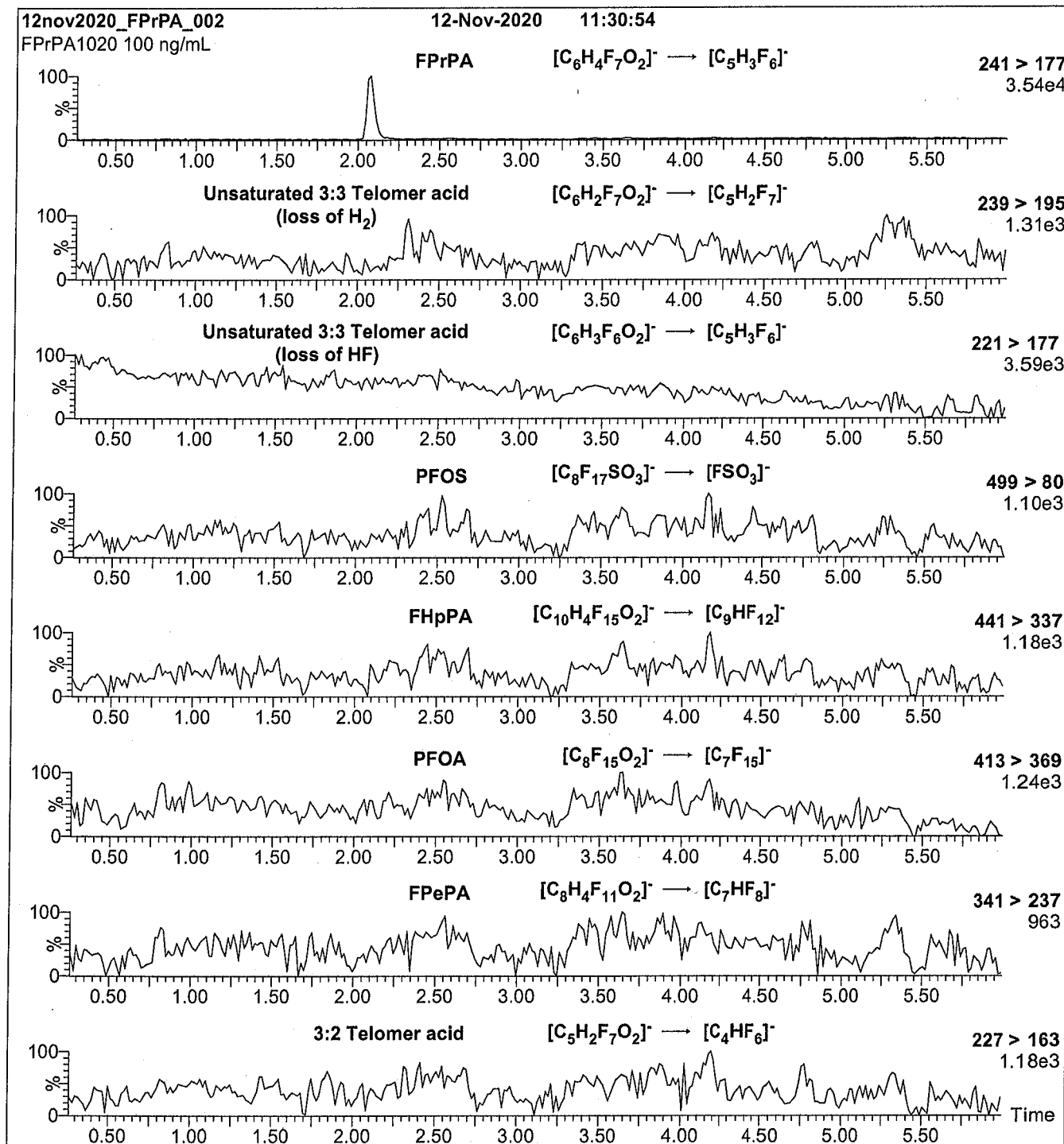
Source: Electrospray (negative)

Capillary Voltage (kV) = 0.50

Cone Voltage (V) = 18.50

Desolvation Temperature ( $^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000

**Figure 2: FPrPA; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (FPrPA)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ L/min**MS Parameters:**

Collision Gas (mbar) = 3.49e-3

Collision Energy (eV) = 10

# Analytical Standard Record

**21L0004**

Description:	PFAS - SAS 3:3FTA 50ug/mL	Expires:	06/05/2022
Standard Type:	Analyte Spike	Prepared:	12/07/2021
Solvent:	MeOH	Prepared By:	Hart Hedgpeth
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 16:03 by HGH
Comments:	3:3 FTCA 50.0ug/mL		

<b>Analyte</b>	<b>Parent</b>	<b>CAS Number</b>	<b>Concentration</b>	<b>Units</b>
3:3 FTA		113507-82-7	50	ug/mL



# WELLINGTON LABORATORIES

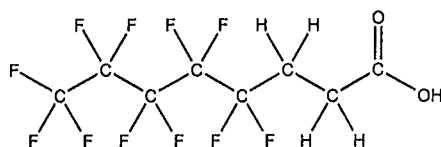
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** FPePA  
**COMPOUND:** 3-Perfluoropentyl propanoic acid

**LOT NUMBER:** FPePA1120

**STRUCTURE:**

**CAS #:** 914637-49-3



**MOLECULAR FORMULA:**  $C_8H_5F_{11}O_2$   
**CONCENTRATION:**  $50.0 \pm 2.5$  µg/mL  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/11/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 11/11/2025  
**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: 11/27/2020  
(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

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**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

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$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

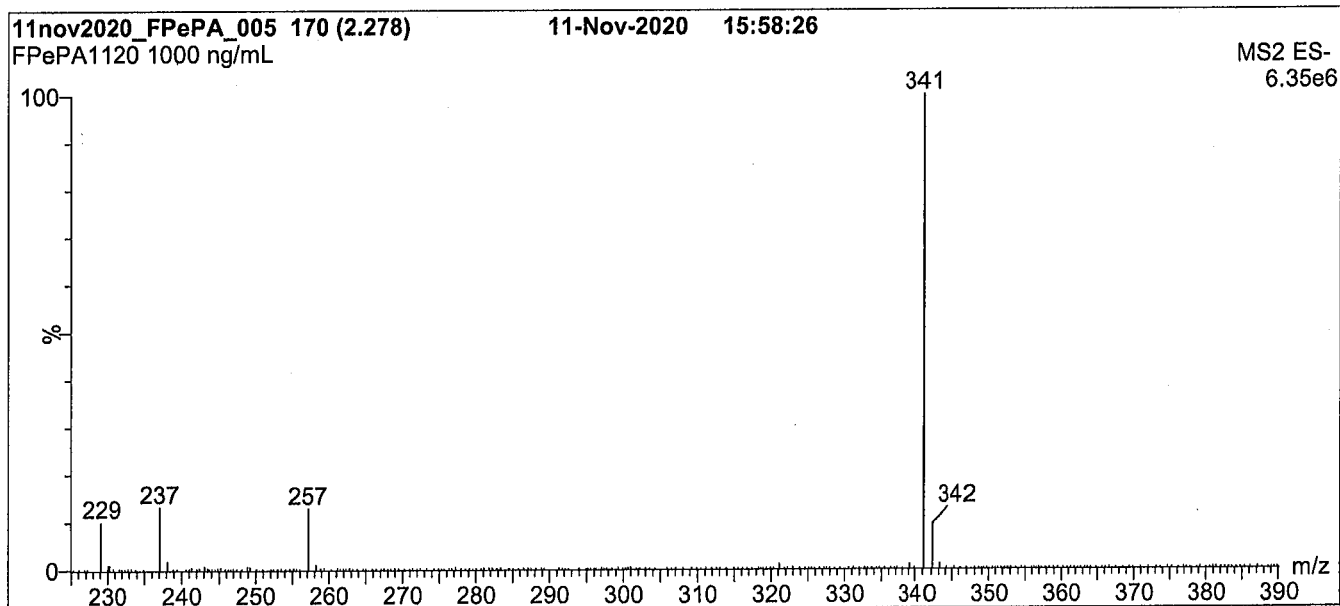
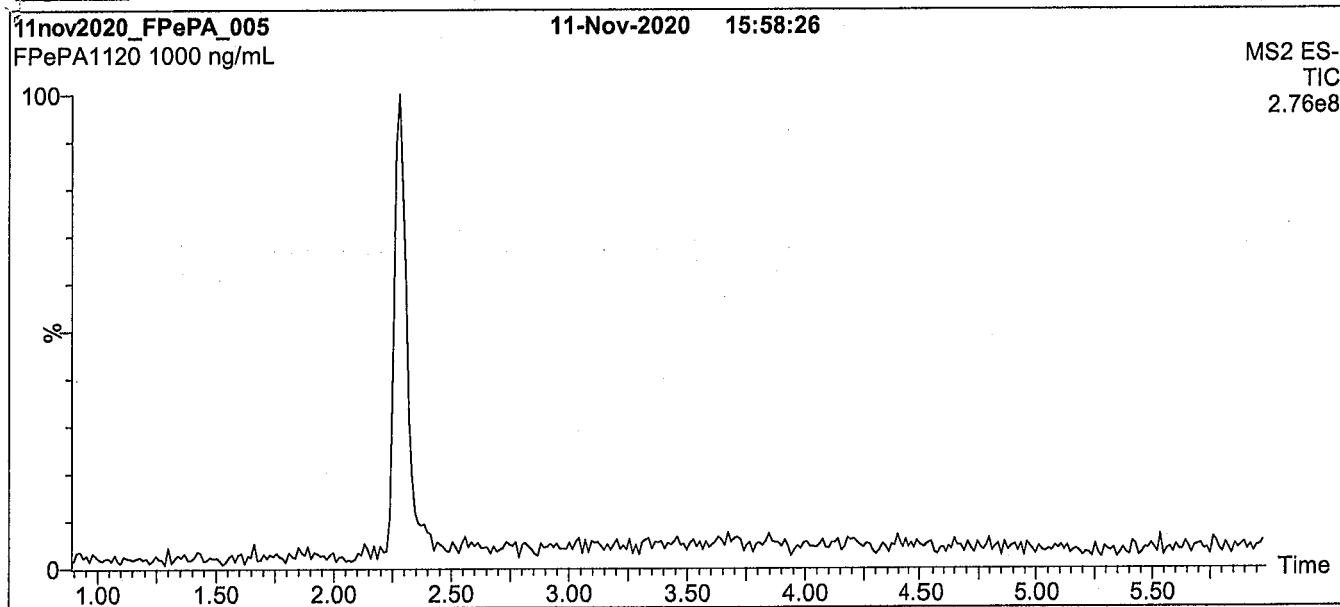
**QUALITY MANAGEMENT:**

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\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*



**Figure 1: FPePA; LC/MS Data (TIC and Mass Spectrum)****Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

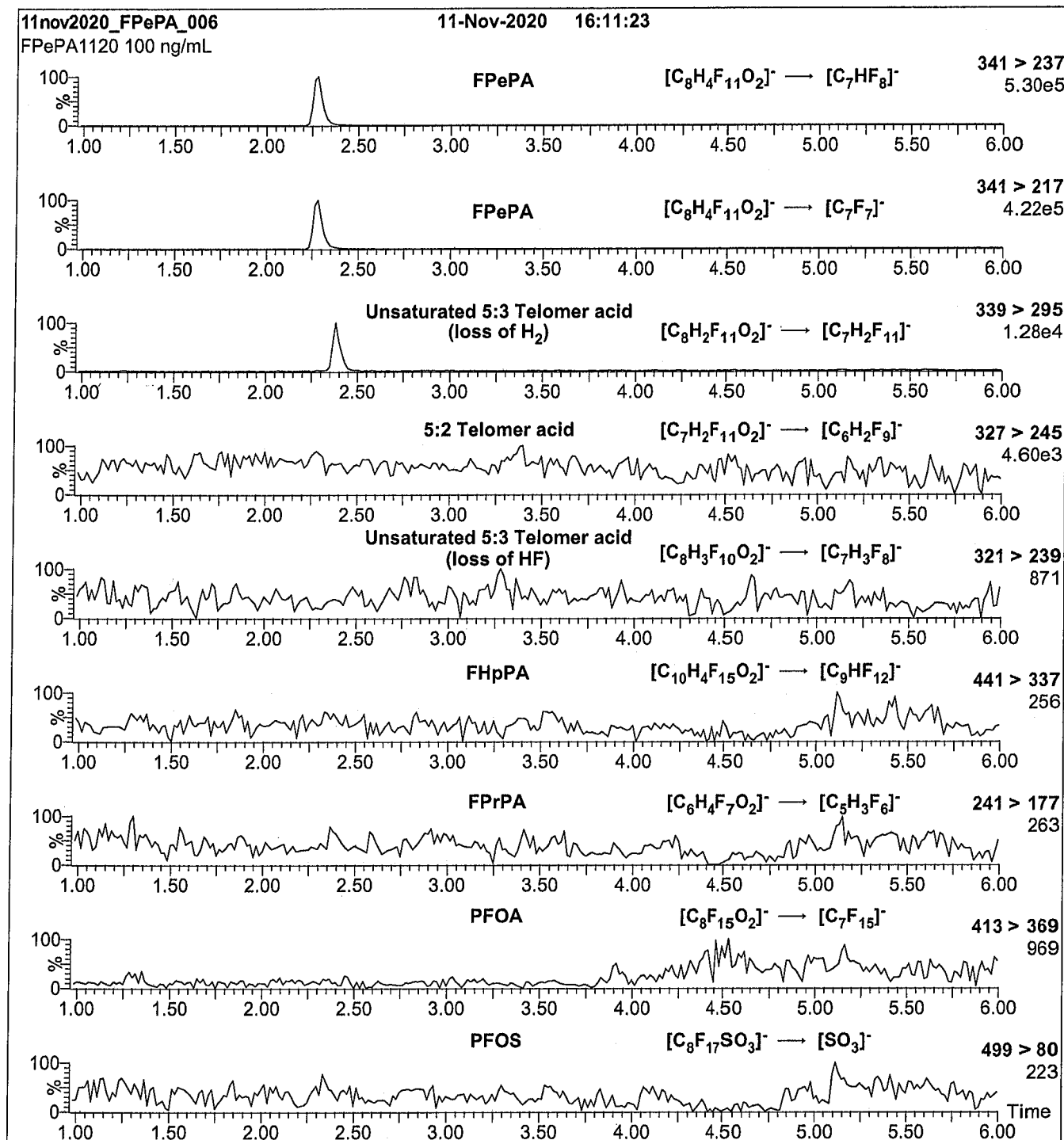
Mobile phase: Gradient  
Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for  
2 min before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 0.50  
Cone Voltage (V) = 18.50  
Desolvation Temperature (°C) = 500  
Desolvation Gas Flow (L/hr) = 1000

**Figure 2: FPePA; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (FPePA)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ L/min**MS Parameters:**

Collision Gas (mbar) = 3.24e-3

Collision Energy (eV) = 10

# Analytical Standard Record

**21L0005**

Description:	PFAS - SAS 5:3FTA 50ug/mL	Expires:	06/05/2022
Standard Type:	Analyte Spike	Prepared:	12/07/2021
Solvent:	MeOH	Prepared By:	Hart Hedgpeth
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 16:03 by HGH
Comments:	5:3 FTCA 50.0ug/mL		

<b>Analyte</b>	<b>Parent</b>	<b>CAS Number</b>	<b>Concentration</b>	<b>Units</b>
5:3 FTA		914637-49-3	50	ug/mL

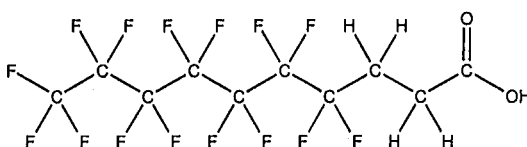


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** FHpPA **LOT NUMBER:** FHpPA1020  
**COMPOUND:** 3-Perfluoroheptyl propanoic acid

**STRUCTURE:** **CAS #:** 812-70-4



**MOLECULAR FORMULA:**  $C_{10}H_6F_{16}O_2$  **MOLECULAR WEIGHT:** 442.12  
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/mL}$  **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/12/2020  
**EXPIRY DATE:** (mm/dd/yyyy) 11/12/2025  
**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.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:   
 B.G. Chittim, General Manager

Date: 11/27/2020  
 (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

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

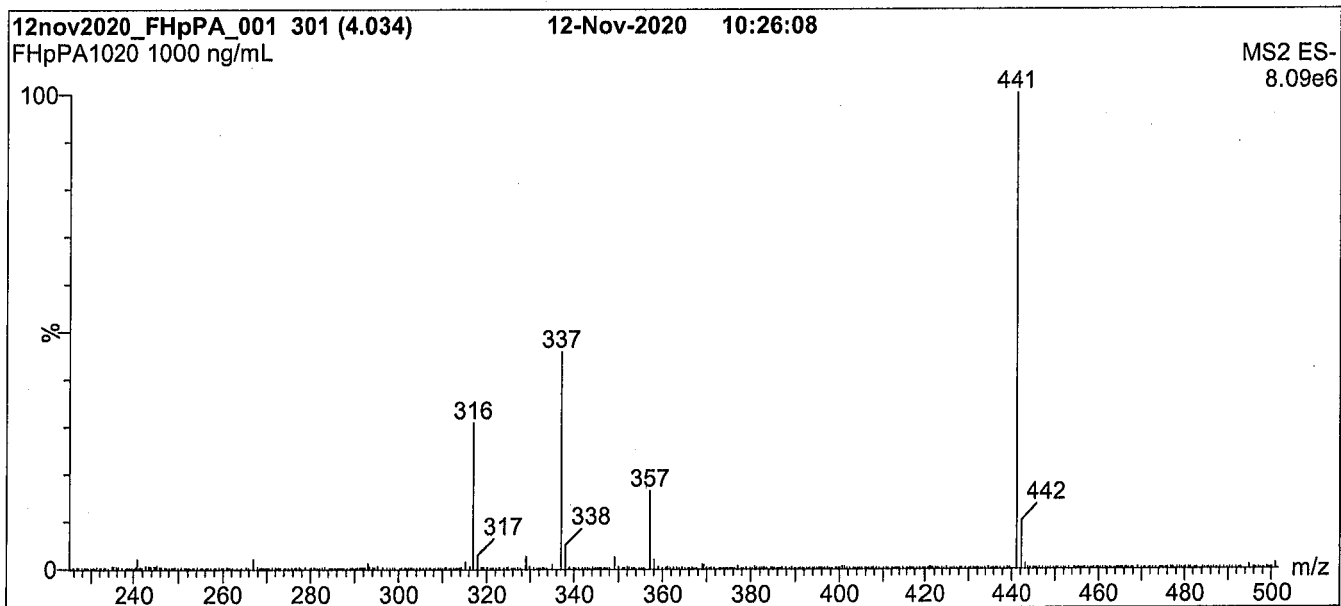
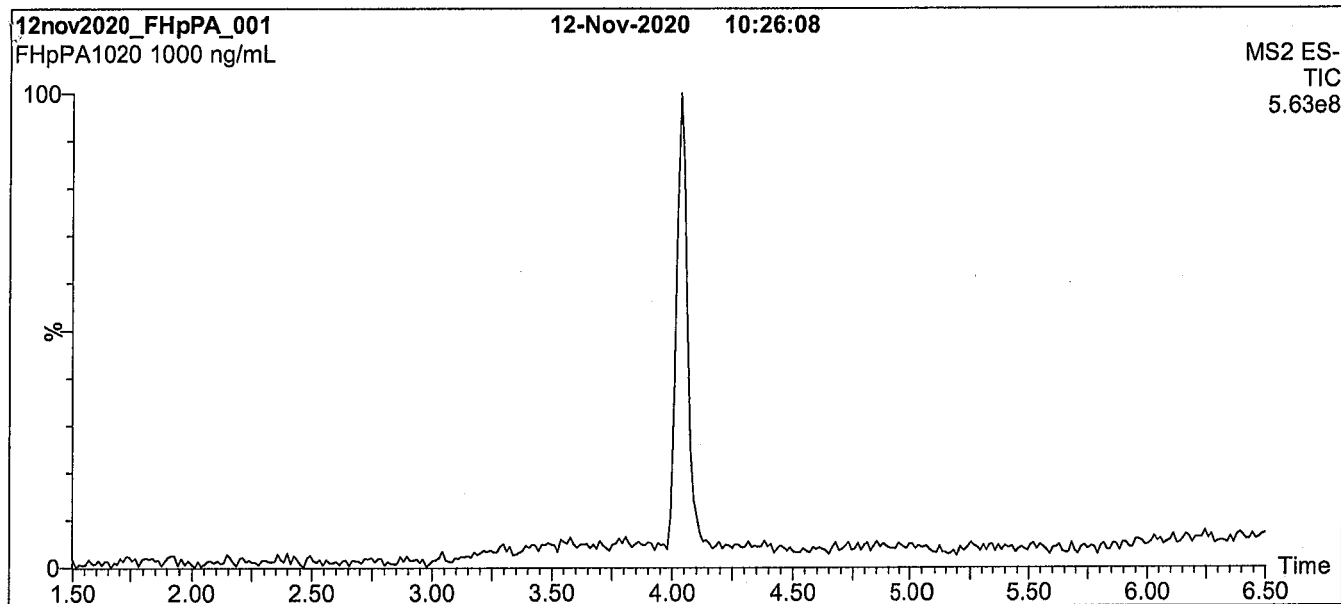
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: FHpPA; LC/MS Data (TIC and Mass Spectrum)****Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

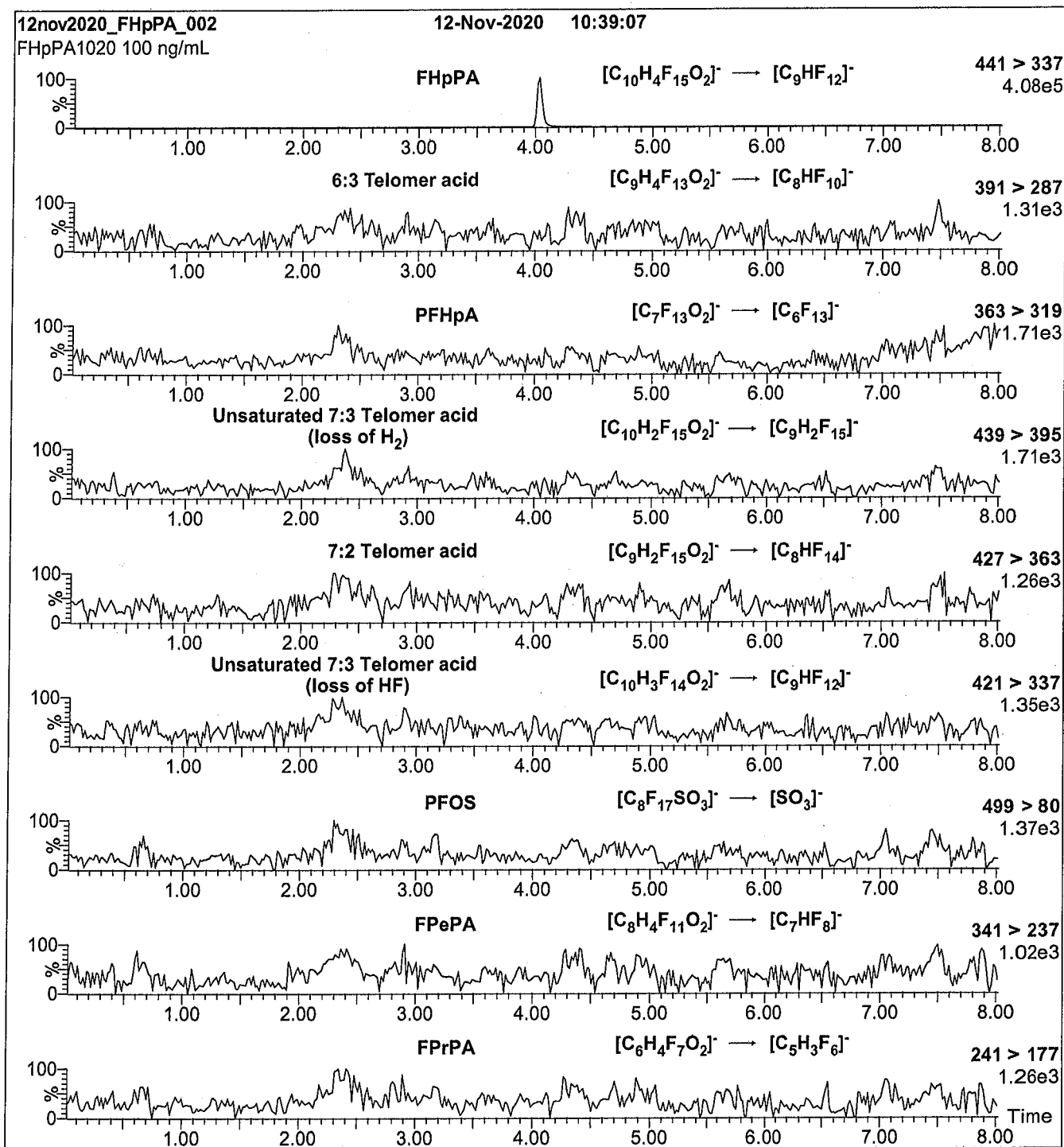
Mobile phase: Gradient  
Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for  
2 min before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 0.50  
Cone Voltage (V) = 28.50  
Desolvation Temperature (°C) = 500  
Desolvation Gas Flow (L/hr) = 1000

**Figure 2: FHpPA; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (FHpPA)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ L/min**MS Parameters:**Collision Gas (mbar) = 3.41e-3  
Collision Energy (eV) = 8

# Analytical Standard Record

**21L0007**

Description:	PFAS - SAS 7:3FTA 50ug/mL	Expires:	06/05/2022
Standard Type:	Analyte Spike	Prepared:	12/07/2021
Solvent:	MeOH	Prepared By:	Hart Hedgpeth
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	12/07/2021 16:16 by HGH
Comments:	7:3 FTCA 50.0ug/mL		

<b>Analyte</b>	<b>Parent</b>	<b>CAS Number</b>	<b>Concentration</b>	<b>Units</b>
7:3 FTA		812-70-4	50	ug/mL



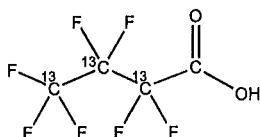


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M3PFBA **LOT NUMBER:** M3PFBA0721  
**COMPOUND:** Perfluoro-n-(2,3,4-<sup>13</sup>C<sub>3</sub>)butanoic acid

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>3</sub><sup>12</sup>CHF<sub>7</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 217.02  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol  
 Water (<1%)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
 (2,3,4-<sup>13</sup>C<sub>3</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 08/19/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 08/19/2026  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan 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-(<sup>13</sup>C<sub>3</sub>)propanoic acid and also contains ~1.0% of perfluoro-n-(1,2,3,4-<sup>13</sup>C<sub>4</sub>)butanoic acid due to the naturally occurring isotopic abundance of <sup>13</sup>C in the unlabelled carbon atom.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
 B.G. Chittim, General Manager

**Date:** 08/25/2021  
 (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

**INTENDED USE:**

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**SYNTHESIS / CHARACTERIZATION:**

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**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

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$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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**TRACEABILITY:**

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**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

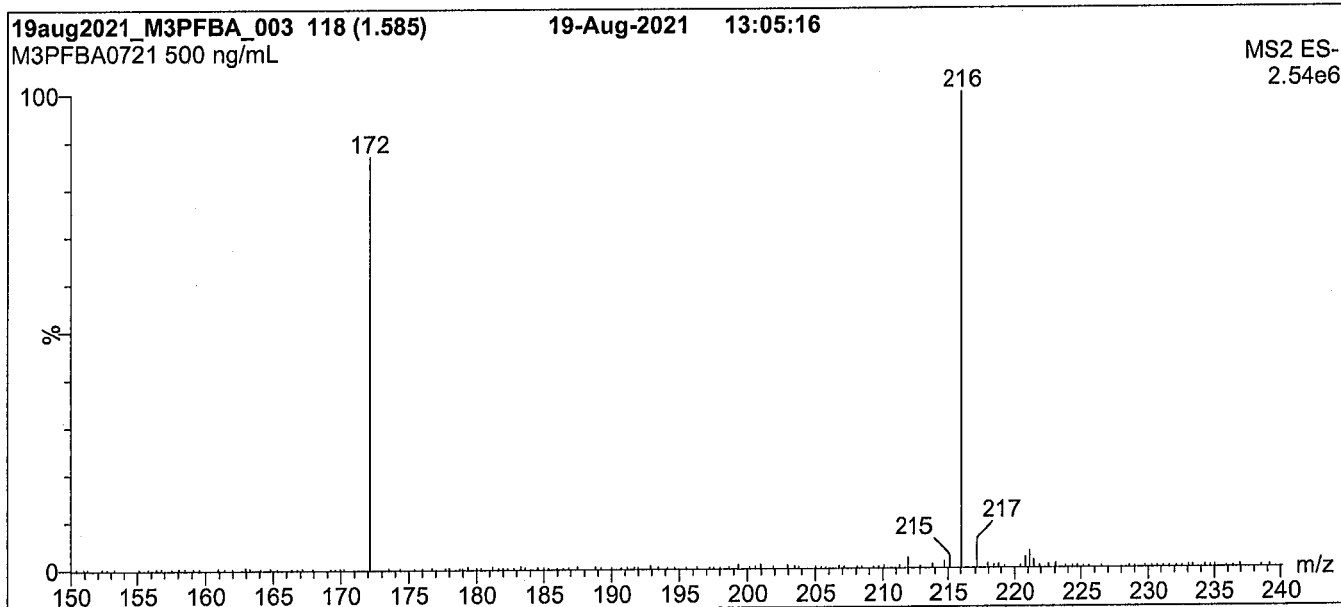
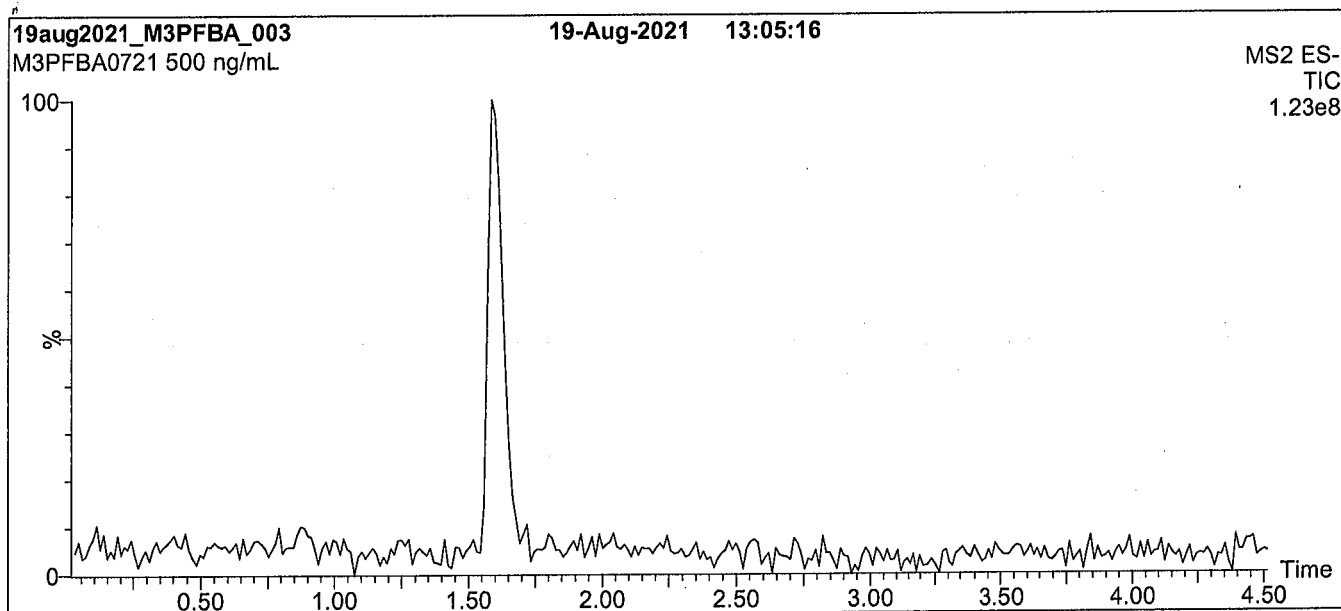
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

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**Figure 1: M3PFBA; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

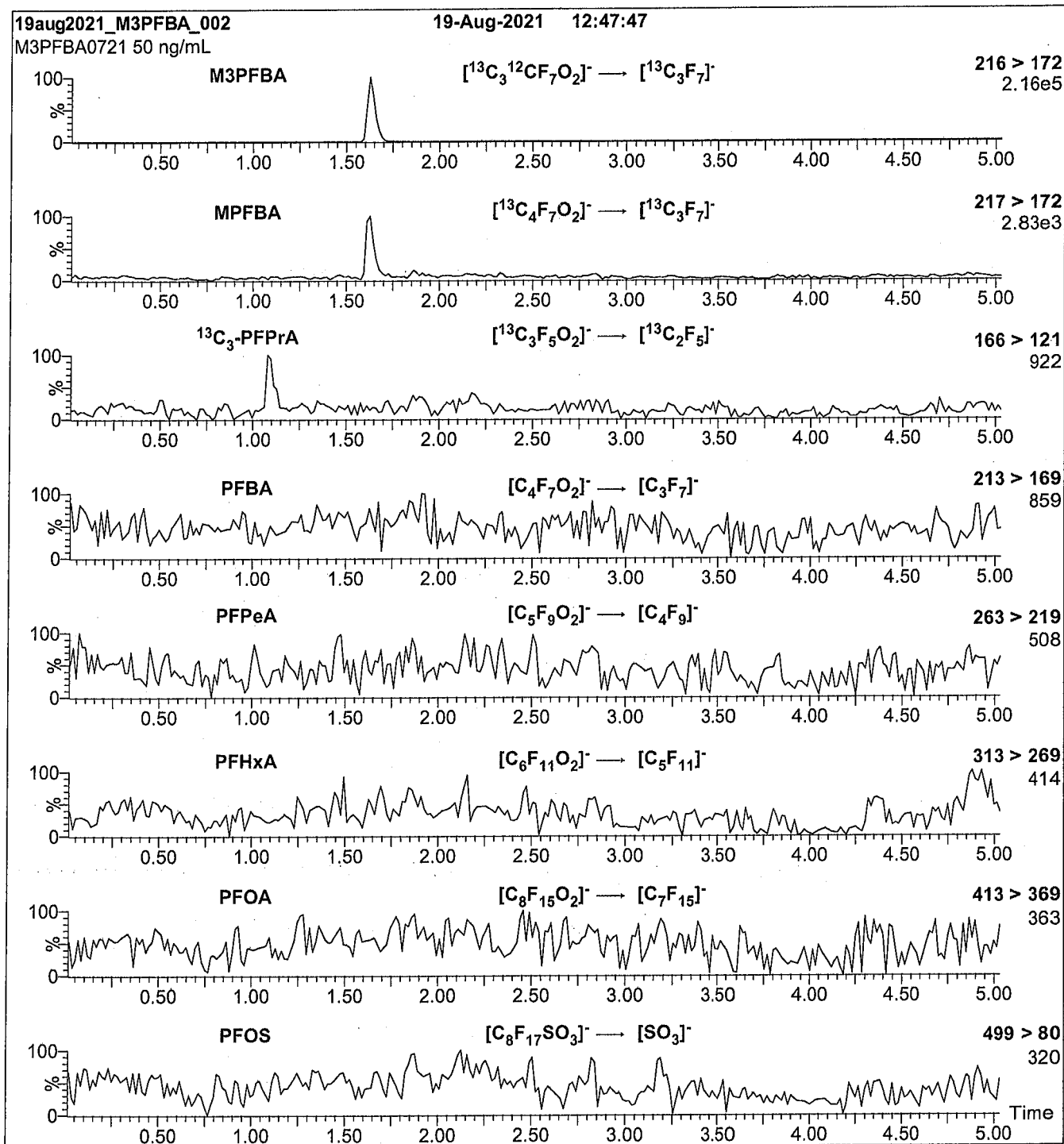
Mobile phase: Gradient  
Start: 60% H<sub>2</sub>O / 40% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for  
2 min before returning to initial conditions in 0.5 min.  
Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 10.00  
Desolvation Temperature ( $^{\circ}$ C) = 500  
Desolvation Gas Flow (L/hr) = 1000

**Figure 2: M3PFBA; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (M3PFBA)

Mobile phase: Same as Figure 1

Flow: 300  $\mu\text{L}/\text{min}$ **MS Parameters:**

Collision Gas (mbar) = 3.45e-3

Collision Energy (eV) = 8

# Analytical Standard Record

**22A0116**

Description:	PFAS - IIS M3PFBA 50ug/mL	Expires:	08/19/2026
Standard Type:	Analyte Spike	Prepared:	08/19/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

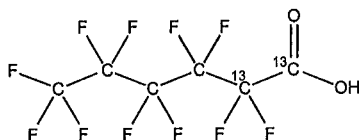
<b>Analyte</b>	<b>Parent</b>	<b>CAS Number</b>	<b>Concentration</b>	<b>Units</b>
13C3-PFBA		13C3-PFBA	50	ug/mL



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFHxA **LOT NUMBER:** MPFHxA0921  
**COMPOUND:** Perfluoro-n-(1,2-<sup>13</sup>C<sub>2</sub>)hexanoic acid  
**STRUCTURE:** **CAS #:** 960315-47-3



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>4</sub>HF<sub>11</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 316.04  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol  
 Water (<1%)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
 (1,2-<sup>13</sup>C<sub>2</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 10/04/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 10/04/2026  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan 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: 10/22/2021  
 (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

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where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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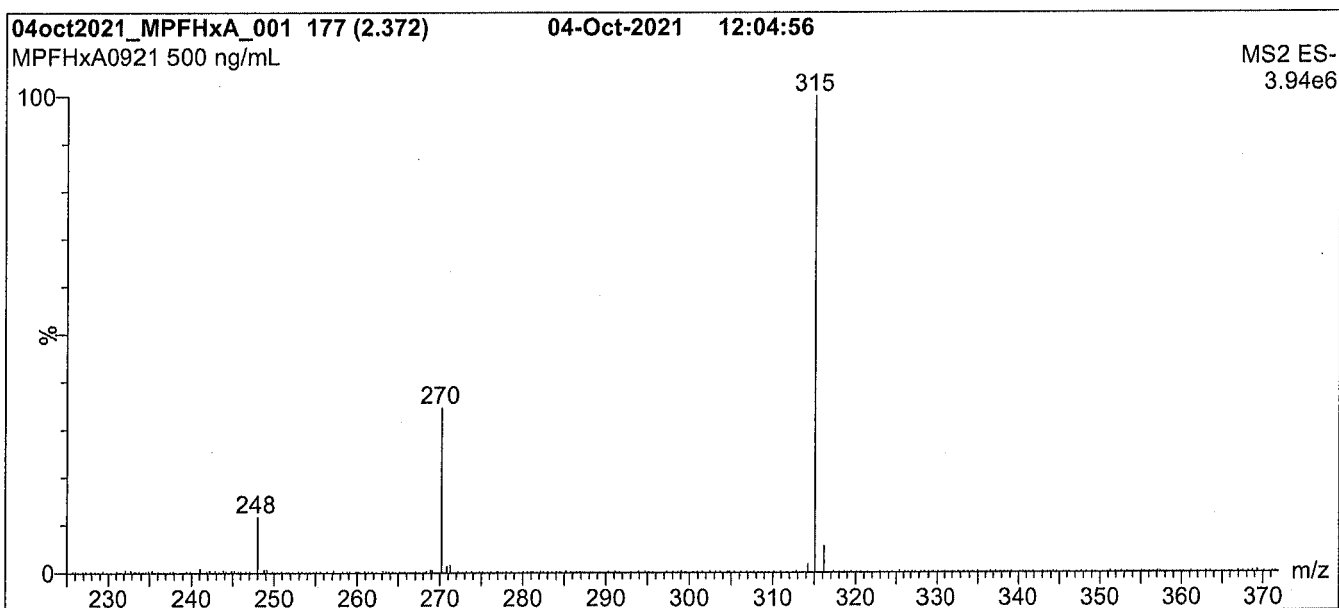
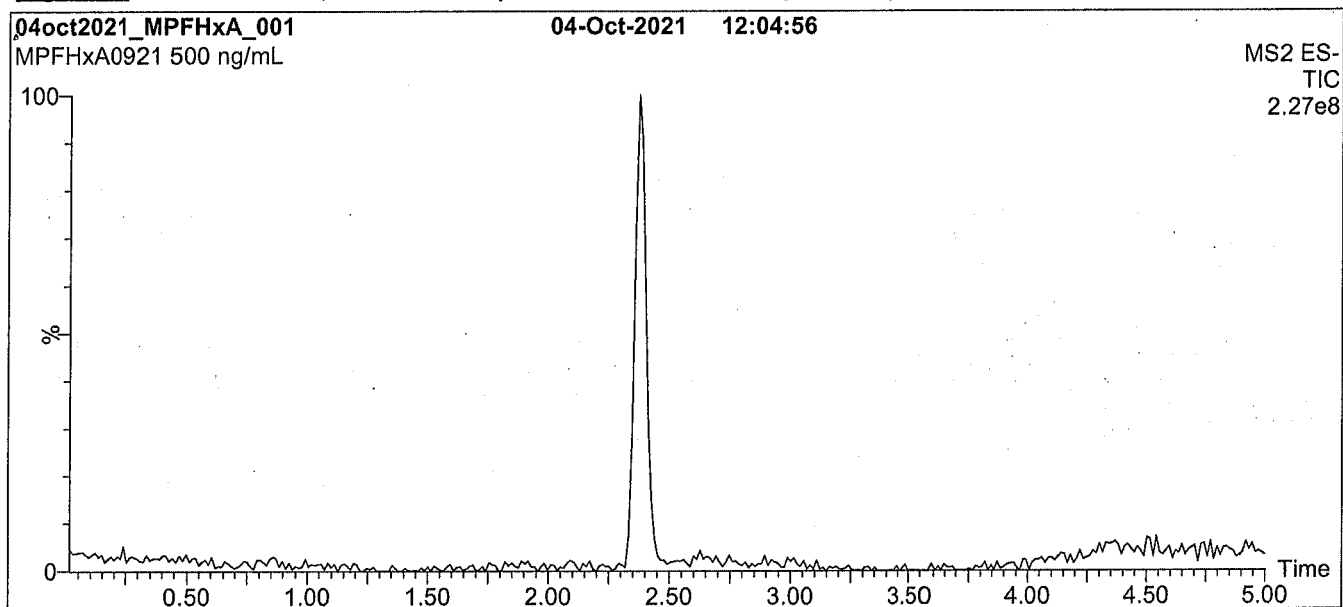
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**Figure 1: MPFHxA; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H<sub>2</sub>O / 50% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for  
2 min before returning to initial conditions in 1 min.  
Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)

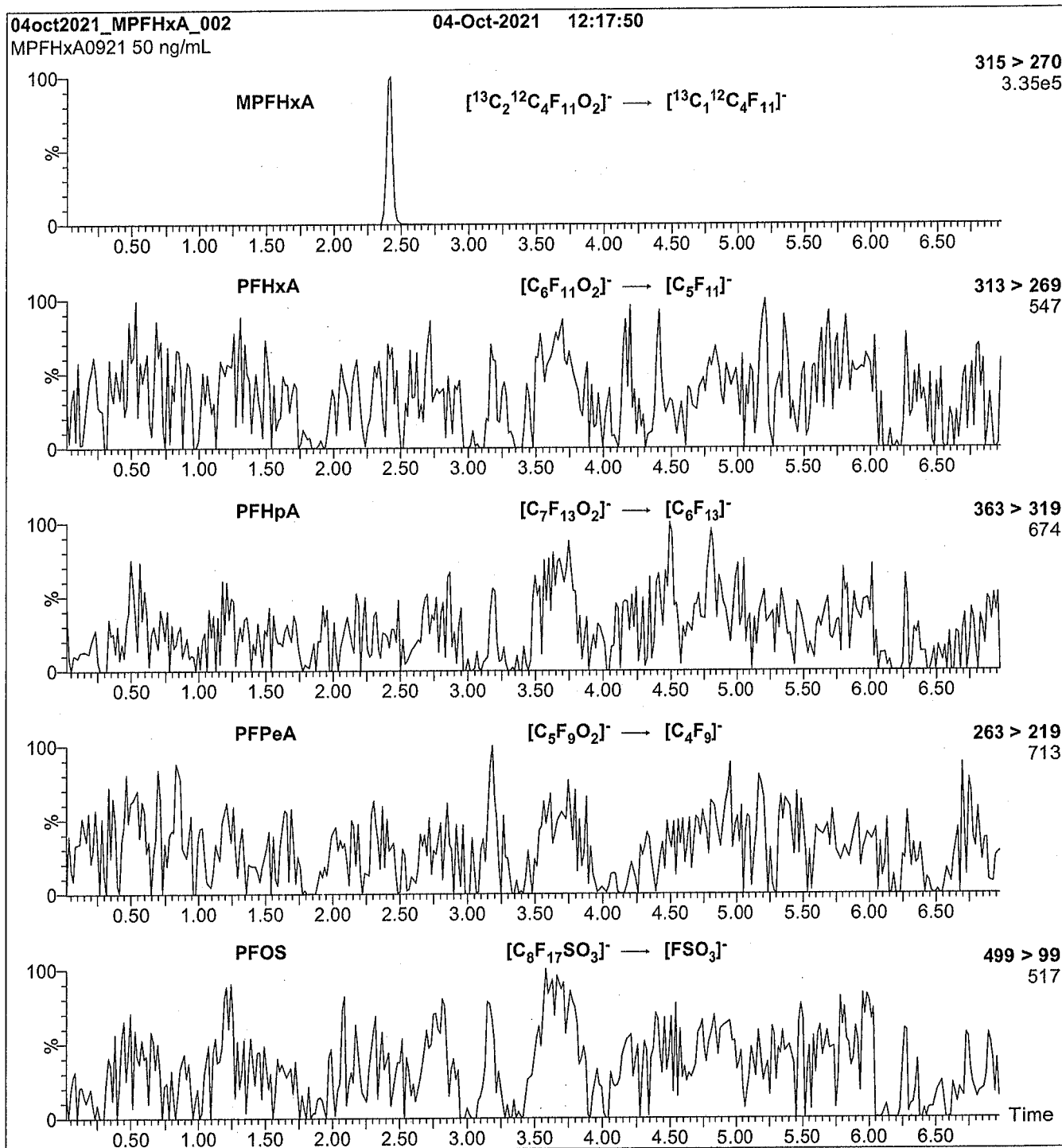
Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature ( $^{\circ}$ C) = 500

Desolvation Gas Flow (L/hr) = 1000



**Figure 2: MPFHxA; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (MPFHxA)

Mobile phase: Same as Figure 1

Flow: 300  $\mu\text{L}/\text{min}$ **MS Parameters:**

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 8

# Analytical Standard Record

**22A0117**

Description:	PFAS - IIS MPFHxA 50ug/mL	Expires:	10/04/2026
Standard Type:	Analyte Spike	Prepared:	10/04/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

<b>Analyte</b>	<b>Parent</b>	<b>CAS Number</b>	<b>Concentration</b>	<b>Units</b>
13C2-PFHxA		13C2-PFHxA	50	ug/mL

# Analytical Standard Record

**22A0117**

Description:	PFAS - IIS MPFHxA 50ug/mL	Expires:	10/04/2026
Standard Type:	Analyte Spike	Prepared:	10/04/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

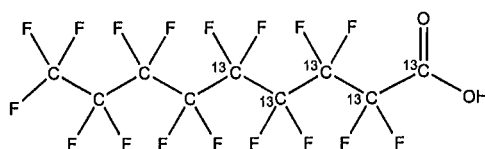
<b>Analyte</b>	<b>Parent</b>	<b>CAS Number</b>	<b>Concentration</b>	<b>Units</b>
13C2-PFHxA		13C2-PFHxA	50	ug/mL



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFNA **LOT NUMBER:** MPFNA1021  
**COMPOUND:** Perfluoro-n-(1,2,3,4,5-<sup>13</sup>C<sub>5</sub>)nonanoic acid  
**STRUCTURE:** **CAS #:** 960315-49-5



**MOLECULAR FORMULA:**  $^{13}\text{C}_5^{12}\text{C}_4\text{HF}_{17}\text{O}_2$  **MOLECULAR WEIGHT:** 469.04  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol  
 Water (<1%)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
 (1,2,3,4,5-<sup>13</sup>C<sub>5</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 10/29/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 10/29/2026  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

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

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Certified By:   
 B.G. Chittim, General Manager

Date: 11/01/2021  
 (mm/dd/yyyy)

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 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

**INTENDED USE:**

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**HANDLING:**

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**SYNTHESIS / CHARACTERIZATION:**

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**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$ , on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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**LIMITED WARRANTY:**

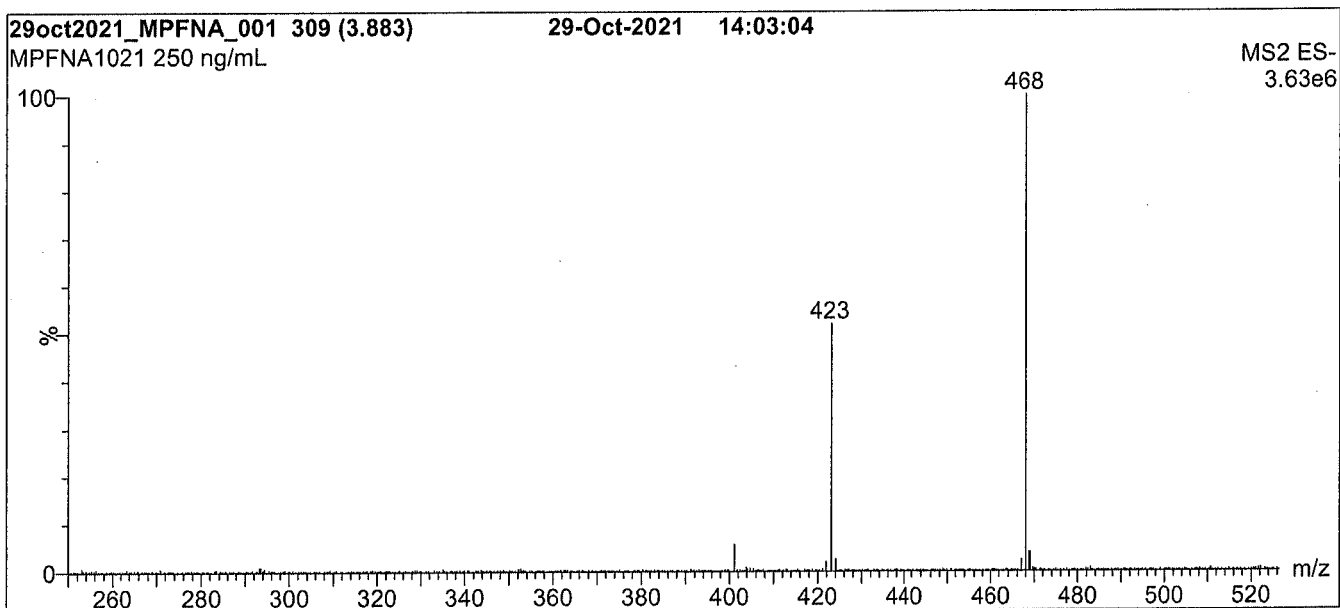
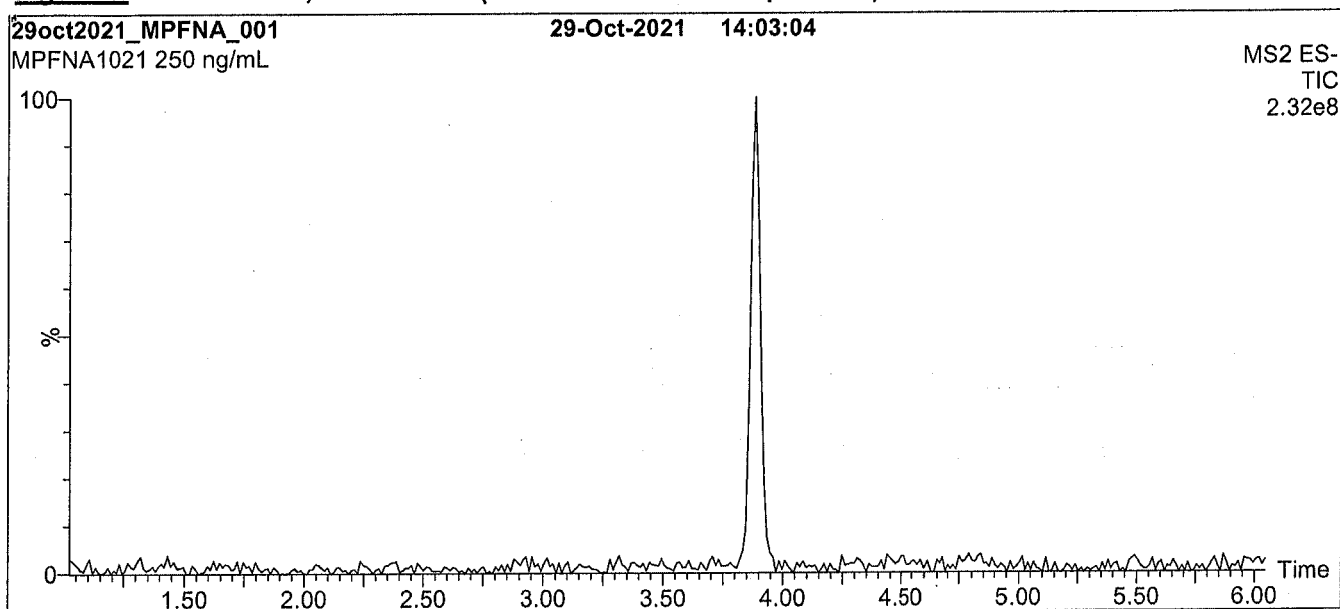
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**QUALITY MANAGEMENT:**

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**Figure 1: MPFNA; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

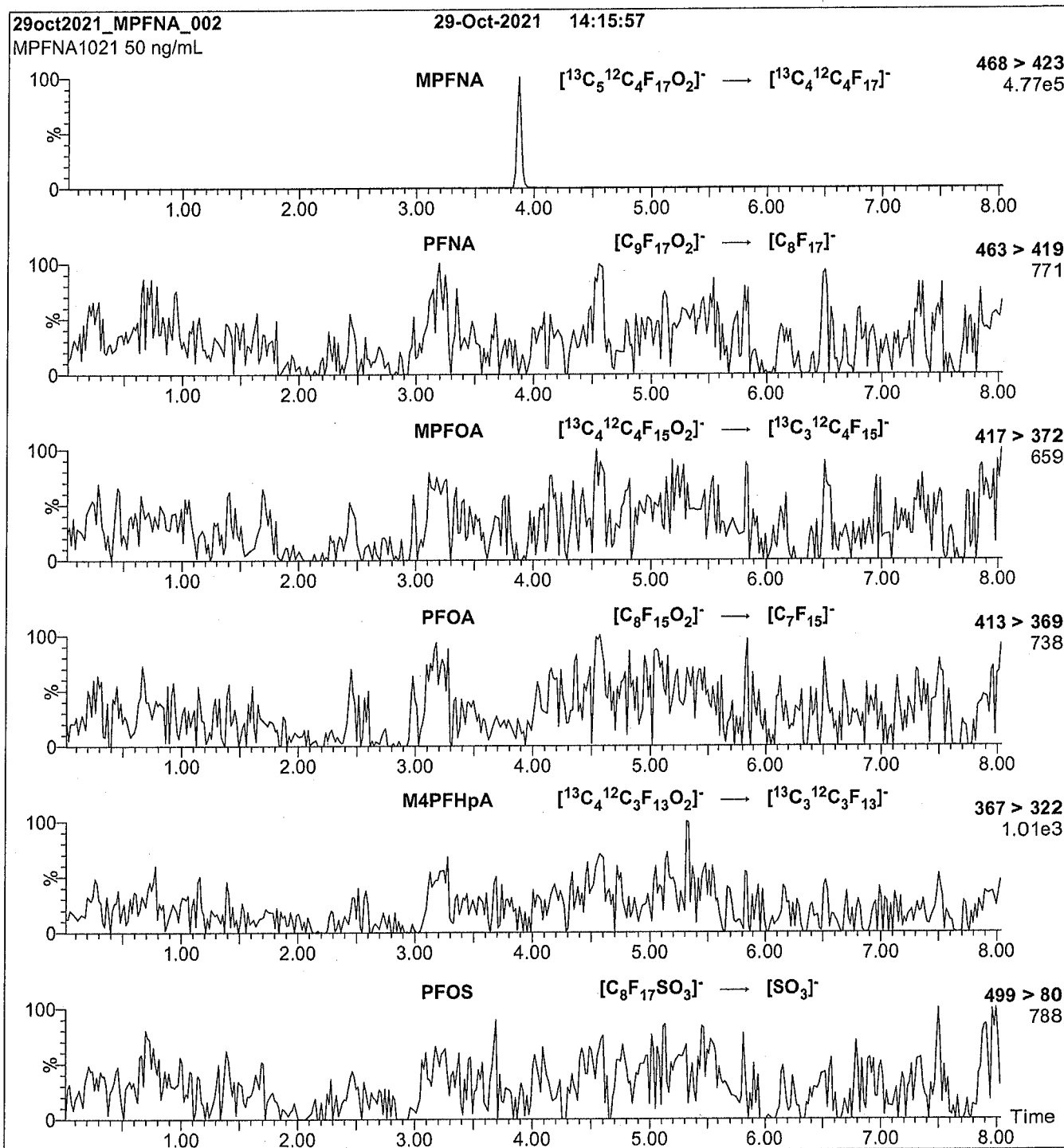
Mobile phase: Gradient  
Start: 40% H<sub>2</sub>O / 60% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for  
2 min before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 10.00  
Desolvation Temperature (°C) = 500  
Desolvation Gas Flow (L/hr) = 1000

**Figure 2: MPFNA; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (MPFNA)

Mobile phase: Same as Figure 1

Flow: 300  $\mu\text{L}/\text{min}$ **MS Parameters:**

Collision Gas (mbar) = 3.16e-3

Collision Energy (eV) = 10

# Analytical Standard Record

**22A0118**

Description:	PFAS - IIS MPFNA 50ug/mL	Expires:	10/29/2026
Standard Type:	Analyte Spike	Prepared:	10/29/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

Analyte	Parent	CAS Number	Concentration	Units
13C5-PFNA		13C5-PFNA	50	ug/mL



# Analytical Standard Record

**22A0118**

Description:	PFAS - IIS MPFNA 50ug/mL	Expires:	10/29/2026
Standard Type:	Analyte Spike	Prepared:	10/29/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
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Analyte	Parent	CAS Number	Concentration	Units
13C5-PFNA		13C5-PFNA	50	ug/mL



# WELLINGTON LABORATORIES

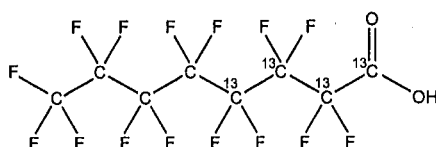
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFOA  
**COMPOUND:** Perfluoro-n-(1,2,3,4-<sup>13</sup>C<sub>4</sub>)octanoic acid

**LOT NUMBER:** MPFOA1121

**STRUCTURE:**

**CAS #:** 960315-48-4



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub><sup>12</sup>C<sub>4</sub>HF<sub>15</sub>O<sub>2</sub>  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL

**MOLECULAR WEIGHT:** 418.04

**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%

**ISOTOPIC PURITY:** ≥99% <sup>13</sup>C

**LAST TESTED:** (mm/dd/yyyy) 12/07/2021

(1,2,3,4-<sup>13</sup>C<sub>4</sub>)

**EXPIRY DATE:** (mm/dd/yyyy) 12/07/2026

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

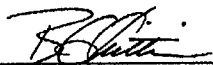
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

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:** 12/20/2021  
(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

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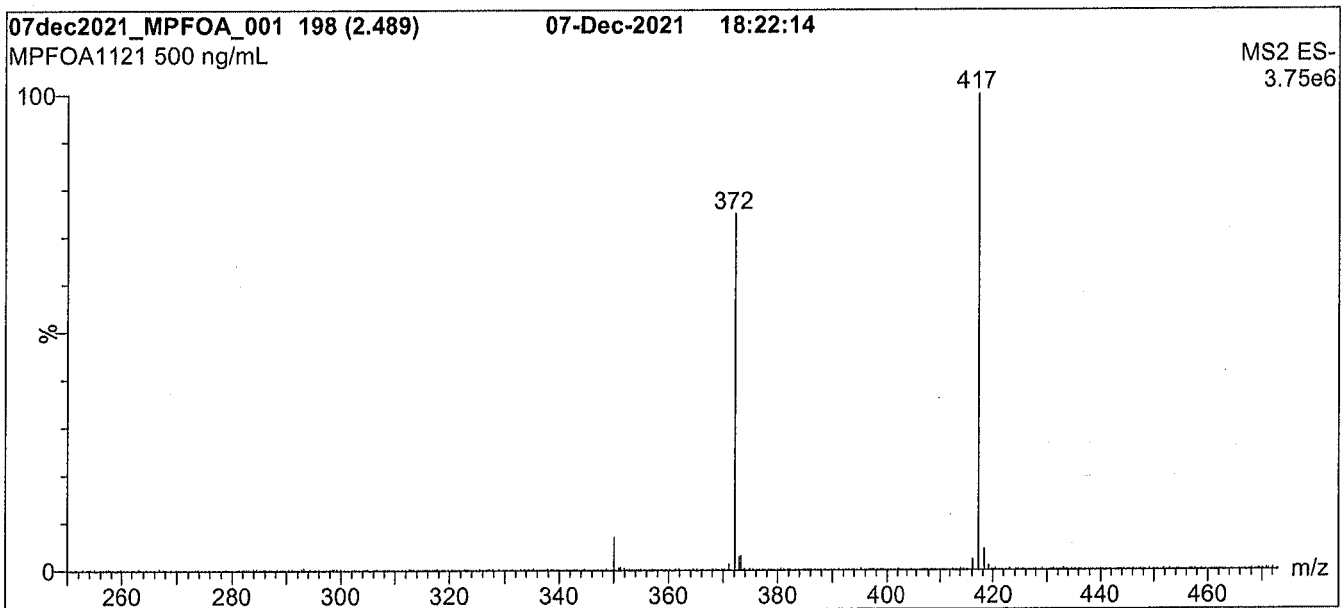
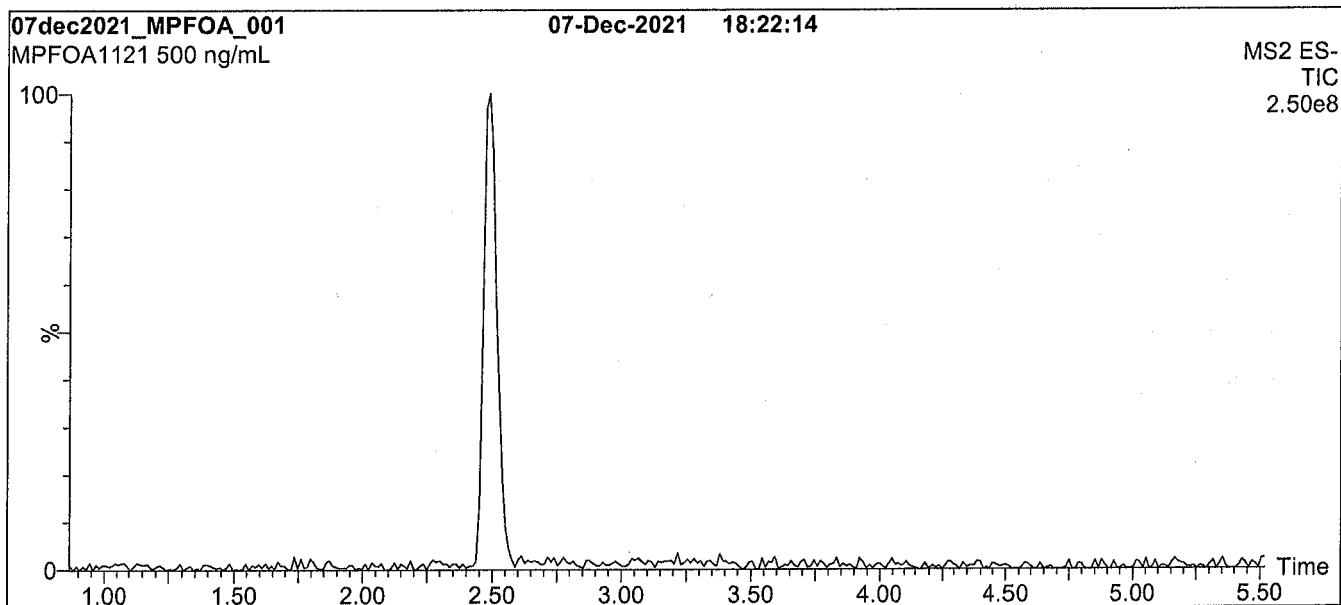
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**Figure 1: MPFOA; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

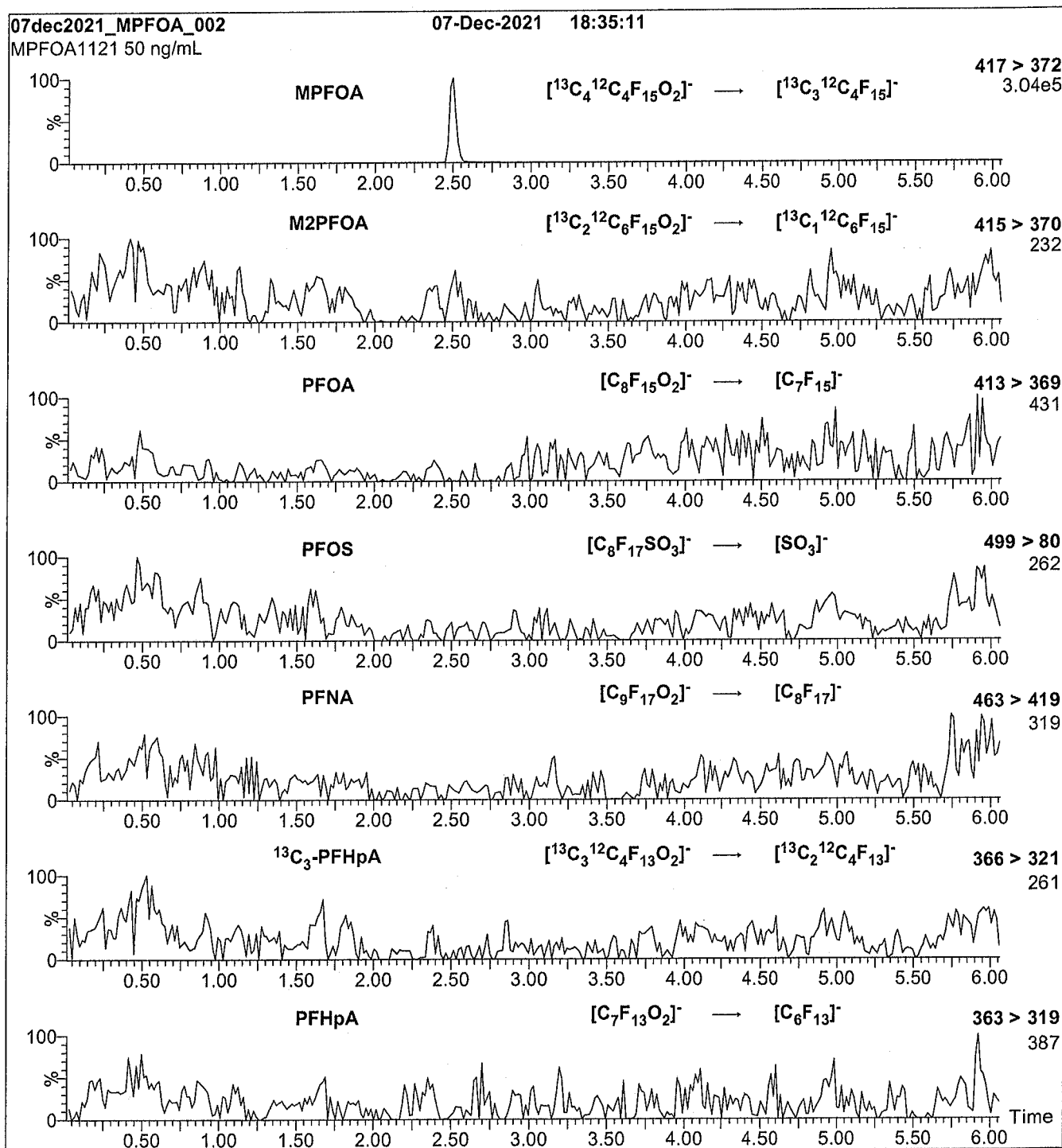
Mobile phase: Gradient  
Start: 40% H<sub>2</sub>O / 60% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for 2 min  
before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 10.00  
Desolvation Temperature (°C) = 500  
Desolvation Gas Flow (L/hr) = 1000

**Figure 2: MPFOA; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (MPFOA)

Mobile phase: Same as Figure 1

Flow: 300  $\mu\text{L}/\text{min}$ **MS Parameters:**

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 8

# Analytical Standard Record

**22A0119**

Description:	PFAS - IIS MPFOA 50ug/mL	Expires:	12/07/2026
Standard Type:	Analyte Spike	Prepared:	12/07/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

Analyte	Parent	CAS Number	Concentration	Units
13C4-PFOA		13C4-PFOA	50	ug/mL

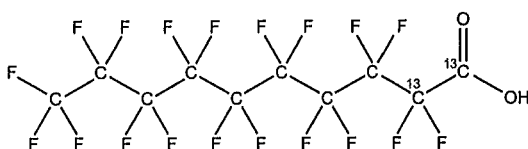


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFDA      **LOT NUMBER:** MPFDA1221  
**COMPOUND:** Perfluoro-n-(1,2-<sup>13</sup>C<sub>2</sub>)decanoic acid

**STRUCTURE:**      **CAS #:** 960315-50-8



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>8</sub>HF<sub>19</sub>O<sub>2</sub>      **MOLECULAR WEIGHT:** 516.07  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL      **SOLVENT(S):** Methanol  
 Water (<1%)  
**CHEMICAL PURITY:** >98%      **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
 (1,2-<sup>13</sup>C<sub>2</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 12/08/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 12/08/2026  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan 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:** 12/13/2021  
 (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

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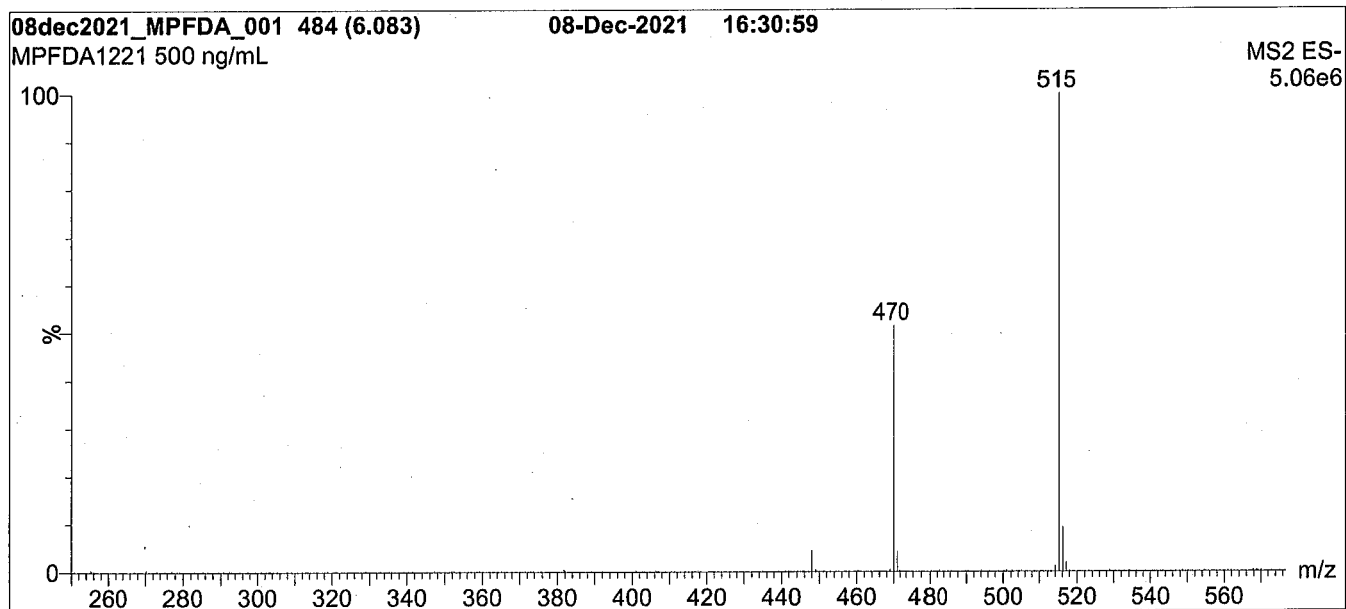
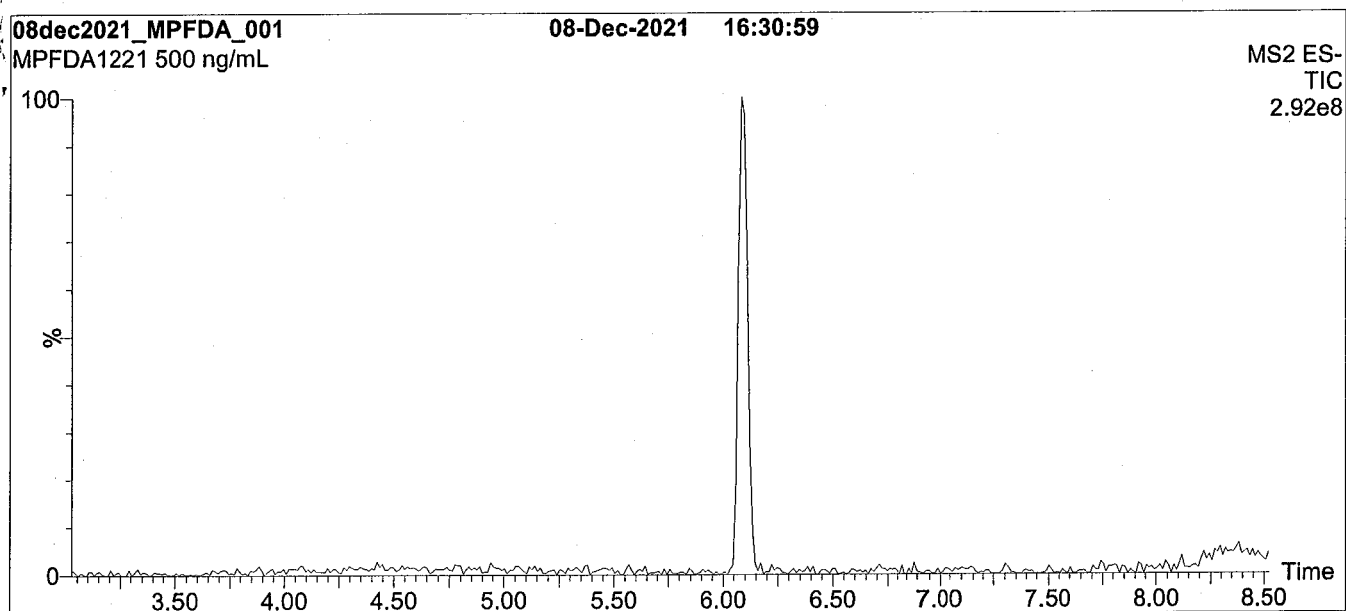
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**Figure 1: MPFDA; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

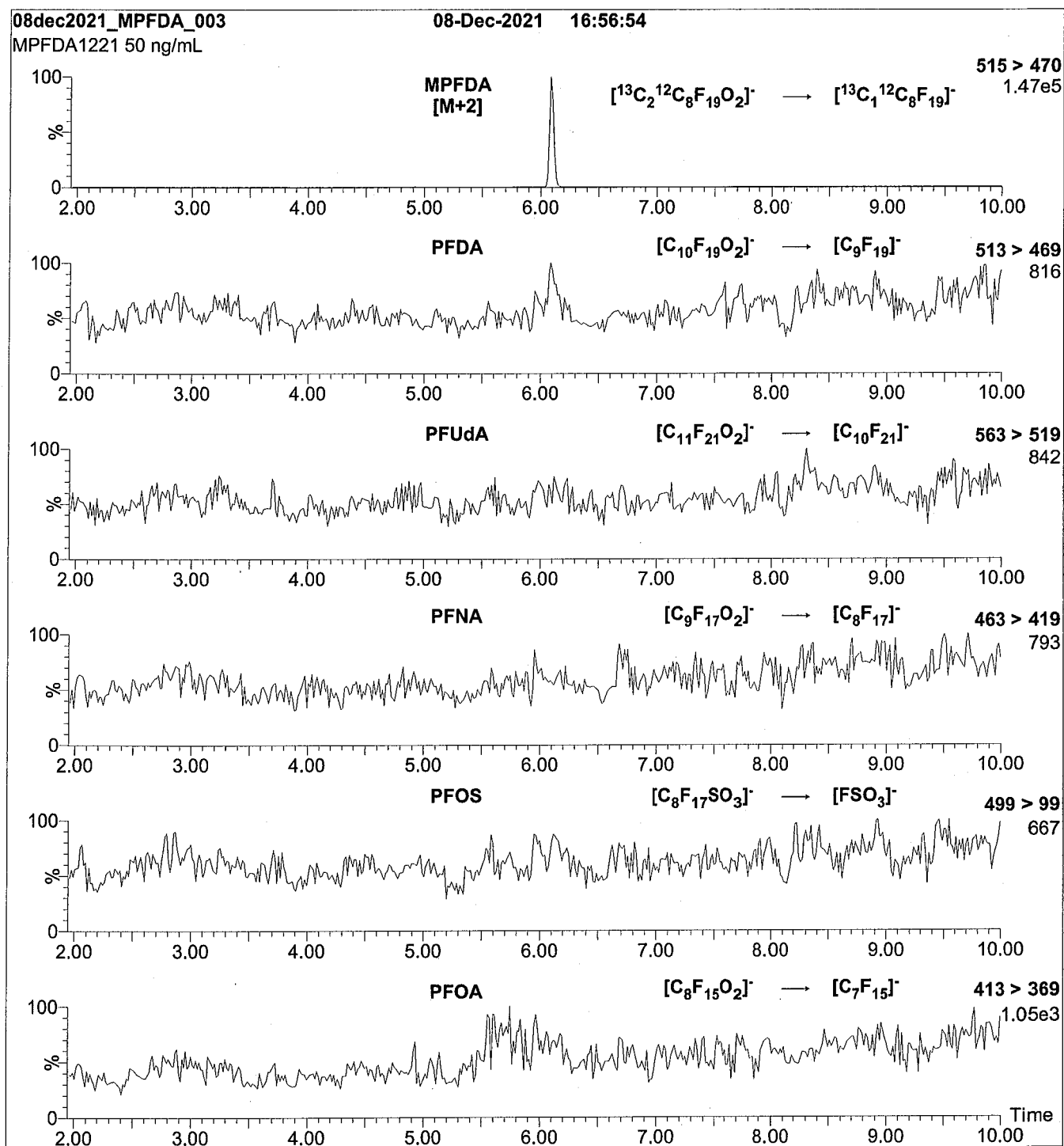
Start: 50% H<sub>2</sub>O / 50% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 9 min and hold for  
1 min before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 10.00  
Desolvation Temperature ( $^{\circ}$ C) = 500  
Desolvation Gas Flow (L/hr) = 1000

**Figure 2: MPFDA; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (MPFDA)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ L/min**MS Parameters:**

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 10

# Analytical Standard Record

**22A0120**

Description:	PFAS - IIS MPFDA 50ug/mL	Expires:	12/08/2026
Standard Type:	Analyte Spike	Prepared:	12/08/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH

Analyte	Parent	CAS Number	Concentration	Units
13C2-PFDA		13C2-PFDA	50	ug/mL

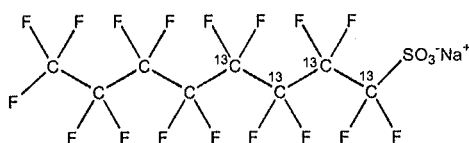


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFOS **LOT NUMBER:** MPFOS0821  
**COMPOUND:** Sodium perfluoro-1-(1,2,3,4-<sup>13</sup>C<sub>4</sub>)octanesulfonate

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



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub><sup>12</sup>C<sub>4</sub>F<sub>17</sub>SO<sub>3</sub>Na **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% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 08/18/2021 (1,2,3,4-<sup>13</sup>C<sub>4</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 08/18/2026  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

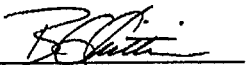
### DOCUMENTATION/ DATA ATTACHED:

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 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.4% sodium perfluoro-1-(<sup>13</sup>C<sub>3</sub>)heptanesulfonate.

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**Certified By:**   
 B.G. Chittim, General Manager **Date:** 08/19/2021  
 (mm/dd/yyyy)

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Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

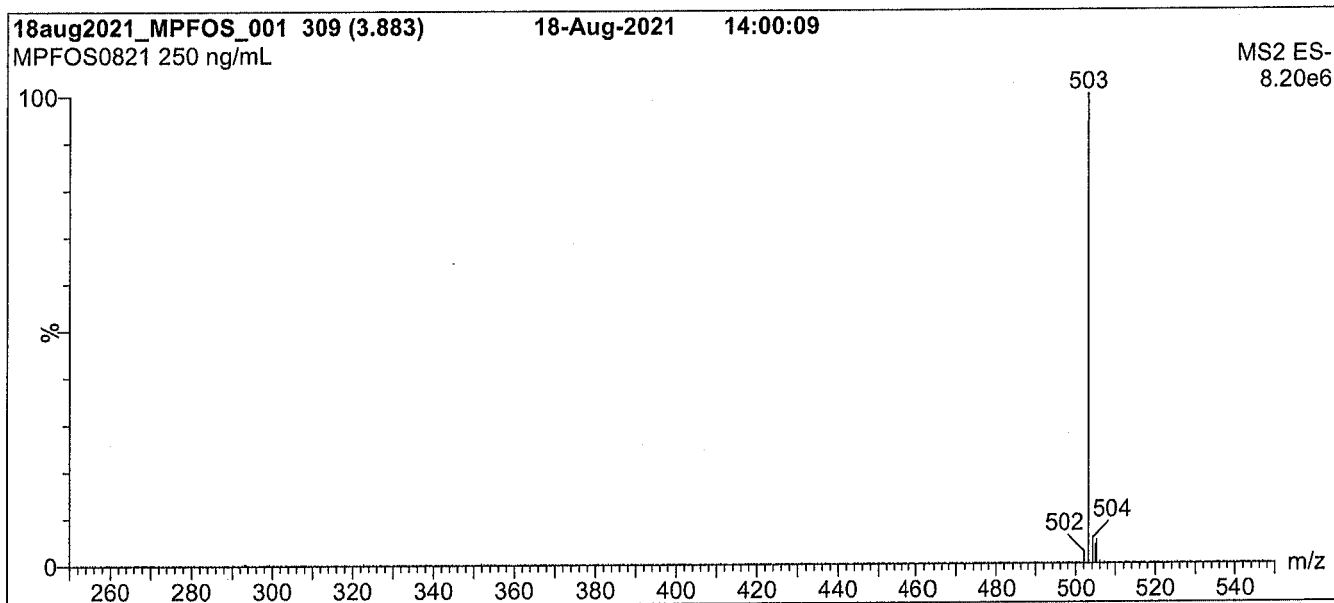
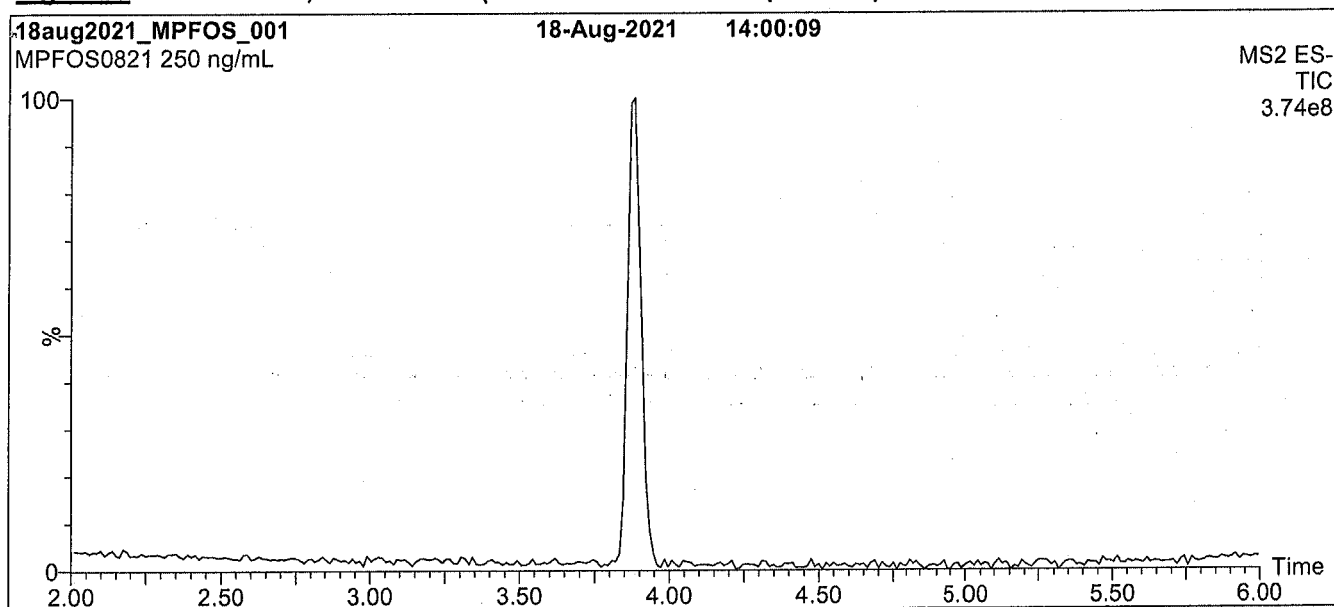
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: MPFOS; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

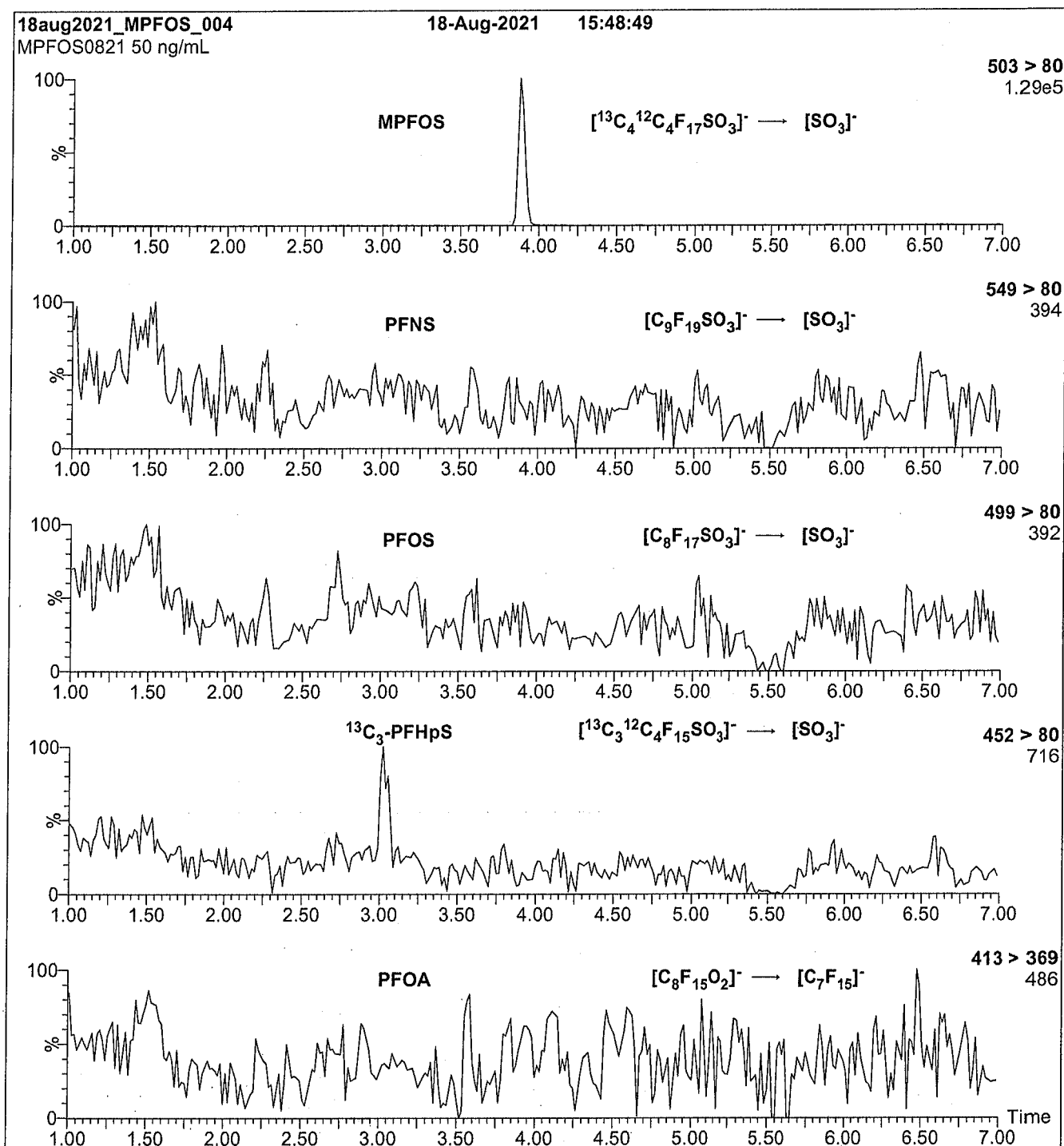
Mobile phase: Gradient  
Start: 40% H<sub>2</sub>O / 60% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for  
2 min before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 10.00  
Desolvation Temperature (°C) = 500  
Desolvation Gas Flow (L/hr) = 1000

**Figure 2: MPFOS; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (MPFOS)

Mobile phase: Same as Figure 1

Flow: 300  $\mu\text{L}/\text{min}$ **MS Parameters:**

Collision Gas (mbar) = 3.39e-3

Collision Energy (eV) = 42

# Analytical Standard Record

**22A0121**

Description:	PFAS - IIS MPFOS 50ug/mL	Expires:	08/18/2026
Standard Type:	Analyte Spike	Prepared:	08/18/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH

<b>Analyte</b>	<b>Parent</b>	<b>CAS Number</b>	<b>Concentration</b>	<b>Units</b>
13C4-PFOS		13C4-PFOS	50	ug/mL



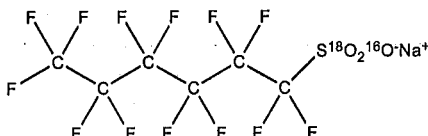


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFHxS **LOT NUMBER:** MPFHxS1021  
**COMPOUND:** Sodium perfluoro-1-hexane(<sup>18</sup>O<sub>2</sub>)sulfonate

**STRUCTURE:** **CAS #:** 1585941-14-5



**MOLECULAR FORMULA:** C<sub>6</sub>F<sub>13</sub>S<sup>18</sup>O<sub>2</sub><sup>16</sup>ONa **MOLECULAR WEIGHT:** 426.10  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol  
 47.4 ± 2.4 µg/mL (MPFHxS acid)  
 47.3 ± 2.4 µg/mL (MPFHxS anion)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** >94% (<sup>18</sup>O<sub>2</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 10/29/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 10/29/2026  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:


Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- The response factor for MPFHxS (C<sub>6</sub>F<sub>13</sub>S<sup>18</sup>O<sub>2</sub><sup>16</sup>O) has been observed to be up to 10% lower than for PFHxS (C<sub>6</sub>F<sub>13</sub>S<sup>16</sup>O<sub>3</sub>) when both compounds are injected together. This difference may vary between instruments.
- Contains ~0.6% of sodium perfluoro-1-octane(<sup>18</sup>O<sub>2</sub>)sulfonate (<sup>18</sup>O<sub>2</sub>-PFOS) and ~0.3% of sodium perfluoro-1-heptane(<sup>18</sup>O<sub>2</sub>)sulfonate (<sup>18</sup>O<sub>2</sub>-PFHpS).
- Due to the isotopic purity of the starting material (<sup>18</sup>O<sub>2</sub> >94%), MPFHxS contains ~0.3% of PFHxS. This value agrees with the theoretical percent relative abundance that is expected based on the stated isotopic purity.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
 B.G. Chittim, General Manager **Date:** 11/05/2021  
 (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

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

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**LIMITED WARRANTY:**

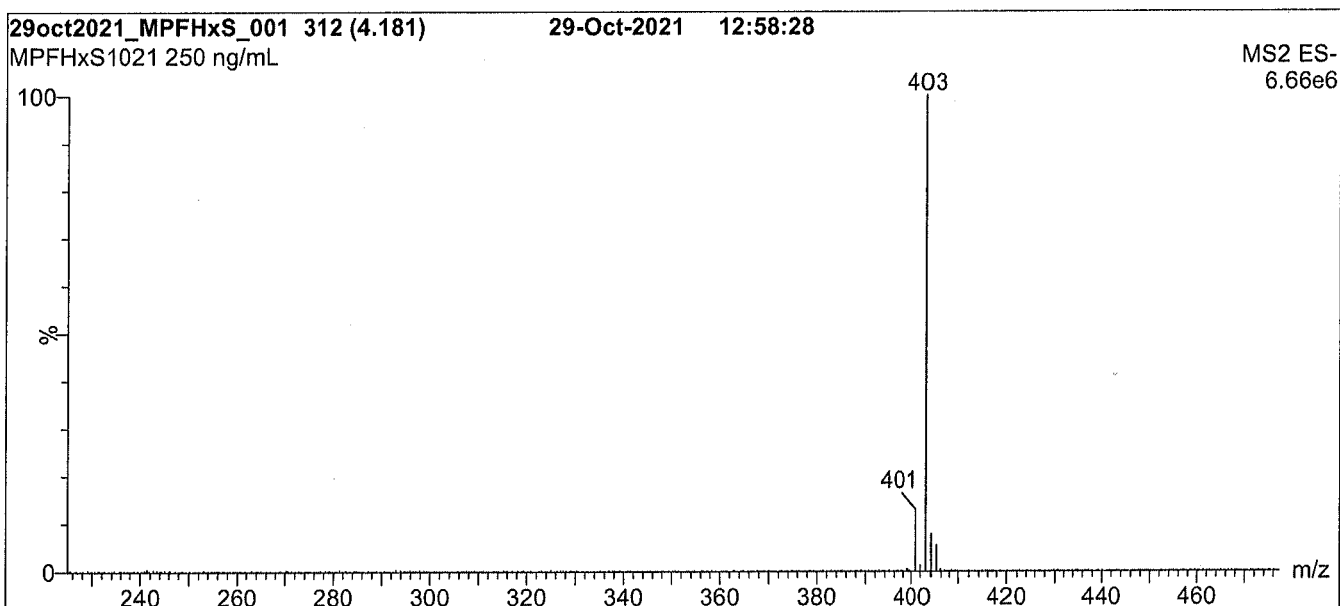
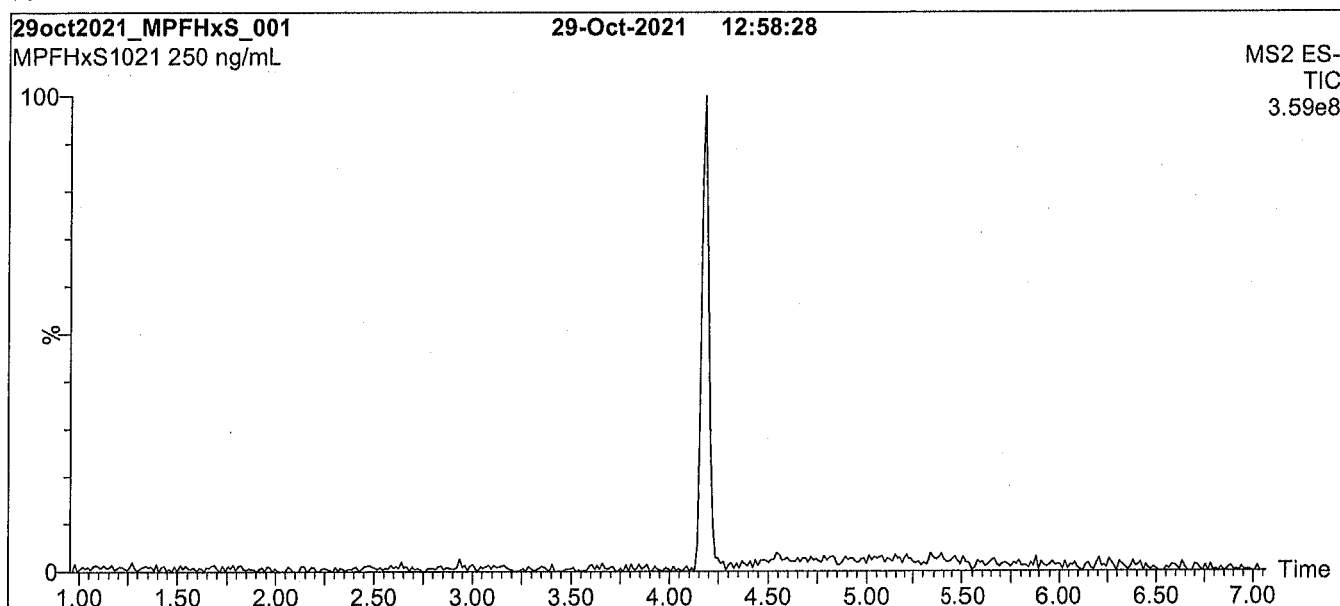
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**Figure 1: MPFHxS; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

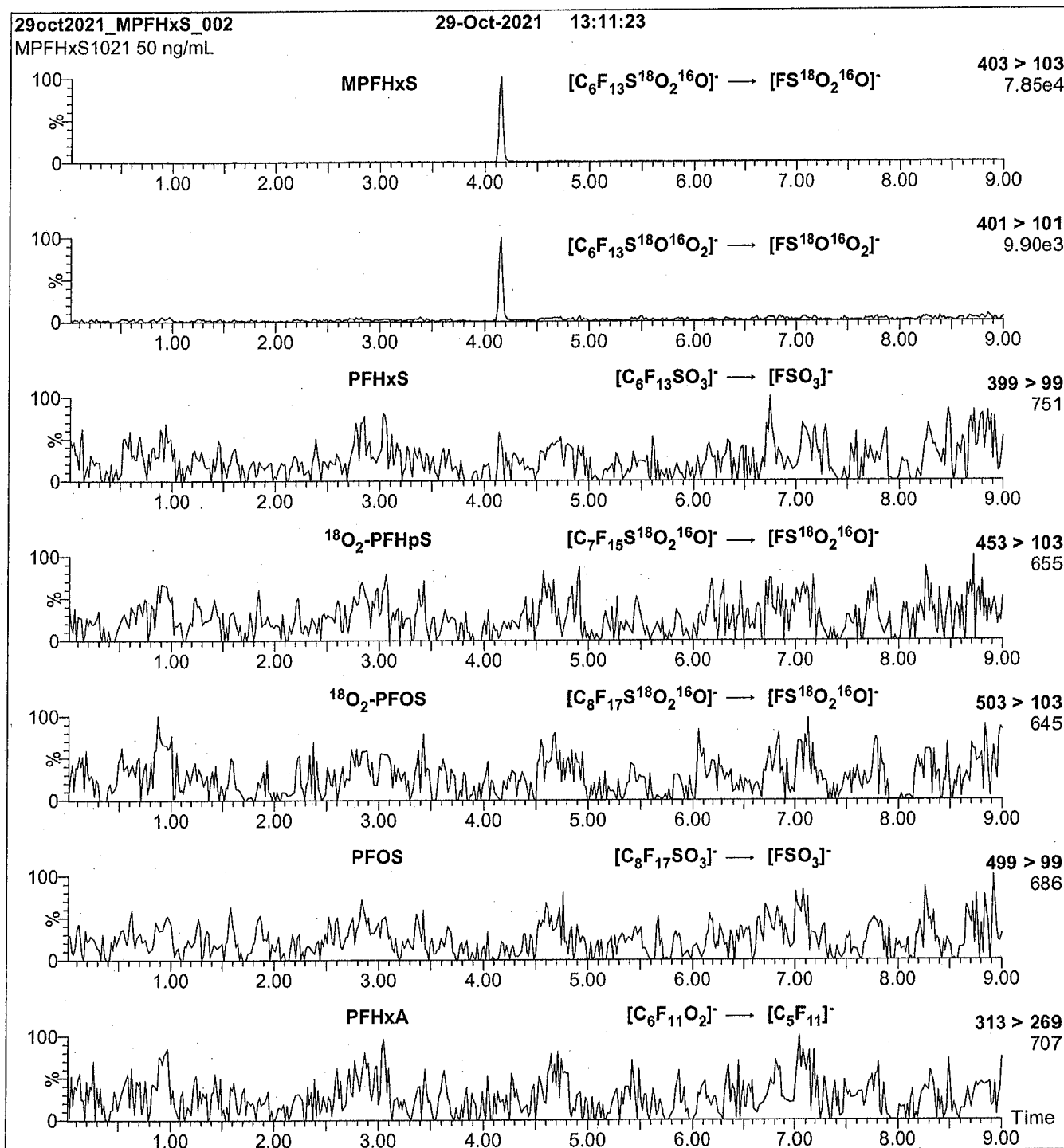
Start: 50% H<sub>2</sub>O / 50% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 9 min and hold for  
1 min before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 10.00  
Desolvation Temperature (°C) = 500  
Desolvation Gas Flow (L/hr) = 1000

**Figure 2: MPFHxS; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (MPFHxS)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ L/min**MS Parameters:**

Collision Gas (mbar) = 3.16e-3

Collision Energy (eV) = 32

# Analytical Standard Record

**22A0122**

Description:	PFAS - IIS MPFHxS 50ug/mL	Expires:	10/29/2026
Standard Type:	Analyte Spike	Prepared:	10/29/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH

<b>Analyte</b>	<b>Parent</b>	<b>CAS Number</b>	<b>Concentration</b>	<b>Units</b>
1802-PFHXS		1802-PFHXS	50	ug/mL

# Analytical Standard Record

**22A0122**

Description:	PFAS - IIS MPFHxS 50ug/mL	Expires:	10/29/2026
Standard Type:	Analyte Spike	Prepared:	10/29/2021
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH

Analyte	Parent	CAS Number	Concentration	Units
1802-PFHXS		1802-PFHXS	50	ug/mL

# Calbiochem®



## Certificate of Analysis

### Taurodeoxycholic Acid, Sodium Salt - CAS 1180-95-6 - Calbiochem

**Batch Number:** 3761825  
**Material Number:** 580221-5GM  
**Molecular Formula:** C<sub>26</sub>H<sub>44</sub>NO<sub>6</sub>S · Na  
**Molecular Weight:** 521.7  
**CAS Number:** 1180-95-6

**Quality Release Date:** 05 OCT 2021  
**Recommended Retest Date:** 30 SEP 2023

### Analytical Data

Test	Tolerance	Result
<b>Solubility:</b>		H <sub>2</sub> O (100 mg/ml)
<b>Chloride:</b>		<0.01%
<b>Loss on drying:</b>	≤5.0 %	0.1%
<b>Color:</b>		White
<b>Form:</b>		Powder
<b>TLC:</b>	≥95.0 %	≥95.00%
<b>IR:</b>		Conforms to reference
<b>Optical rotation:</b>	35.0 ° - 39.0 °	+36.38°
<b>Water by Karl Fischer:</b>	≤5.0 %	2.86%
<b>Carbon:</b>	≥0.00 %	57.78%
<b>Hydrogen:</b>	≥0.00 %	8.32 %
<b>Nitrogen:</b>	≥0.00 %	2.77 %

**Storage and Handling:** +15°C to +30°C

This lot conforms to specifications established by EMD Millipore Corporation for this product.

Issued by **Jamie Thomas**

This document has been electronically produced and is valid without a signature

Quality Control/ Assurance Signature

05 OCT 2021

Date

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**EMD Millipore Corporation | 28820 Single Oak Dr., Temecula, CA 92590**

**Technical Support NA +1-800-221-1975 | email: [www.millipore.com/techservices](http://www.millipore.com/techservices) | [www.calbiochem.com](http://www.calbiochem.com)**

**Technical Support All Other Countries - Contact Your Local Office**

**FOR RESEARCH USE ONLY.**

Not for use in diagnostic procedures. Not for human or animal consumption. Purchase of this product does not include any right to resell or transfer, either as a stand-alone product or as a component of another product. Any use of this Product for purpose other than research is strictly prohibited.

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Darmstadt, Germany

580221-5GM/09-MAY-2018/EA



# Analytical Standard Record

**22A0123**

Description:	PFAS Taurodeoxycholic Acid, Sodium Salt	Expires:	09/30/2023
Standard Type:	Other	Prepared:	10/05/2021
Solvent:	n/a	Prepared By:	Dipti Gokal
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:54 by DAG

<b>Analyte</b>	<b>Parent</b>	<b>CAS Number</b>	<b>Concentration</b>	<b>Units</b>
TAURODEOXYCHOLIC ACID		516-50-7	1	ug/mL

# Analytical Standard Record

**22A0123**

Description:	PFAS Taurodeoxycholic Acid, Sodium Salt	Expires:	09/30/2023
Standard Type:	Other	Prepared:	10/05/2021
Solvent:	n/a	Prepared By:	Dipti Gokal
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:54 by DAG

<b>Analyte</b>	<b>Parent</b>	<b>CAS Number</b>	<b>Concentration</b>	<b>Units</b>
TAURODEOXYCHOLIC ACID		516-50-7	1	ug/mL

# Analytical Standard Record

**22A0234**

Description:	PFAS IIS 7C 5ug/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	01/20/2022
Solvent:	MeOH/61252	Prepared By:	Dipti Gokal
Final Volume (mL):	12	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH
Comments:	mpfna had more left over than others.		

Analyte	Parent	CAS Number	Concentration	Units
13C3-PFBA	22A0116	13C3-PFBA	5	ug/mL
13C2-PFHxA	22A0117	13C2-PFHxA	5	ug/mL
13C5-PFNA	22A0118	13C5-PFNA	5	ug/mL
13C4-PFOA	22A0119	13C4-PFOA	5	ug/mL
13C2-PFDA	22A0120	13C2-PFDA	5	ug/mL
13C4-PFOS	22A0121	13C4-PFOS	5	ug/mL
18O2-PFHxS	22A0122	18O2-PFHxS	5	ug/mL

**Parent Standards used:**

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mL)
22A0116	PFAS - IIS M3PFBA 50ug/mL	08/19/2021	Wellington Laboratories	M3PFBA0721	08/19/2026	01/20/2022 15:48	by HGH 1.2
22A0117	PFAS - IIS MPFHxA 50ug/mL	10/04/2021	Wellington Laboratories	MPFHxA0921	10/04/2026	01/20/2022 15:48	by HGH 1.2
22A0118	PFAS - IIS MPFNA 50ug/mL	10/29/2021	Wellington Laboratories	MPFNA1021	10/29/2026	01/20/2022 15:48	by HGH 1.2
22A0119	PFAS - IIS MPFOA 50ug/mL	12/07/2021	Wellington Laboratories	MPFOA1121	12/07/2026	01/20/2022 15:48	by HGH 1.2
22A0120	PFAS - IIS MPFDA 50ug/mL	12/08/2021	Wellington Laboratories	MPFDA1221	12/08/2026	01/20/2022 15:49	by HGH 1.2
22A0121	PFAS - IIS MPFOS 50ug/mL	08/18/2021	Wellington Laboratories	MPFOS0821	08/18/2026	01/20/2022 15:49	by HGH 1.2
22A0122	PFAS - IIS MPFHxS 50ug/mL	10/29/2021	Wellington Laboratories	MPFHxS1021	10/29/2026	01/20/2022 15:49	by HGH 1.2

# Analytical Standard Record

**22A0234**

Description:	PFAS IIS 7C 5ug/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	01/20/2022
Solvent:	MeOH/61252	Prepared By:	Dipti Gokal
Final Volume (mL):	12	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH
Comments:	mpfna had more left over than others.		

Analyte	Parent	CAS Number	Concentration	Units
13C3-PFBA	22A0116	13C3-PFBA	5	ug/mL
13C2-PFHxA	22A0117	13C2-PFHxA	5	ug/mL
13C5-PFNA	22A0118	13C5-PFNA	5	ug/mL
13C4-PFOA	22A0119	13C4-PFOA	5	ug/mL
13C2-PFDA	22A0120	13C2-PFDA	5	ug/mL
13C4-PFOS	22A0121	13C4-PFOS	5	ug/mL
18O2-PFHXS	22A0122	18O2-PFHXS	5	ug/mL

**Parent Standards used:**

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mL)
22A0116	PFAS - IIS M3PFBA 50ug/mL	08/19/2021	Wellington Laboratories	M3PFBA0721	08/19/2026	01/20/2022 15:48 by HGH	1.2
22A0117	PFAS - IIS MPFHxA 50ug/mL	10/04/2021	Wellington Laboratories	MPFHxA0921	10/04/2026	01/20/2022 15:48 by HGH	1.2
22A0118	PFAS - IIS MPFNA 50ug/mL	10/29/2021	Wellington Laboratories	MPFNA1021	10/29/2026	01/20/2022 15:48 by HGH	1.2
22A0119	PFAS - IIS MPFOA 50ug/mL	12/07/2021	Wellington Laboratories	MPFOA1121	12/07/2026	01/20/2022 15:48 by HGH	1.2
22A0120	PFAS - IIS MPFDA 50ug/mL	12/08/2021	Wellington Laboratories	MPFDA1221	12/08/2026	01/20/2022 15:49 by HGH	1.2
22A0121	PFAS - IIS MPFOS 50ug/mL	08/18/2021	Wellington Laboratories	MPFOS0821	08/18/2026	01/20/2022 15:49 by HGH	1.2
22A0122	PFAS - IIS MPFHxS 50ug/mL	10/29/2021	Wellington Laboratories	MPFHxS1021	10/29/2026	01/20/2022 15:49 by HGH	1.2

# Analytical Standard Record

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Description:	PFAS IIS 7C 5ug/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	01/20/2022
Solvent:	MeOH/61252	Prepared By:	Dipti Gokal
Final Volume (mL):	12	Department:	PFAS
Vials:	1	Last Edit:	01/20/2022 15:49 by HGH
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13C4-PFOA	22A0119	13C4-PFOA	5	ug/mL
13C2-PFDA	22A0120	13C2-PFDA	5	ug/mL
13C4-PFOS	22A0121	13C4-PFOS	5	ug/mL
18O2-PFHXS	22A0122	18O2-PFHXS	5	ug/mL

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22A0117	PFAS - IIS MPFHxA 50ug/mL	10/04/2021	Wellington Laboratories	MPFHxA0921	10/04/2026	01/20/2022 15:48 by HGH	1.2
22A0118	PFAS - IIS MPFNA 50ug/mL	10/29/2021	Wellington Laboratories	MPFNA1021	10/29/2026	01/20/2022 15:48 by HGH	1.2
22A0119	PFAS - IIS MPFOA 50ug/mL	12/07/2021	Wellington Laboratories	MPFOA1121	12/07/2026	01/20/2022 15:48 by HGH	1.2
22A0120	PFAS - IIS MPFDA 50ug/mL	12/08/2021	Wellington Laboratories	MPFDA1221	12/08/2026	01/20/2022 15:49 by HGH	1.2
22A0121	PFAS - IIS MPFOS 50ug/mL	08/18/2021	Wellington Laboratories	MPFOS0821	08/18/2026	01/20/2022 15:49 by HGH	1.2
22A0122	PFAS - IIS MPFHxS 50ug/mL	10/29/2021	Wellington Laboratories	MPFHxS1021	10/29/2026	01/20/2022 15:49 by HGH	1.2

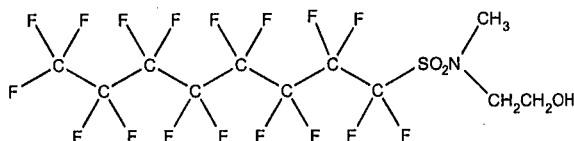


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-MeFOSE-M **LOT NUMBER:** NMeFOSE0921M  
**COMPOUND:** 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol **22C0307**

**STRUCTURE:** **CAS #:** 24448-09-7



**MOLECULAR FORMULA:** C<sub>11</sub>H<sub>8</sub>F<sub>17</sub>NO<sub>3</sub>S **MOLECULAR WEIGHT:** 557.22  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 09/22/2021 (HRGC/LRMS)  
 09/23/2021 (LC/MS)  
**EXPIRY DATE:** (mm/dd/yyyy) 09/23/2026  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)  
 Figure 2: LC/MS Data (Full Scan and Mass Spectrum)  
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:   
 B.G. Chittim, General Manager

Date: 09/28/2021  
 (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

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

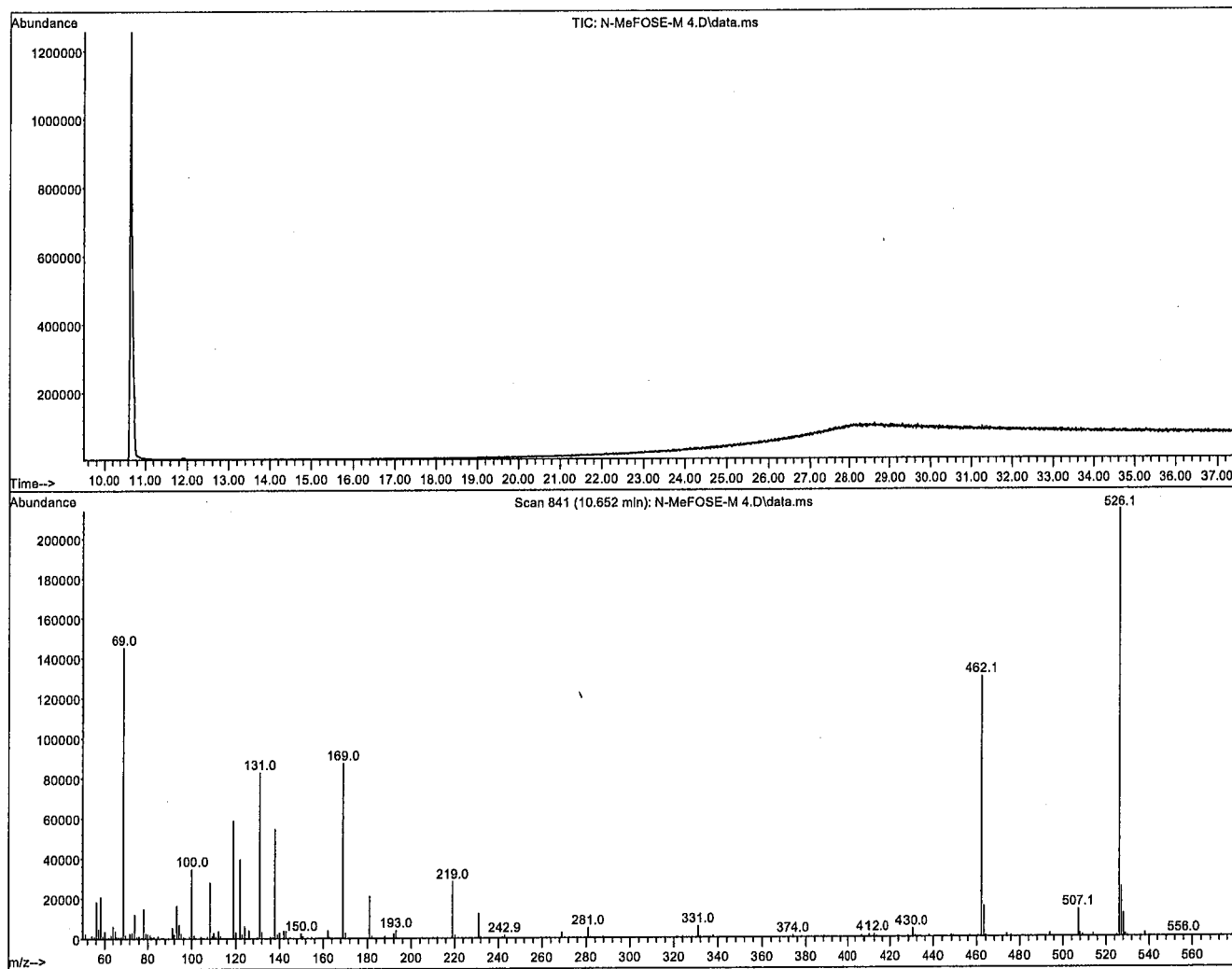
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: N-MeFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

Agilent 7890A HRGC  
 Agilent 5975C MSD

**Chromatographic Conditions:**

Column: 30 m DB-5 (0.25 mm id, 0.25  $\mu$ m film thickness) Agilent J&W

Flow: Constant at 1 mL/min

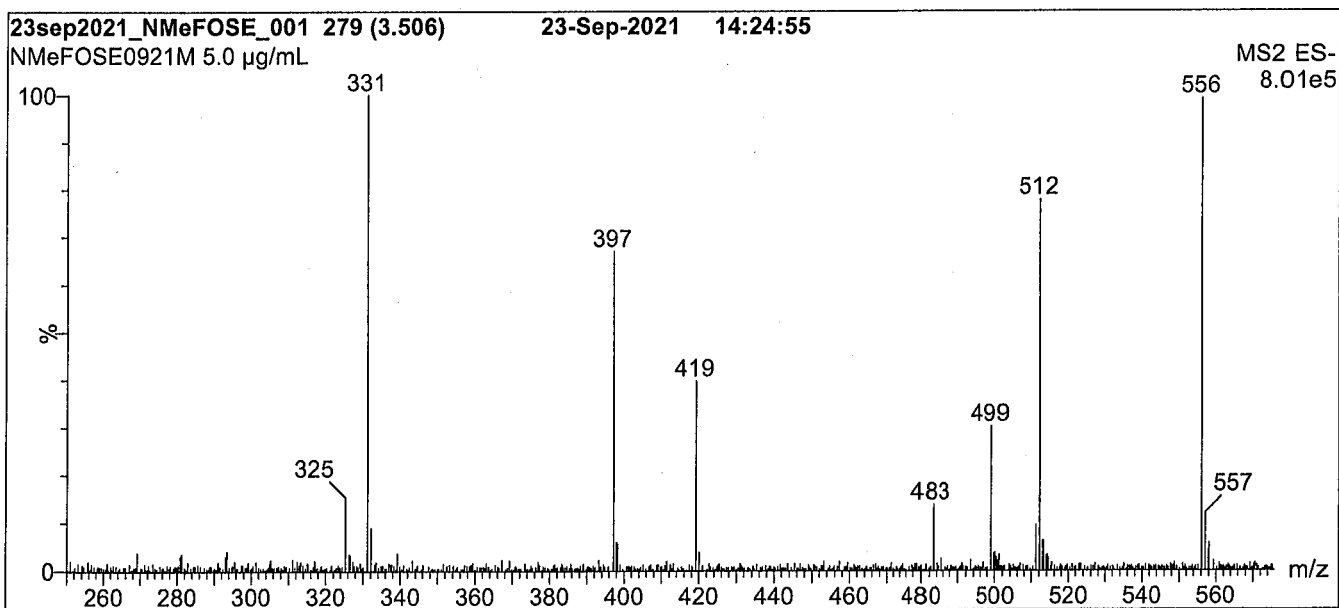
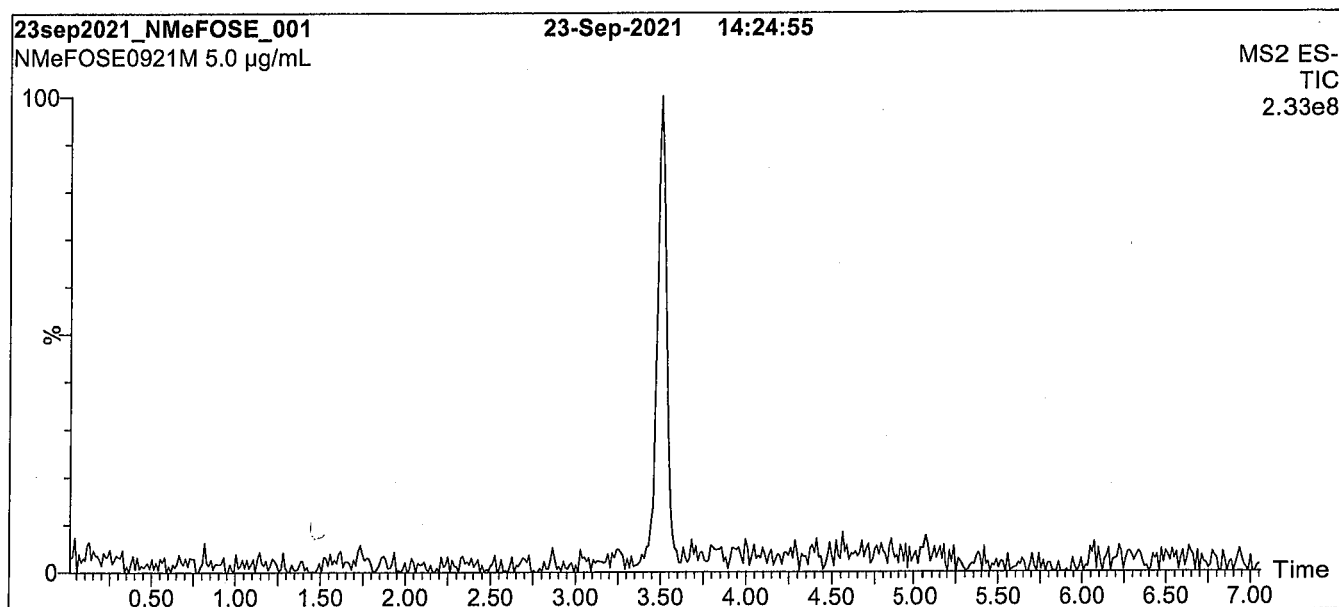
Injector: 250°C (Splitless Injection)

Oven: 100°C (5 min)  
 10°C/min to 310°C  
 310°C (10 min)

Ionization: EI+

Detector: 230°C  
 Full Scan (50-1000 amu)



**Figure 2: N-MeFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 2:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H<sub>2</sub>O / 70% MeOH

Ramp to 90% organic over 8 min and hold for  
1.5 min before returning to initial conditions in 1 min.

Time: 12 min

Flow: 300 µL/min

**MS Parameters:**

Experiment: Full Scan (250 - 850 amu)

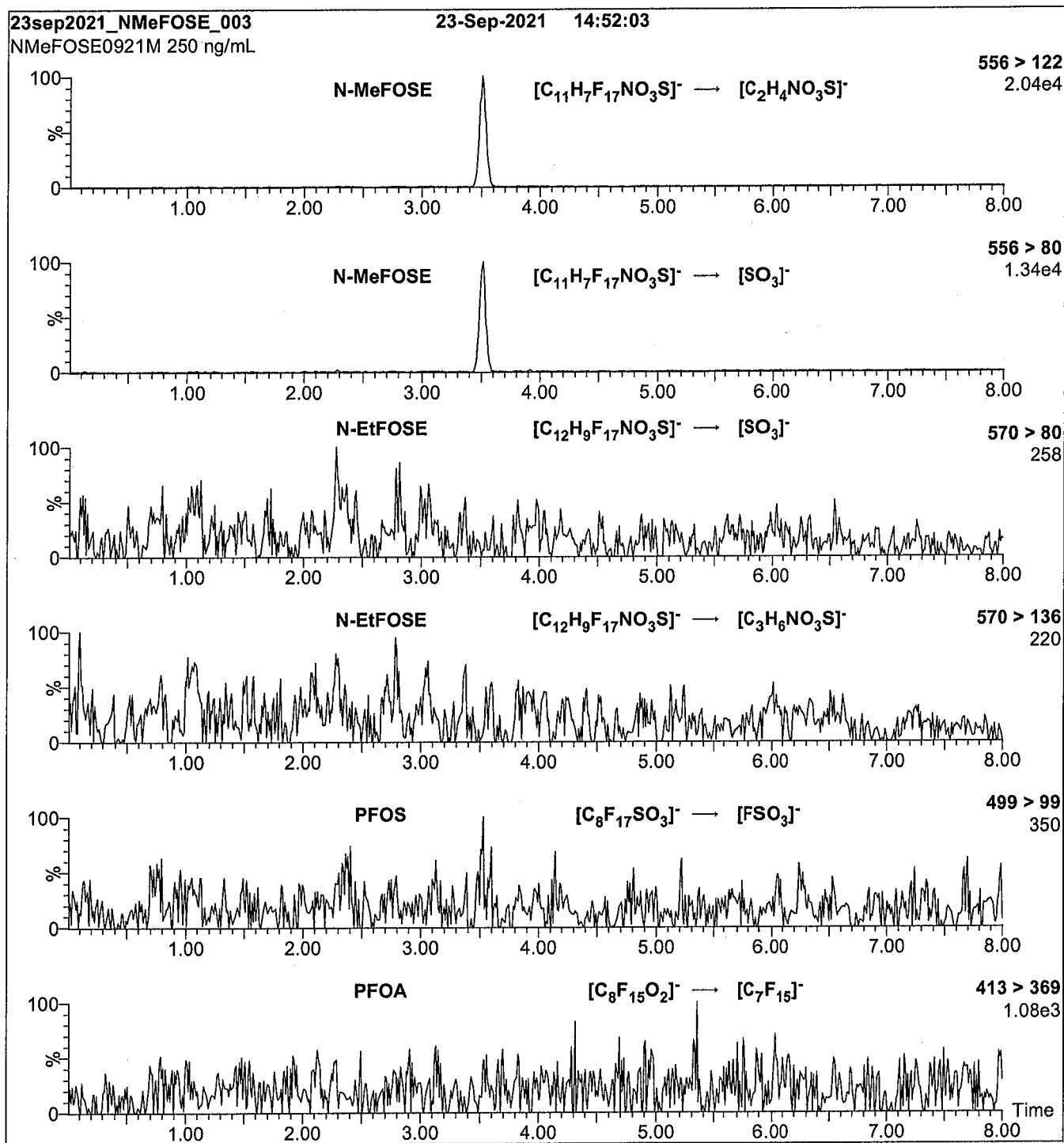
Source: Electrospray (negative)

Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 65.00

Desolvation Temperature (°C) = 450

Desolvation Gas Flow (L/hr) = 1000

**Figure 3: N-MeFOSE-M; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 3:**

Injection: On-column (N-MeFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300  $\mu$ L/min**MS Parameters:**

Collision Gas (mbar) = 3.14e-3

Collision Energy (eV) = 36

0

1

# Analytical Standard Record

**22C0307**

Description:	PFAS - SAS N-MeFOSE 50ug/mL	Expires:	09/23/2026
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: NMeFOSE0921M)
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

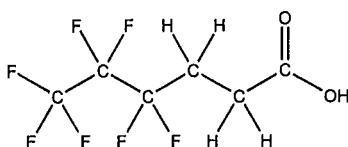
Analyte	Parent	CAS Number	Concentration	Units
NMeFOSE		24448-09-7	50	ug/mL



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** FPrPA      **LOT NUMBER:** FPrPA0122  
**COMPOUND:** 3-Perfluoropropyl propanoic acid      **22C0308**  
**STRUCTURE:**      **CAS #:** 356-02-5



**MOLECULAR FORMULA:**  $C_6H_5F_7O_2$       **MOLECULAR WEIGHT:** 242.09  
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/mL}$       **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 02/03/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 02/03/2027  
**RECOMMENDED STORAGE:** Refrigerate ampoule

### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan 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  $^{19}\text{F}$  NMR.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**       **Date:** 02/04/2022  
 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

**INTENDED USE:**

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**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

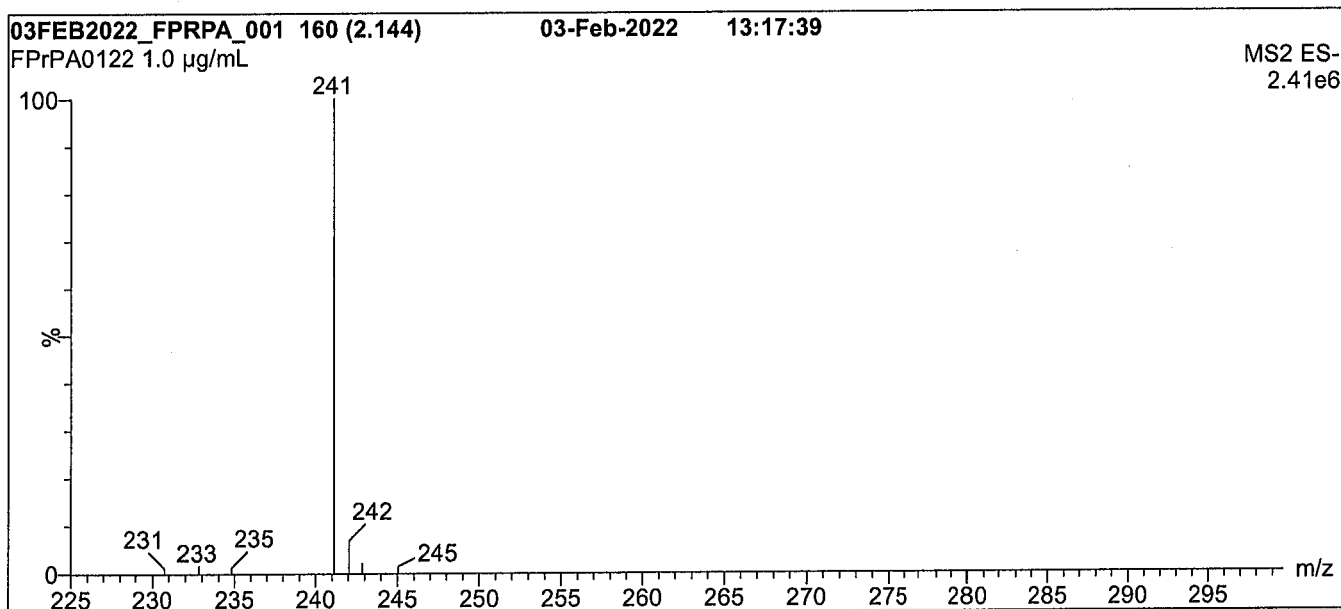
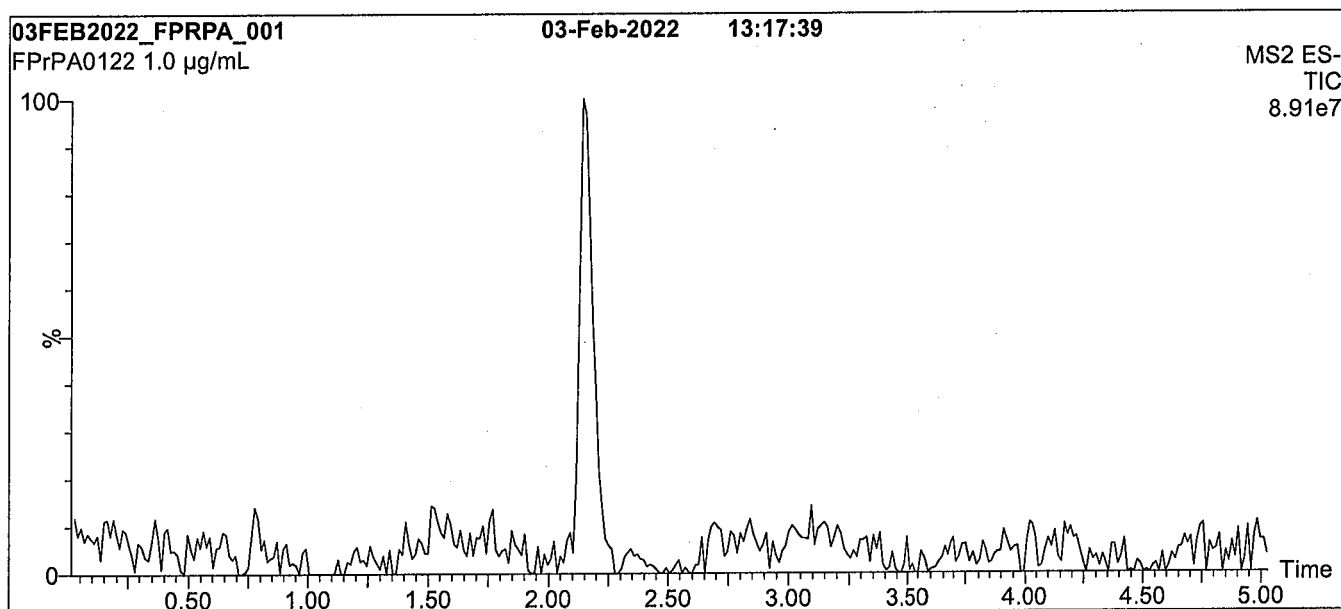
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

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\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: FPrPA; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H<sub>2</sub>O / 40% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for 2 min  
before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300 µL/min

**MS Parameters:**

Experiment: Full Scan (225 - 850 amu)

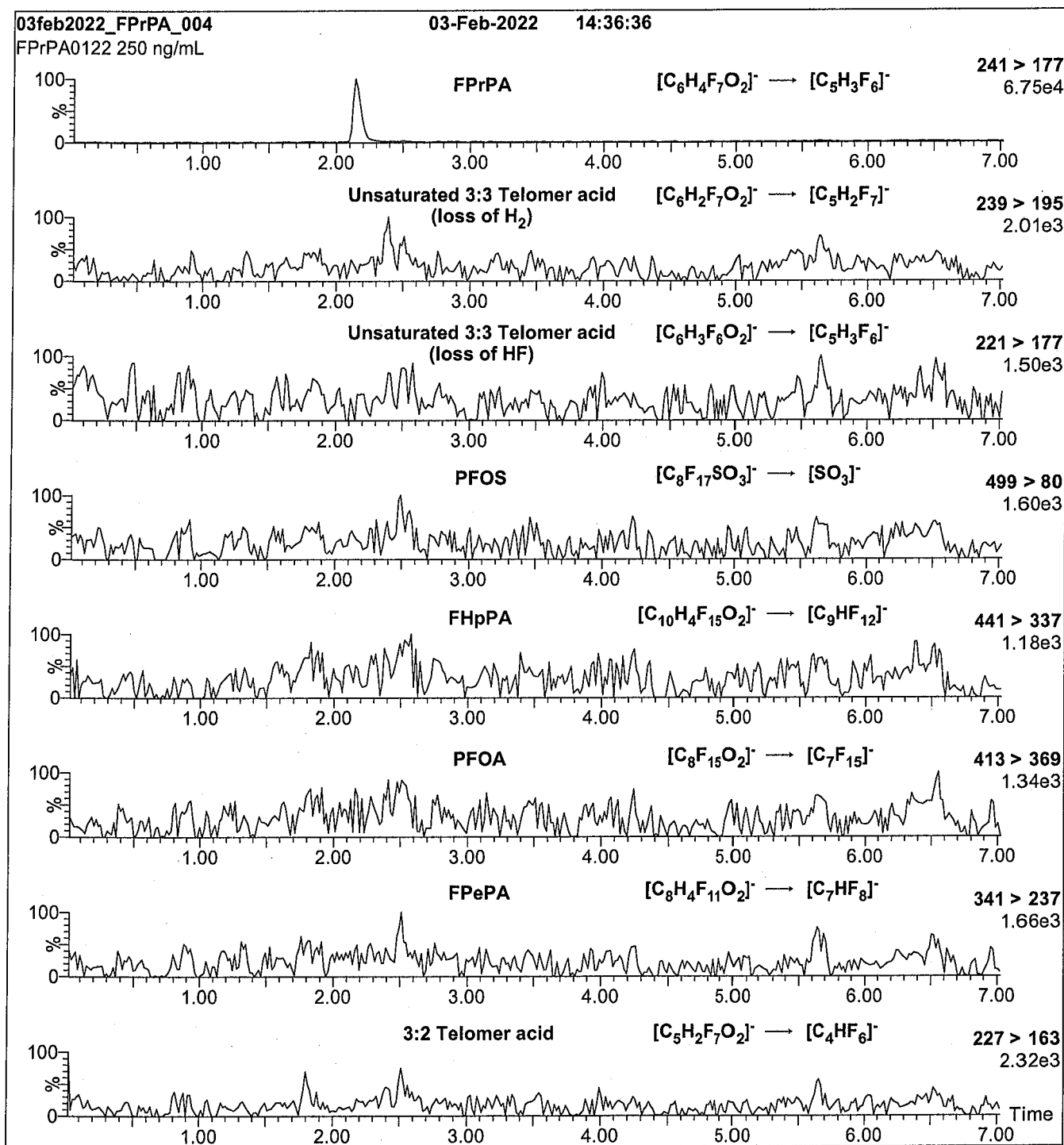
Source: Electrospray (negative)

Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

Desolvation Temperature (°C) = 500

Desolvation Gas Flow (L/hr) = 1000

**Figure 2:** FPrPA; LC/MS/MS Data (Selected MRM Transitions)**Conditions for Figure 2:**

Injection: On-column (FPrPA)

**MS Parameters:**

Mobile phase: Same as Figure 1

Collision Gas (mbar) = 3.33e-3

Flow: 300  $\mu$ L/min

Collision Energy (eV) = 10



# Analytical Standard Record

**22C0308**

Description:	PFAS - SAS FPrPA 50ug/mL	Expires:	02/03/2027
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: FPrPA0122)
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

Analyte	Parent	CAS Number	Concentration	Units
3:3FTCA		113507-82-7	50	ug/mL

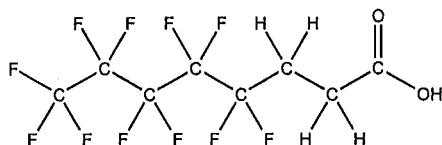


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** FPePA **LOT NUMBER:** FPePA1221  
**COMPOUND:** 3-Perfluoropentyl propanoic acid **22C0309**

**STRUCTURE:** **CAS #:** 914637-49-3



**MOLECULAR FORMULA:**  $C_8H_5F_{11}O_2$  **MOLECULAR WEIGHT:** 342.11  
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/mL}$  **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/05/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 01/05/2027  
**RECOMMENDED STORAGE:** Refrigerate ampoule

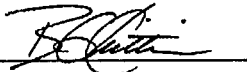
### DOCUMENTATION/ DATA ATTACHED:

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

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <0.5% of the unsaturated 5:3 telomer acid ( $C_8H_3F_{11}O_2$ ) as an impurity determined by  $^1\text{H}$  NMR.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:   
 B.G. Chittim, General Manager

Date: 01/06/2022  
 (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

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where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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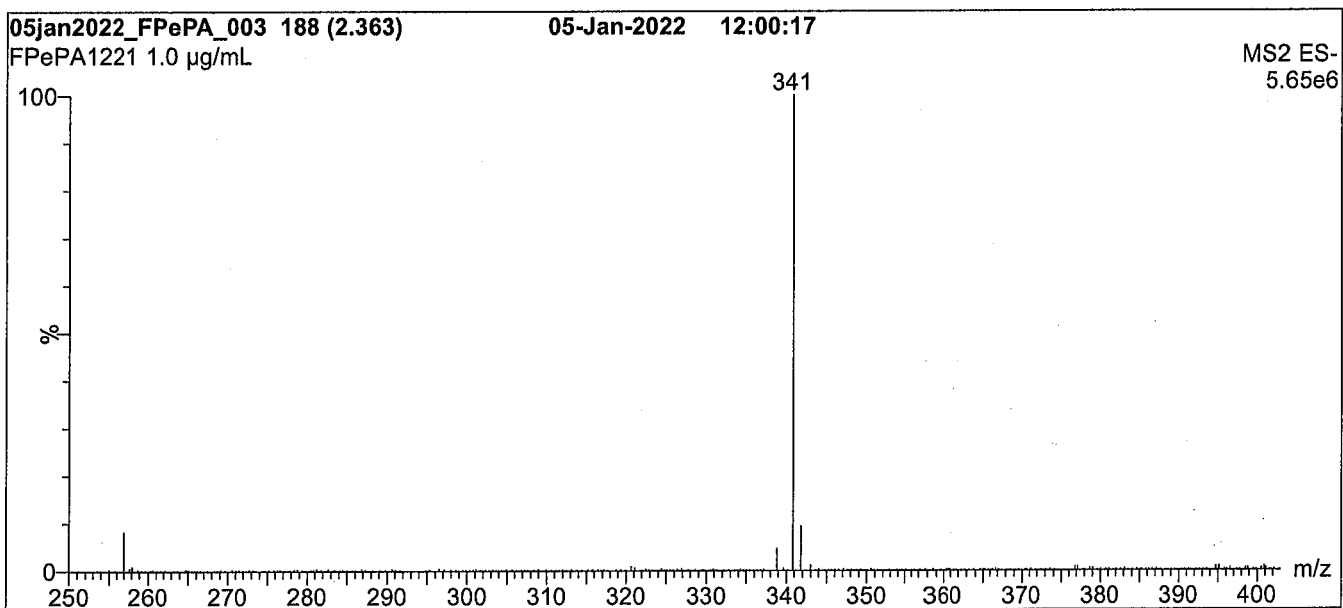
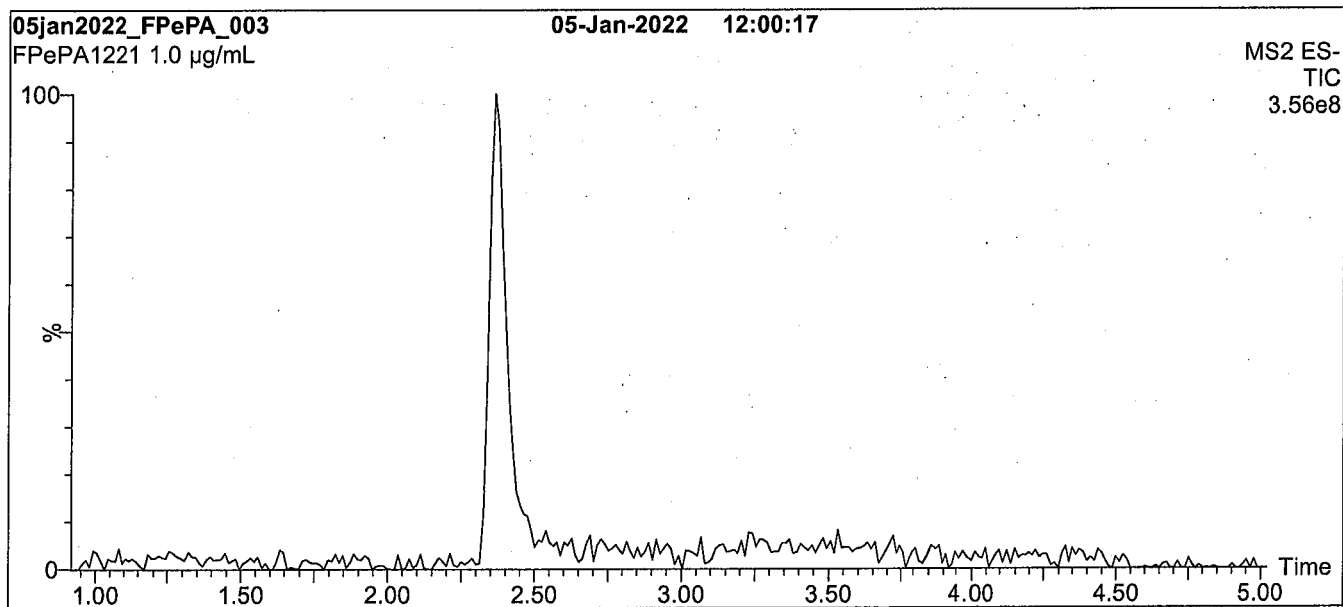
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**Figure 1: FPePA; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
 Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7 µm, 2.1 x 100 mm

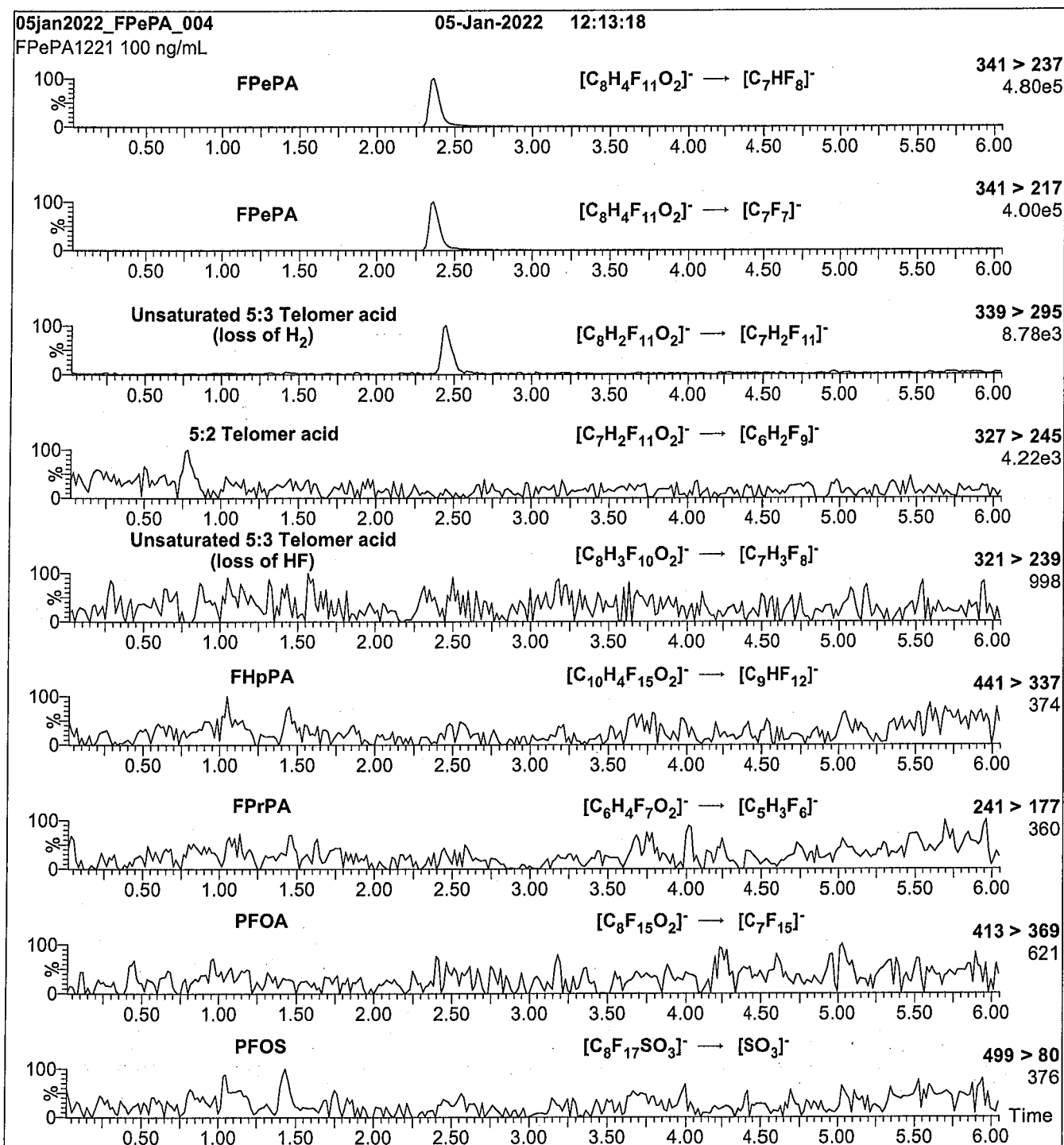
Mobile phase: Gradient  
 Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7 min and hold for  
 3 min before returning to initial conditions in 0.75 min.  
 Time: 12 min

Flow: 300 µL/min

**MS Parameters:**

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 0.50  
 Cone Voltage (V) = 18.50  
 Desolvation Temperature (°C) = 500  
 Desolvation Gas Flow (L/hr) = 1000

**Figure 2:** FPePA; LC/MS/MS Data (Selected MRM Transitions)**Conditions for Figure 2:**

Injection: On-column (FPePA)  
 Mobile phase: Same as Figure 1  
 Flow: 300  $\mu$ L/min

**MS Parameters:**

Collision Gas (mbar) = 3.09e-3  
 Collision Energy (eV) = 10

# Analytical Standard Record

**22C0309**

Description:	PFAS - SAS FPePA 50ug/mL	Expires:	01/05/2027
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1	Department:	PFAS1221)
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

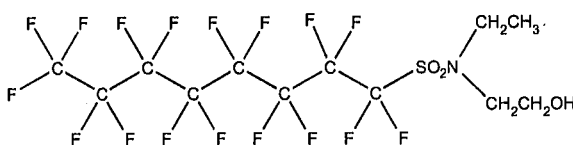
Analyte	Parent	CAS Number	Concentration	Units
5:3FTCA		914637-49-3	50	ug/mL



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-EtFOSE-M **LOT NUMBER:** NEtFOSE0921M  
**COMPOUND:** 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol **22C0310**  
**STRUCTURE:** **CAS #:** 1691-99-2



**MOLECULAR FORMULA:** C<sub>12</sub>H<sub>10</sub>F<sub>17</sub>NO<sub>3</sub>S **MOLECULAR WEIGHT:** 571.25  
**CONCENTRATION:** 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 09/22/2021 (HRGC/LRMS)  
 09/23/2021 (LC/MS)  
**EXPIRY DATE:** (mm/dd/yyyy) 09/23/2026  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)  
 Figure 2: LC/MS Data (Full Scan and Mass Spectrum)  
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:   
 B.G. Chittim, General Manager

Date: 10/20/2021  
 (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

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

**HANDLING:**

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**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

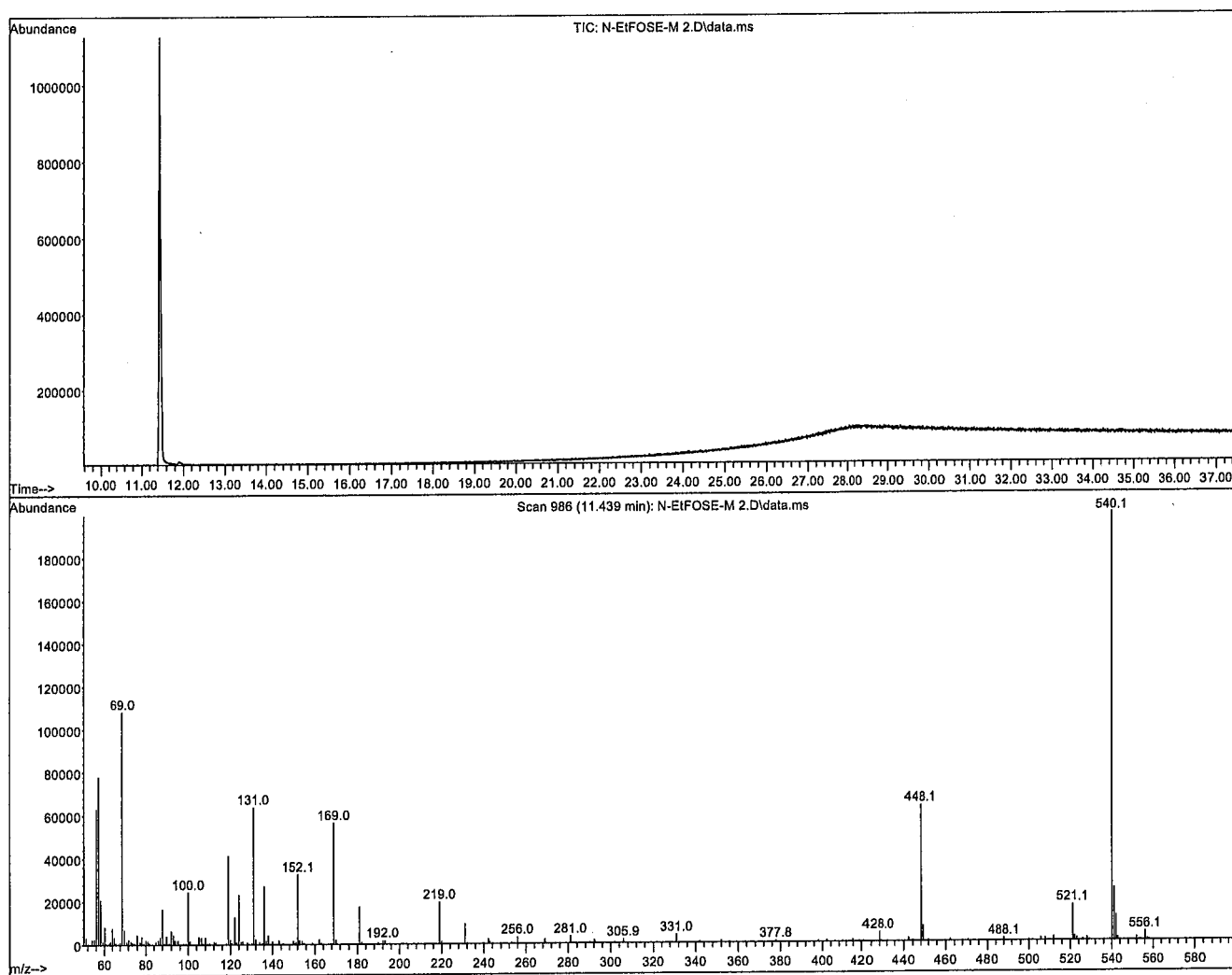
**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*



**Figure 1: N-EtFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

Agilent 7890A HRGC  
 Agilent 5975C MSD

**Chromatographic Conditions:**

Column: 30 m DB-5 (0.25 mm id, 0.25  $\mu$ m film thickness) Agilent J&W

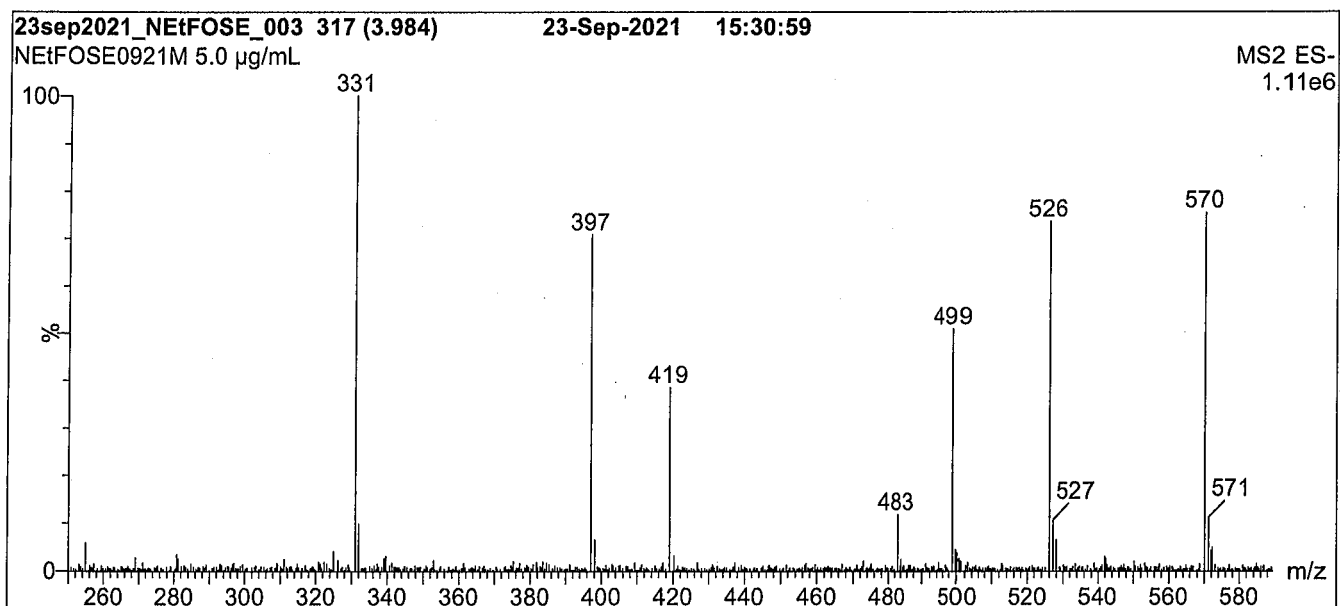
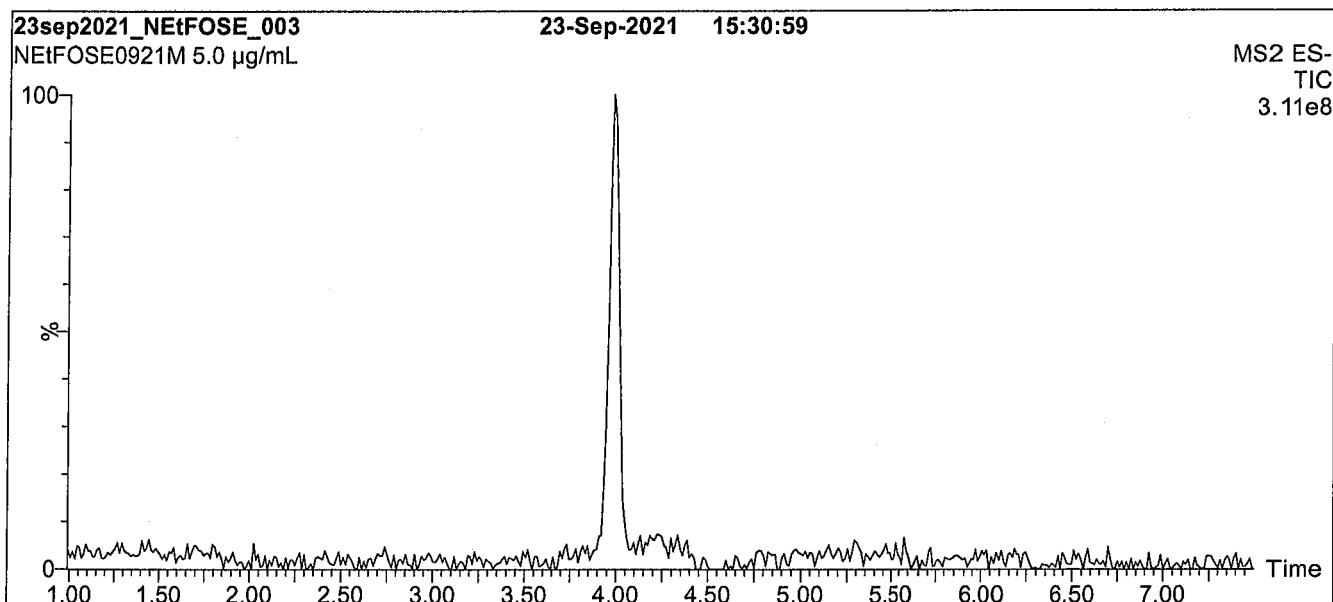
Flow: Constant at 1 mL/min

Injector: 250°C (Splitless Injection)

Oven: 100°C (5 min)  
 10°C/min to 325°C  
 325°C (10 min)

Ionization: EI+

Detector: 230°C  
 Full Scan (50-1000 amu)

**Figure 2: N-EtFOSE-M; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 2:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7 µm, 2.1 x 100 mm

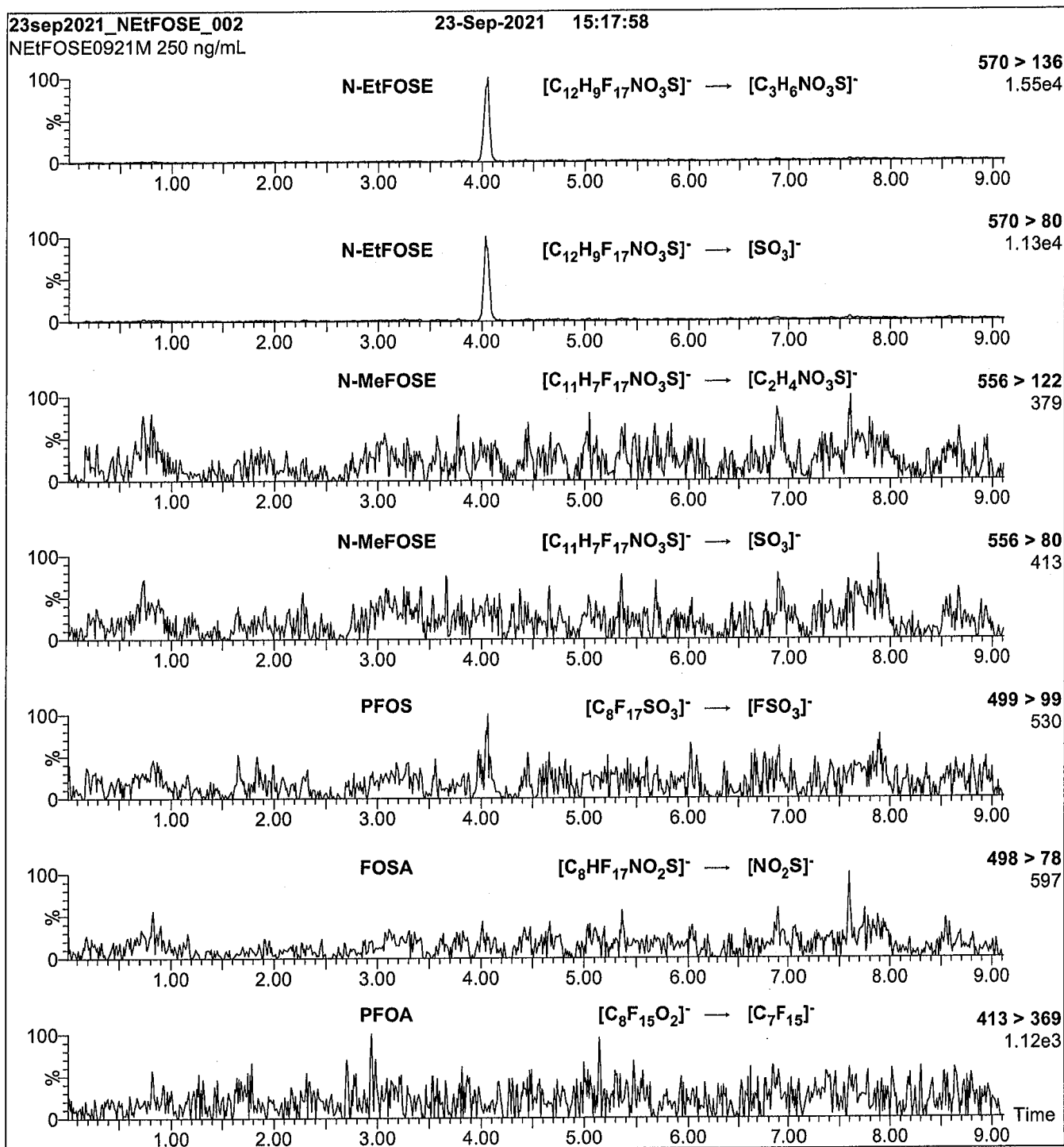
Mobile phase: Gradient  
Start: 30% H<sub>2</sub>O / 70% MeOH  
Ramp to 90% organic over 8 min and hold for  
1.5 min before returning to initial conditions in 1 min.  
Time: 12 min

Flow: 300 µL/min

**MS Parameters:**

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 65.00  
Desolvation Temperature (°C) = 450  
Desolvation Gas Flow (L/hr) = 1000

**Figure 3: N-EtFOSE-M; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 3:**

Injection: On-column (N-EtFOSE-M)

Mobile phase: Same as Figure 2

Flow: 300  $\mu$ L/min**MS Parameters:**

Collision Gas (mbar) = 3.14e-3

Collision Energy (eV) = 32



# Analytical Standard Record

**22C0310**

Description:	PFAS - SAS NETFOSE 50ug/mL	Expires:	09/23/2026
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1	Department:	NETFOSE0921M)
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

Analyte	Parent	CAS Number	Concentration	Units
NETFOSE		1691-99-2	50	ug/mL



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**SYNTHESIS / CHARACTERIZATION:**

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**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

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**LIMITED WARRANTY:**

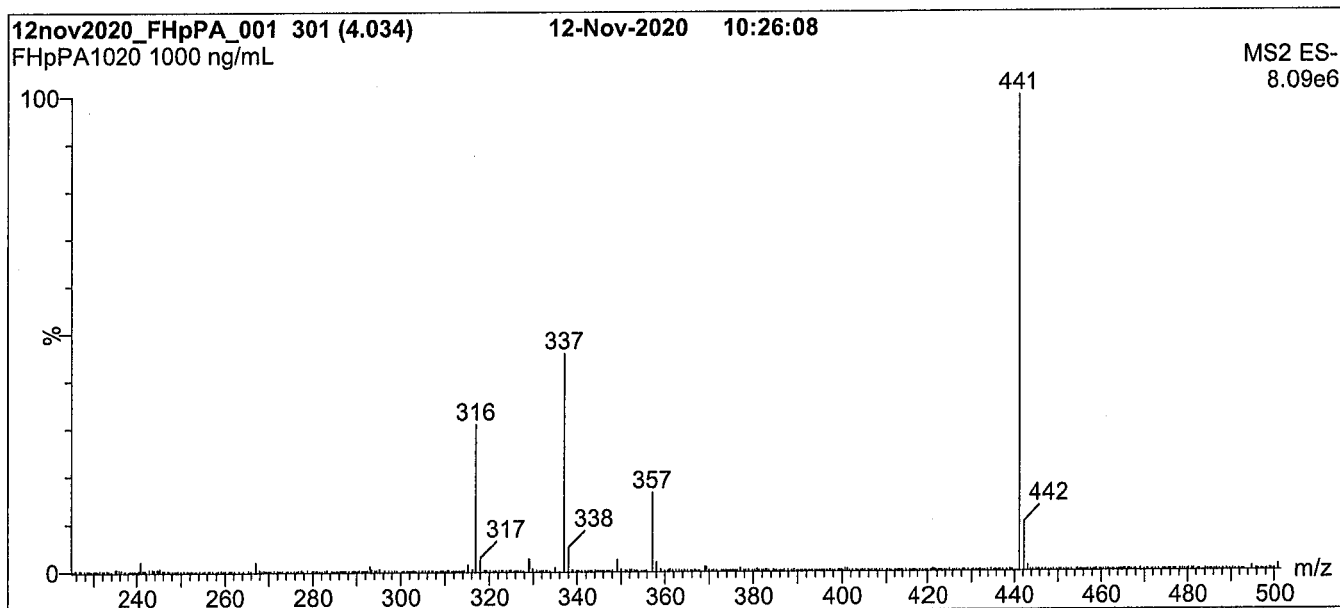
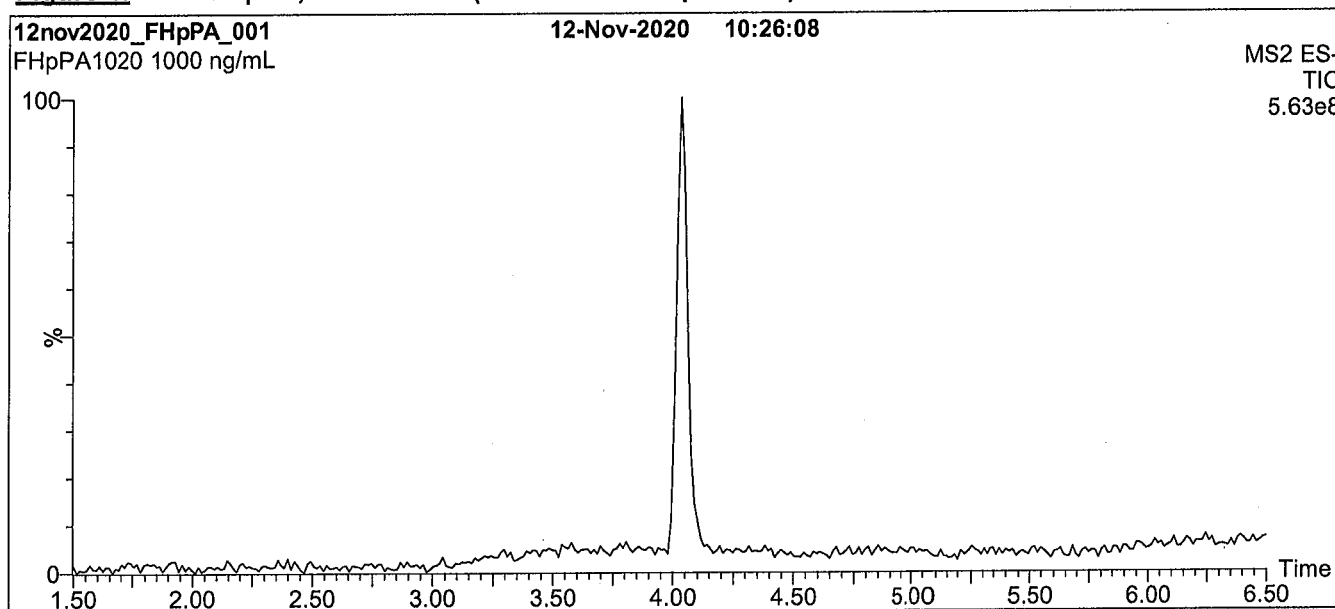
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**Figure 1: FHpPA; LC/MS Data (TIC and Mass Spectrum)****Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for  
2 min before returning to initial conditions in 0.75 min.  
Time: 12 min

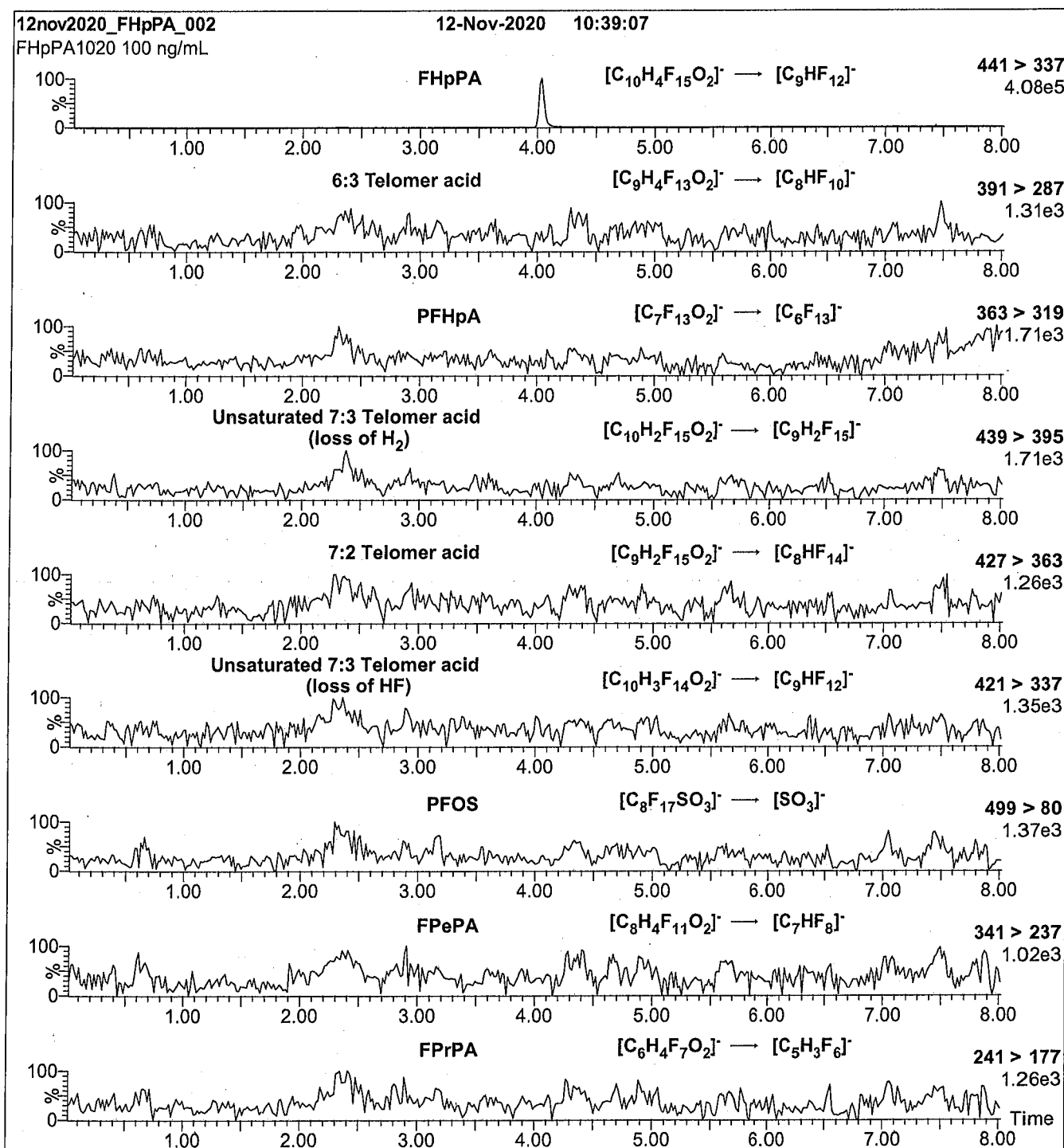
Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 0.50  
Cone Voltage (V) = 28.50  
Desolvation Temperature (°C) = 500  
Desolvation Gas Flow (L/hr) = 1000



**Figure 2: FHpPA; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (FHpPA)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ L/min**MS Parameters:**

Collision Gas (mbar) = 3.41e-3

Collision Energy (eV) = 8

# Analytical Standard Record

**22C0311**

Description:	PFAS - SAS FHpPA 50ug/mL	Expires:	11/12/2025
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: FHpPA1020)
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 16:00 by DAG

Analyte	Parent	CAS Number	Concentration	Units
7:3FTCA		812-70-4	50	ug/mL

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**22C0311**

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Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#: FHpPA1020)
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 16:00 by DAG

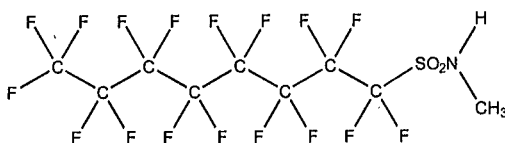
Analyte	Parent	CAS Number	Concentration	Units
7:3FTCA		812-70-4	50	ug/mL



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-MeFOSA-M      **LOT NUMBER:** NMeFOSA0721M  
**COMPOUND:** N-methylperfluoro-1-octanesulfonamide      22C0312  
**STRUCTURE:**      **CAS #:** 31506-32-8



**MOLECULAR FORMULA:**  $C_9H_4F_{17}NO_2S$       **MOLECULAR WEIGHT:** 513.17  
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/mL}$       **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 08/03/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 08/03/2026  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan 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: 08/04/2021  
 (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

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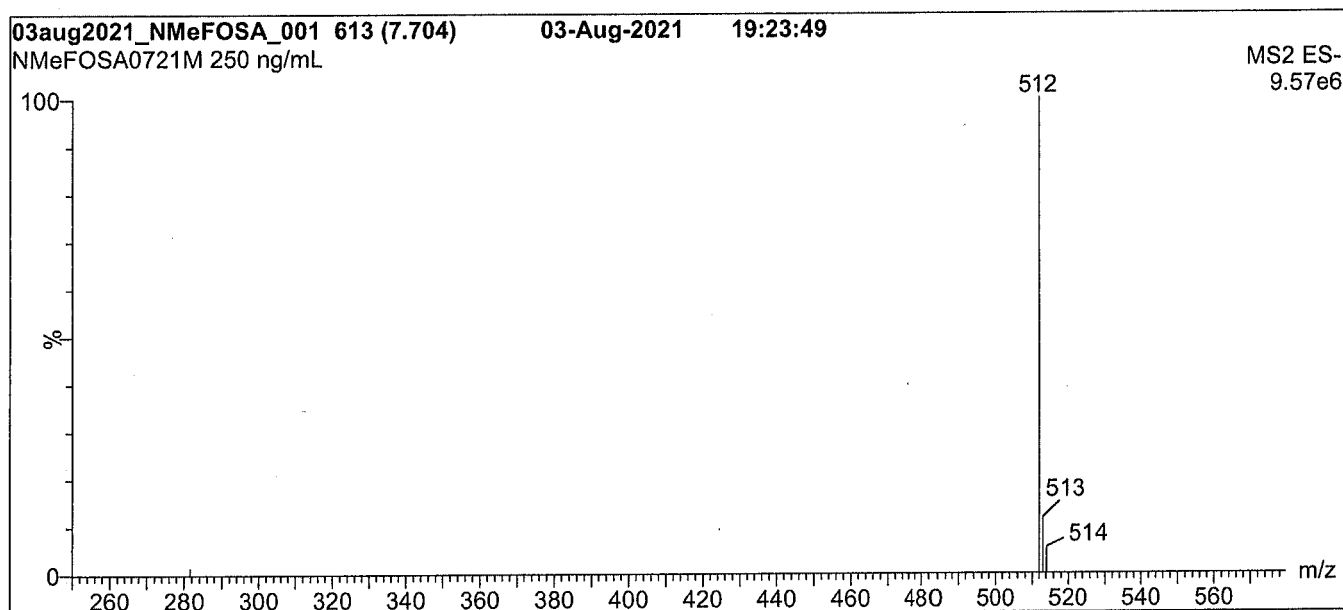
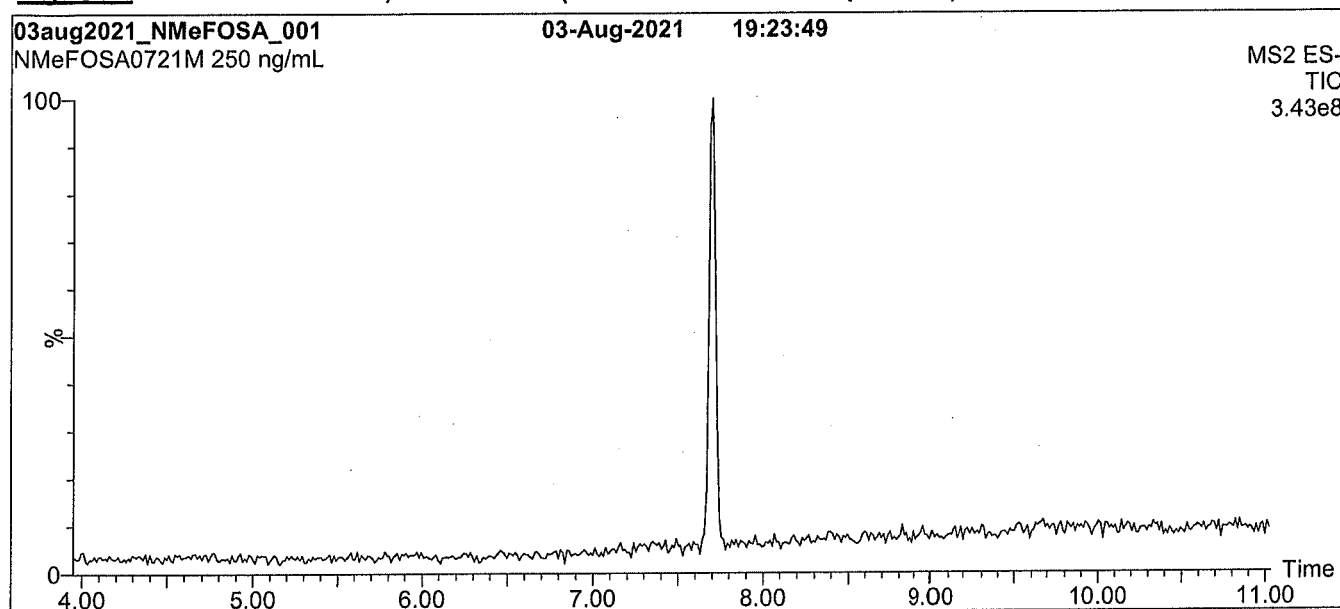
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**Figure 1: N-MeFOSA-M; LC/MS Data (Full Scan and Mass Spectrum)****Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

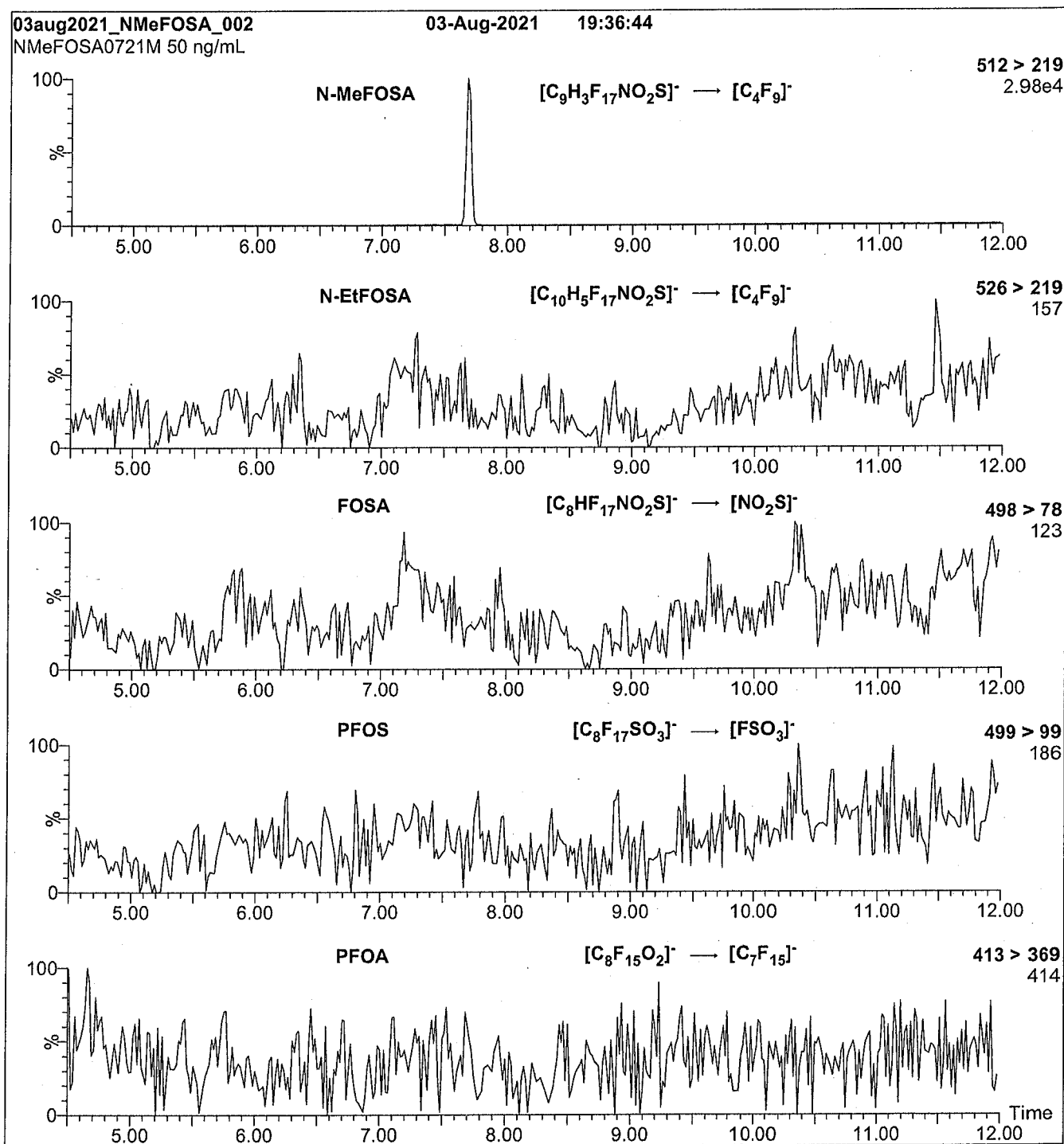
Mobile phase: Gradient  
Start: 40% H<sub>2</sub>O / 60% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for  
2 min before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 1.00  
Cone Voltage (V) = 44.00  
Desolvation Temperature (°C) = 500  
Desolvation Gas Flow (L/hr) = 1000

**Figure 2: N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (N-MeFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ L/min**MS Parameters:**

Collision Gas (mbar) = 3.41e-3

Collision Energy (eV) = 24

# Analytical Standard Record

**22C0312**

Description:	PFAS - SAS NMeFOSA 50ug/mL	Expires:	08/03/2026
Standard Type:	Analyte Spike	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Dipti Gokal
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	03/15/2022 16:00 by DAG

Analyte	Parent	CAS Number	Concentration	Units
NMeFOSA		31506-32-8	50	ug/mL

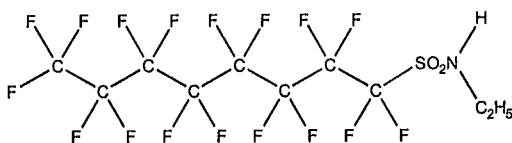




# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-EtFOSA-M      **LOT NUMBER:** NEtFOSA0821M  
**COMPOUND:** N-ethylperfluoro-1-octanesulfonamide      **22C0313**  
**STRUCTURE:**      **CAS #:** 4151-50-2



**MOLECULAR FORMULA:**  $C_{10}H_{17}F_{17}NO_2S$       **MOLECULAR WEIGHT:** 527.20  
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/mL}$       **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 08/12/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 08/12/2026  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

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

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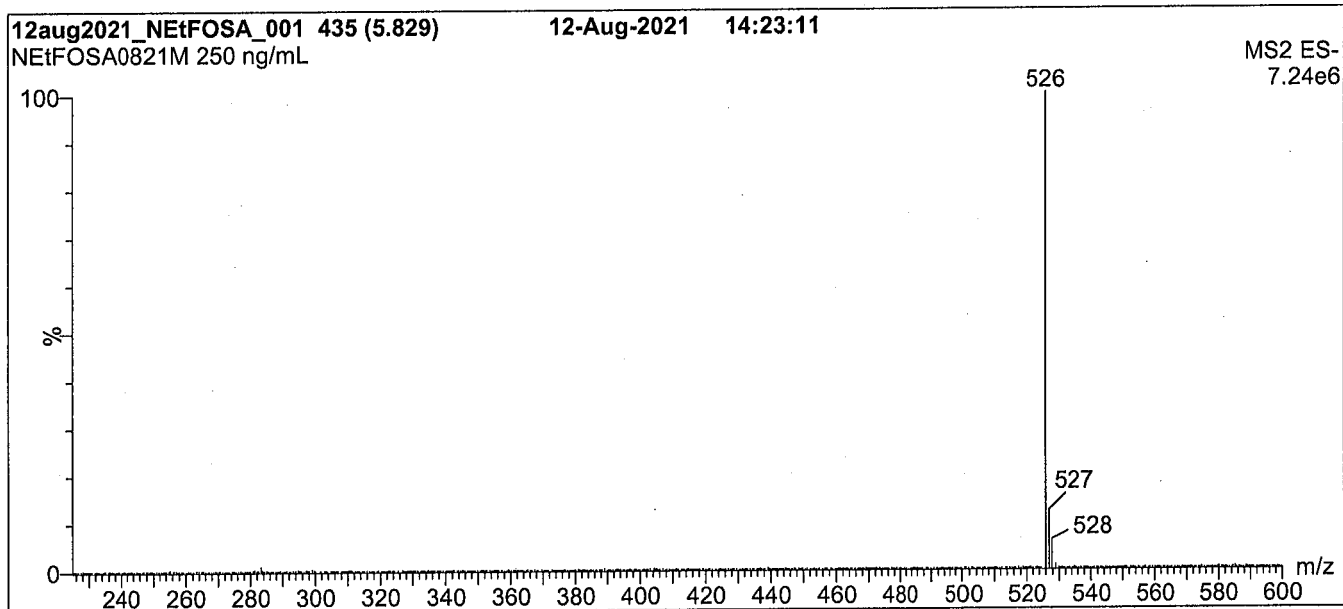
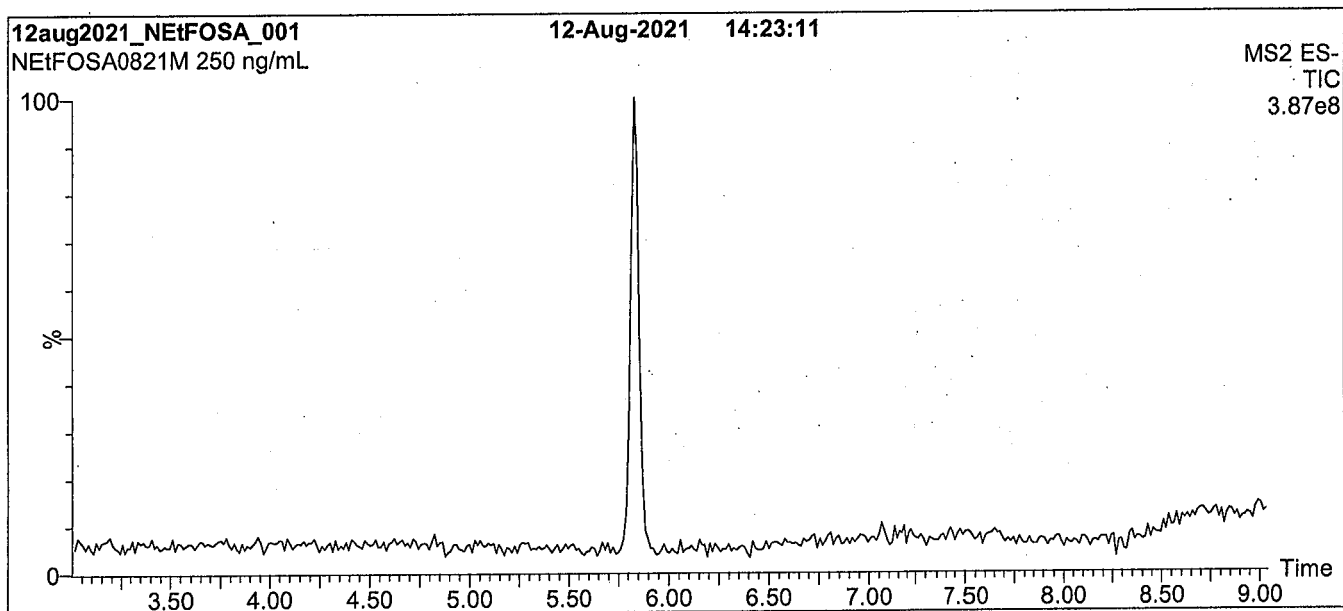
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Certified By: \_\_\_\_\_

B.G. Chittim, General Manager

Date: 08/16/2021  
 (mm/dd/yyyy)

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Flow: 300  $\mu$ L/min

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Source: Electrospray (negative)  
Capillary Voltage (kV) = 1.00  
Cone Voltage (V) = 44.00  
Desolvation Temperature ( $^{\circ}$ C) = 500  
Desolvation Gas Flow (L/hr) = 1000

# Analytical Standard Record

**22C0313**

Description:	PFAS - SAS NETFOSA 50ug/mL	Expires:	08/12/2026
Standard Type:	Other	Prepared:	03/15/2022
Solvent:	Methanol	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1	Department:	NETFOSA0821M)
Vials:	1	Last Edit:	08/17/2022 10:49 by LYA

Analyte	Parent	CAS Number	Concentration	Units
NETFOSA		4151-50-2	50	ug/mL



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PFAC-MXF** 22F0058

**Native Replacement PFAS  
Solution/Mixture**

**PRODUCT CODE:** PFAC-MXF  
**LOT NUMBER:** PFACMXF0122  
**SOLVENT(S):** Methanol / Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 01/10/2022  
**LAST TESTED:** (mm/dd/yyyy) 01/11/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 01/11/2025  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DESCRIPTION:**

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and GenX (HFPO-DA). The components and their concentrations are given in Table A.

The individual native components of this mixture all have chemical purities of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
 Figure 1: LC/MS Data (SIR)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

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

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 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A: PFAC-MXF; Components and Concentrations (ng/mL;  $\pm$  5% in Methanol/Water (<1%))**

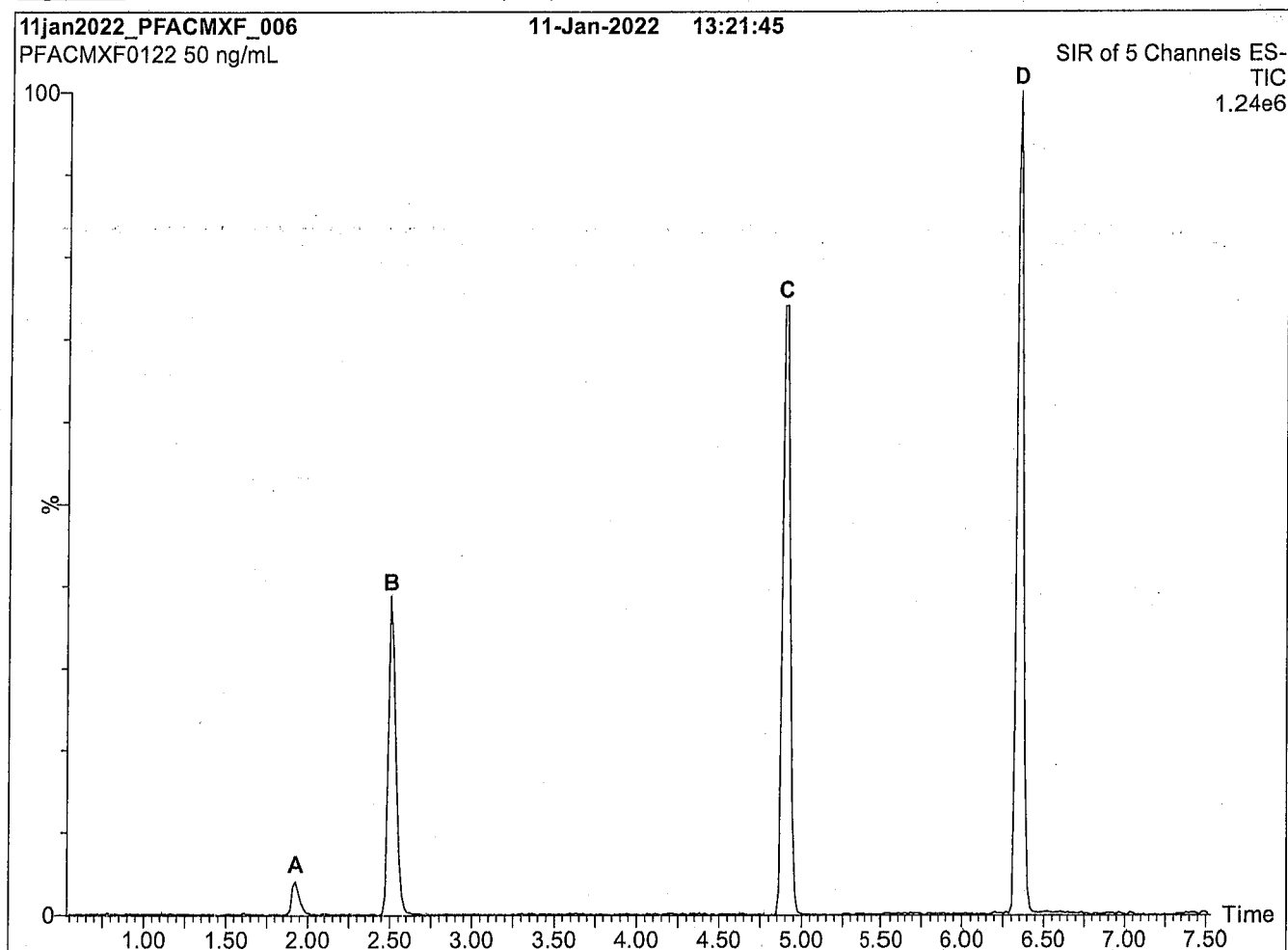
Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxananoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

\* Concentrations have been rounded to three significant figures.

Certified By: 

B.G. Chittim, General Manager

Date: 01/12/2022  
(mm/dd/yyyy)

**Figure 1: PFAC-MXF; LC/MS Data (SIR)****Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

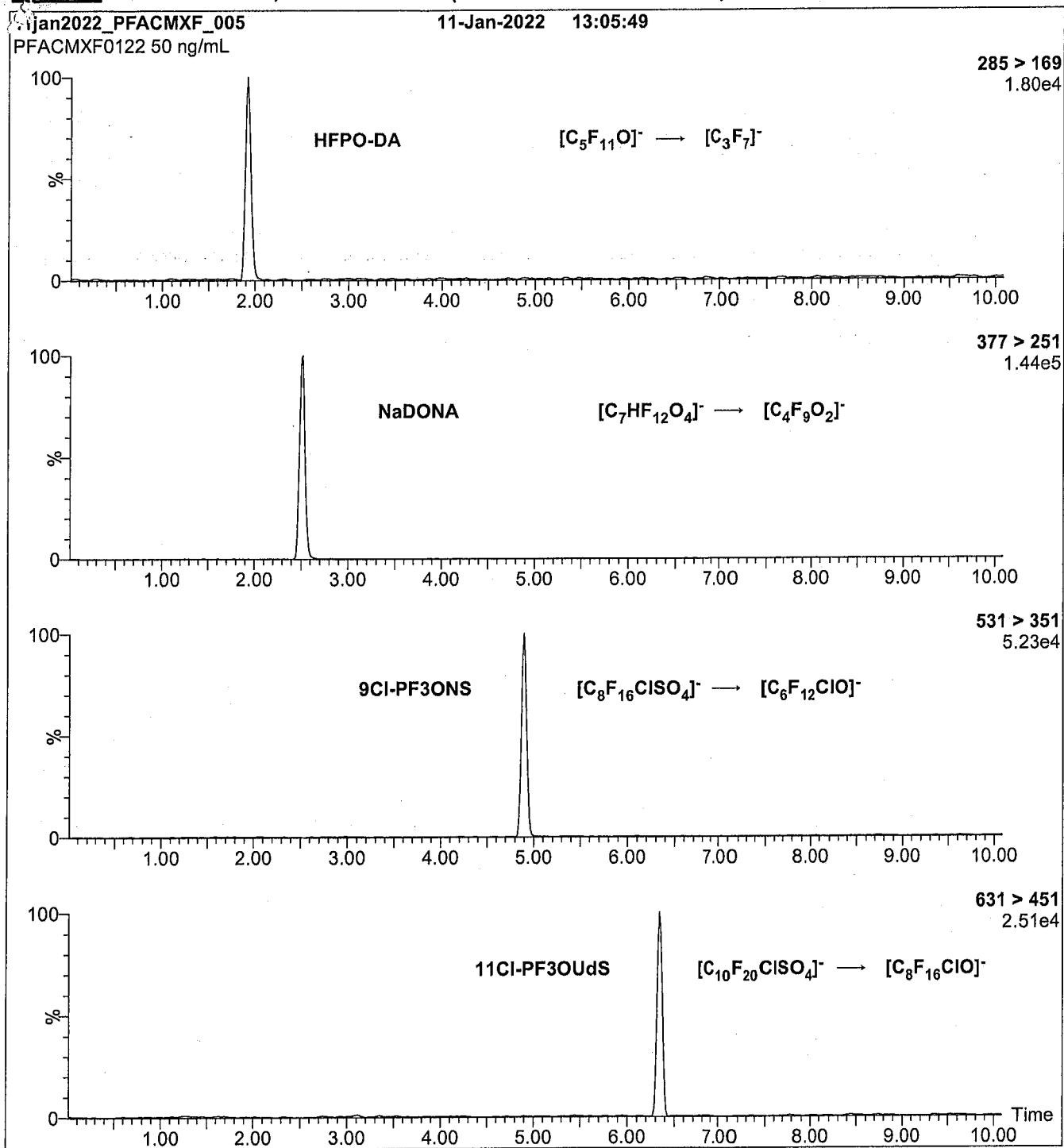
Mobile phase: Gradient  
Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for 2 min  
before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: SIR

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = variable (15-74)  
Desolvation Temperature ( $^{\circ}$ C) = 325  
Desolvation Gas Flow (L/hr) = 1000

**Figure 2: PFAC-MXF; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (PFAC-MXF)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ L/min**MS Parameters:**

Collision Gas (mbar) = 3.43e-3

Collision Energy (eV) = 6-60 (variable)





# Analytical Standard Record

**22F0058**

Description:	PFAS - MIX MXF 2ug/mL	Expires:	01/11/2025
Standard Type:	Other	Prepared:	01/10/2022
Solvent:	MeOH	Prepared By:	Lizbeth Andres
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	09/15/2022 09:32 by DAG

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS		763051-92-9	1.89	ug/mL
9CL-PF3ONS		756426-58-1	1.87	ug/mL
ADONA		919005-14-4	1.89	ug/mL
HFPO-DA		13252-13-6	2	ug/mL



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PFAC-MXH** 22F0059

**Native Per- and Poly-fluoroalkyl Substance  
Solution/Mixture**

**PRODUCT CODE:** PFAC-MXH  
**LOT NUMBER:** PFACMXH0921  
**SOLVENT(S):** Methanol / Isopropanol (2%) / Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 09/09/2021  
**LAST TESTED:** (mm/dd/yyyy) 09/14/2021  
**EXPIRY DATE:** (mm/dd/yyyy) 09/14/2026  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DESCRIPTION:**

PFAC-MXH is a solution/mixture of eleven native linear perfluoroalkylcarboxylic acids (C<sub>4</sub>-C<sub>14</sub>), eight native perfluoroalkanesulfonates (C<sub>4</sub>, C<sub>5</sub>, C<sub>7</sub>, C<sub>9</sub>, C<sub>10</sub> and C<sub>12</sub> linear; C<sub>6</sub> and C<sub>8</sub> linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide (FOSA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
 Table B: Isomeric Components and Percent Composition of br-NMeFOSAA  
 Table C: Isomeric Components and Percent Composition of br-NEtFOSAA  
 Table D: Isomeric Components and Percent Composition of PFHxSK  
 Table E: Isomeric Components and Percent Composition of PFOSK  
 Figure 1: LC/MS Data (SIR)  
 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 acids to their respective methyl esters.

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**EXPIRY DATE / PERIOD OF VALIDITY:**

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**Table A: PFAC-MXH; Components and Concentrations**  
( $\mu\text{g/mL}$ ,  $\pm 5\%$  in methanol / isopropanol (2%) / water (<1%))

Compound	Acronym	Concentration* ( $\mu\text{g/mL}$ )		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4.00		1
Perfluoro-n-pentanoic acid	PFPeA	2.00		2
Perfluoro-n-hexanoic acid	PFHxA	1.00		5
Perfluoro-n-heptanoic acid	PFHpA	1.00		7
Perfluoro-n-octanoic acid	PFOA	1.00		11
Perfluoro-n-nonanoic acid	PFNA	1.00		14
Perfluoro-n-decanoic acid	PFDA	1.00		18
Perfluoro-n-undecanoic acid	PFUdA	1.00		23
Perfluoro-n-dodecanoic acid	PFDoA	1.00		26
Perfluoro-n-tridecanoic acid	PFTTrDA	1.00		27
Perfluoro-n-tetradecanoic acid	PFTeDA	1.00		29
Perfluoro-1-octanesulfonamide	FOSA	1.00		25
N-methylperfluorooctanesulfonamidoacetic acid <sup>a</sup>	N-MeFOSAA: linear isomer	0.760		20
	N-MeFOSAA: $\Sigma$ branched isomers	0.240		17
N-ethylperfluorooctanesulfonamidoacetic acid <sup>b</sup>	N-EtFOSAA: linear isomer	0.775		22
	N-EtFOSAA: $\Sigma$ branched isomers	0.225		21
Compound	Acronym	Concentration* ( $\mu\text{g/mL}$ )		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanedisulfonate	L-PFBS	1.00	0.887	3
Sodium perfluoro-1-pentadisulfonate	L-PFPeS	1.00	0.941	6
Potassium perfluorohexadisulfonate <sup>c</sup>	PFHxSK: linear isomer	0.811	0.741	9
	PFHxSK: $\Sigma$ branched isomers	0.189	0.173	8
Sodium perfluoro-1-heptadisulfonate	L-PFHpS	1.00	0.953	12
Potassium perfluorooctadisulfonate <sup>d</sup>	PFOSK: linear isomer	0.788	0.732	15
	PFOSK: $\Sigma$ branched isomers	0.211	0.196	13
Sodium perfluoro-1-nonadisulfonate	L-PFNS	1.00	0.962	19
Sodium perfluoro-1-decadisulfonate	L-PFDs	1.00	0.965	24
Sodium perfluoro-1-dodecadisulfonate	L-PFDoS	1.00	0.970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2Fts	4.00	3.75	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2Fts	4.00	3.80	10
Sodium 1H,1H,2H,2H-perfluorodecane sulfonate	8:2Fts	4.00	3.84	16

<sup>a</sup> See Table B for percent composition of linear and branched N-MeFOSAA isomers.

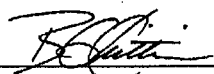
<sup>b</sup> See Table C for percent composition of linear and branched N-EtFOSAA isomers.

<sup>c</sup> See Table D for percent composition of linear and branched PFHxSK isomers.

<sup>d</sup> See Table E for percent composition of linear and branched PFOSK isomers.

\* Concentrations have been rounded to three significant figures.

Certified By: \_\_\_\_\_

  
B.G. Chittim, General Manager

Date: 09/23/2021

(mm/dd/yyyy)

**Table B:** br-NMeFOSAA; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\*

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR	
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad  $ $\quad \quad \quad \text{CH}_3$	76.0	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	0.7	24.0
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	2.0	
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	6.0	
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	14.0	
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$\quad \quad \quad \text{CF}_3$ $\quad \quad \quad  $ $\text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	0.2	
7	Other Unidentified Isomers		1.1	

\* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

**Table C: br-NEtFOSAA; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR	
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad  $ $\quad \quad \quad \text{C}_2\text{H}_5$	77.5	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	2.3	22.5
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	2.2	
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	5.4	
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	10.4	
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$\quad \quad \quad \text{CF}_3$ $\text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	0.3	
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$\quad \quad \quad \text{CF}_3$ $\text{CF}_3\text{CFCF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	0.3	
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$\quad \quad \quad \text{CF}_3$ $\text{CF}_3\text{CFCF}_2\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CO}_2\text{H}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{C}_2\text{H}_5$	0.3	
9	Other Unidentified Isomers		1.3	

\* Percent of total N-ethylperfluorooctanesulfonamidoacetic acid isomers only.

**Table D: PFHxSK; Isomeric Components and Percent Composition (by  $^{19}\text{F}$ -NMR)\***

Isomer	Compound	Structure	Percent Composition by $^{19}\text{F}$ -NMR	
1	Potassium perfluoro-1-hexanesulfonate	$\text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+$	81.1	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}(\text{CF}_3)\text{SO}_3^-\text{K}^+ \\   \\ \text{CF}_3 \end{array}$	2.9	18.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}(\text{CF}_3)\text{CF}_2\text{SO}_3^-\text{K}^+ \\   \\ \text{CF}_3 \end{array}$	1.4	
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\   \\ \text{CF}_3 \end{array}$	5.0	
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\   \\ \text{CF}_3 \end{array}$	8.9	
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$\begin{array}{c} \text{CF}_3 \\   \\ \text{CF}_3\text{C}(\text{CF}_3)\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\   \\ \text{CF}_3 \end{array}$	0.2	
7	Other Unidentified Isomers		0.5	

\* Percent of total perfluorohexanesulfonate isomers only.

\*\* Systematic Name: Potassium perfluorohexane-2-sulfonate.

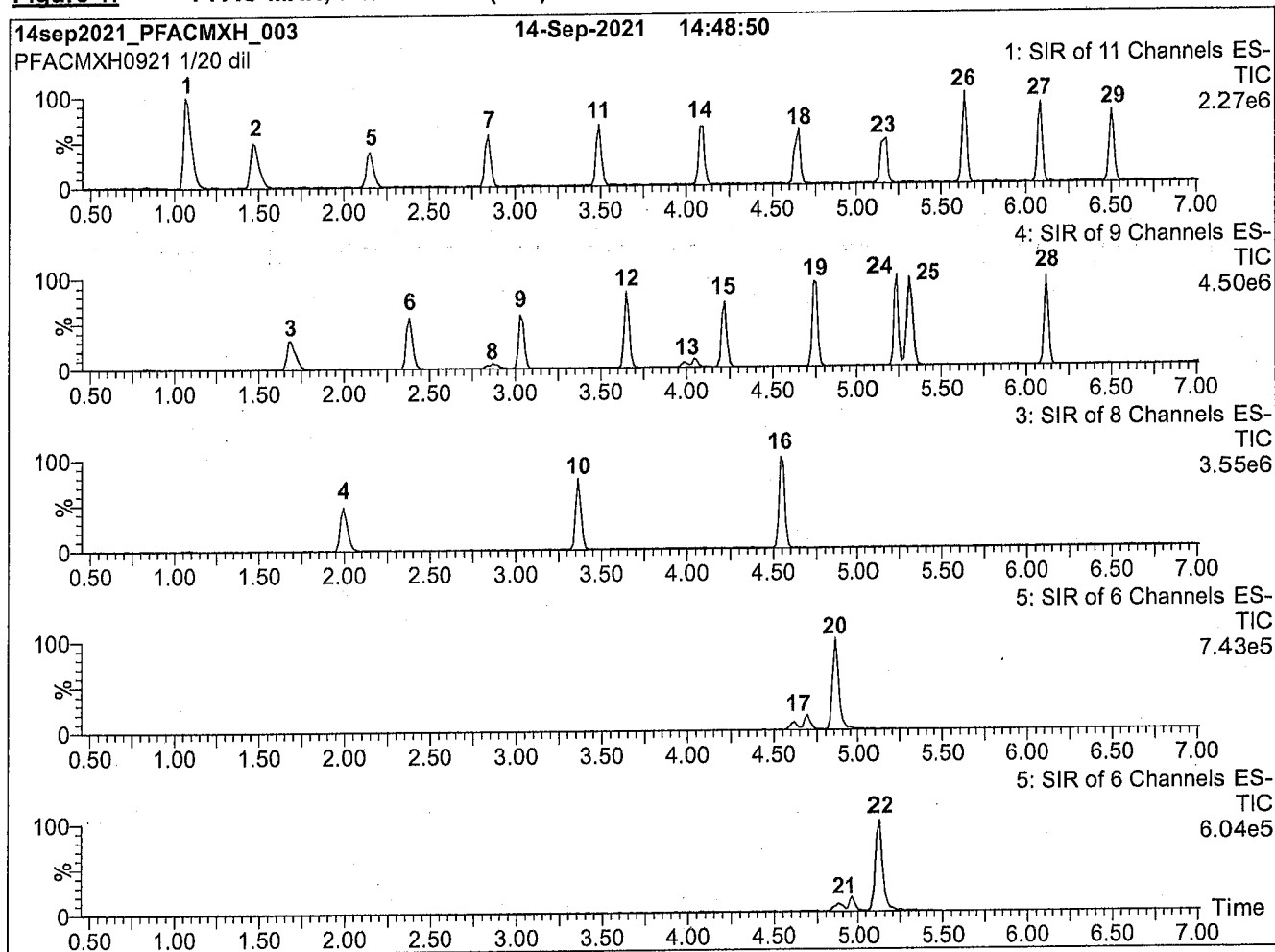


**Table E: PFOSK; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR	
1	Potassium perfluoro-1-octanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF(SO <sub>3</sub> <sup>-</sup> )K <sup>+</sup>   CF <sub>3</sub>	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF(CF <sub>3</sub> )SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	CF <sub>3</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CCF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CF <sub>2</sub> CCF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	CF <sub>3</sub>   CF <sub>3</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> CF(CF <sub>3</sub> )CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>   CF <sub>3</sub>	0.07	

\* Percent of total perfluorooctanesulfonate isomers only.

\*\* Systematic Name: Potassium perfluorooctane-2-sulfonate.

**Figure 1:** PFAC-MXH; LC/MS Data (SIR)**Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

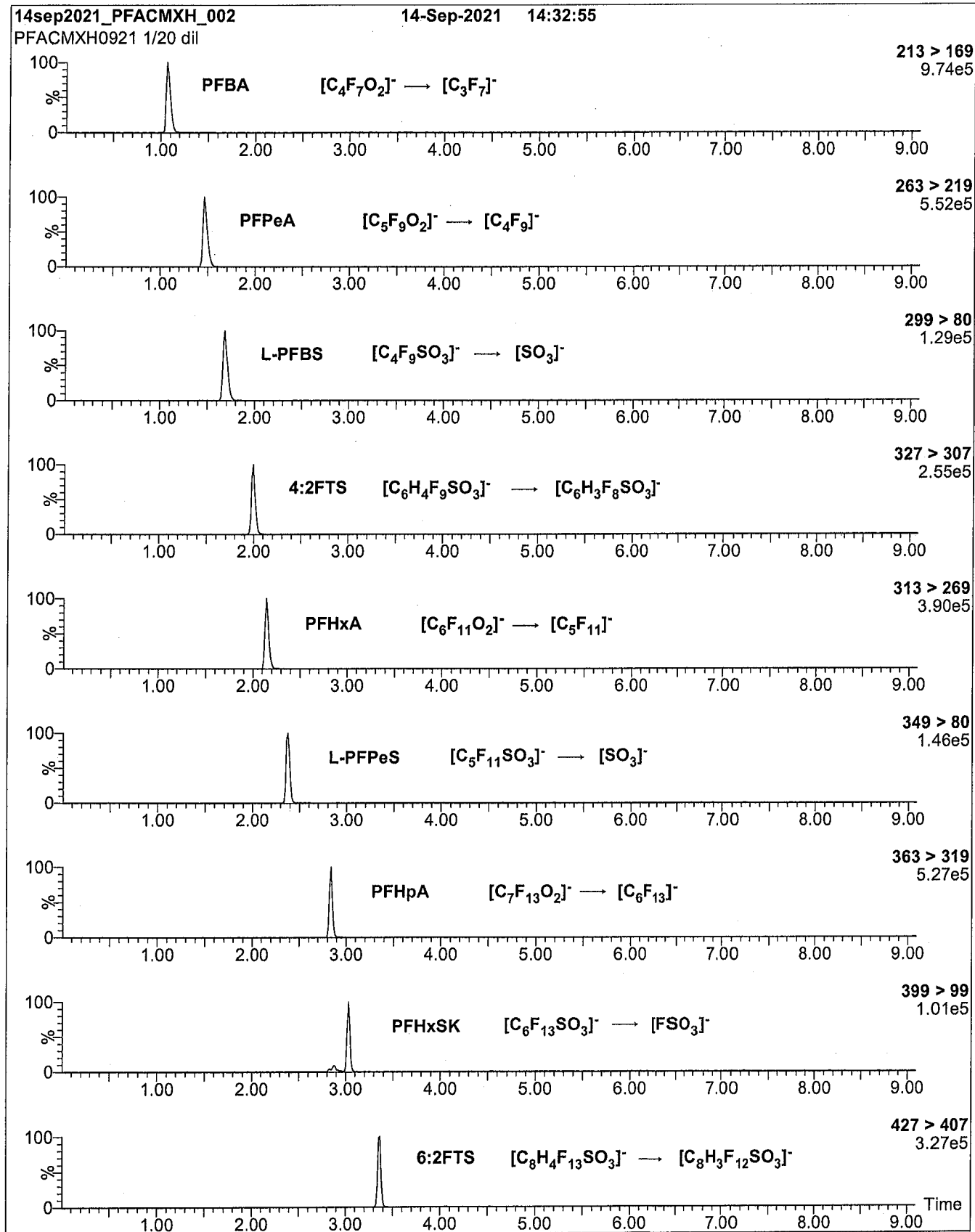
Start: 50% H<sub>2</sub>O / 50% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 9 min and hold for 2 min  
before returning to initial conditions in 1 min.  
Time: 15 min

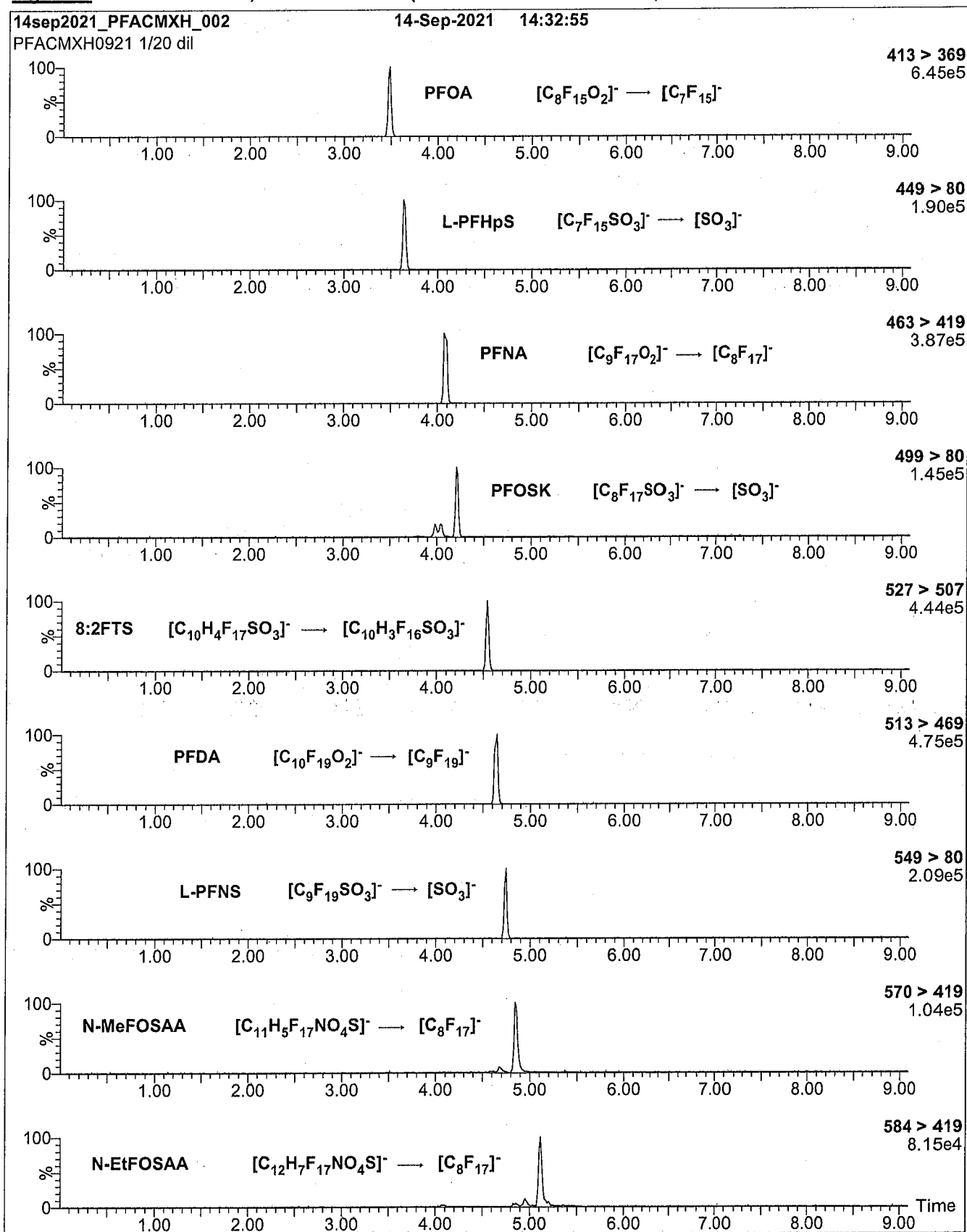
Flow: 300  $\mu$ L/min

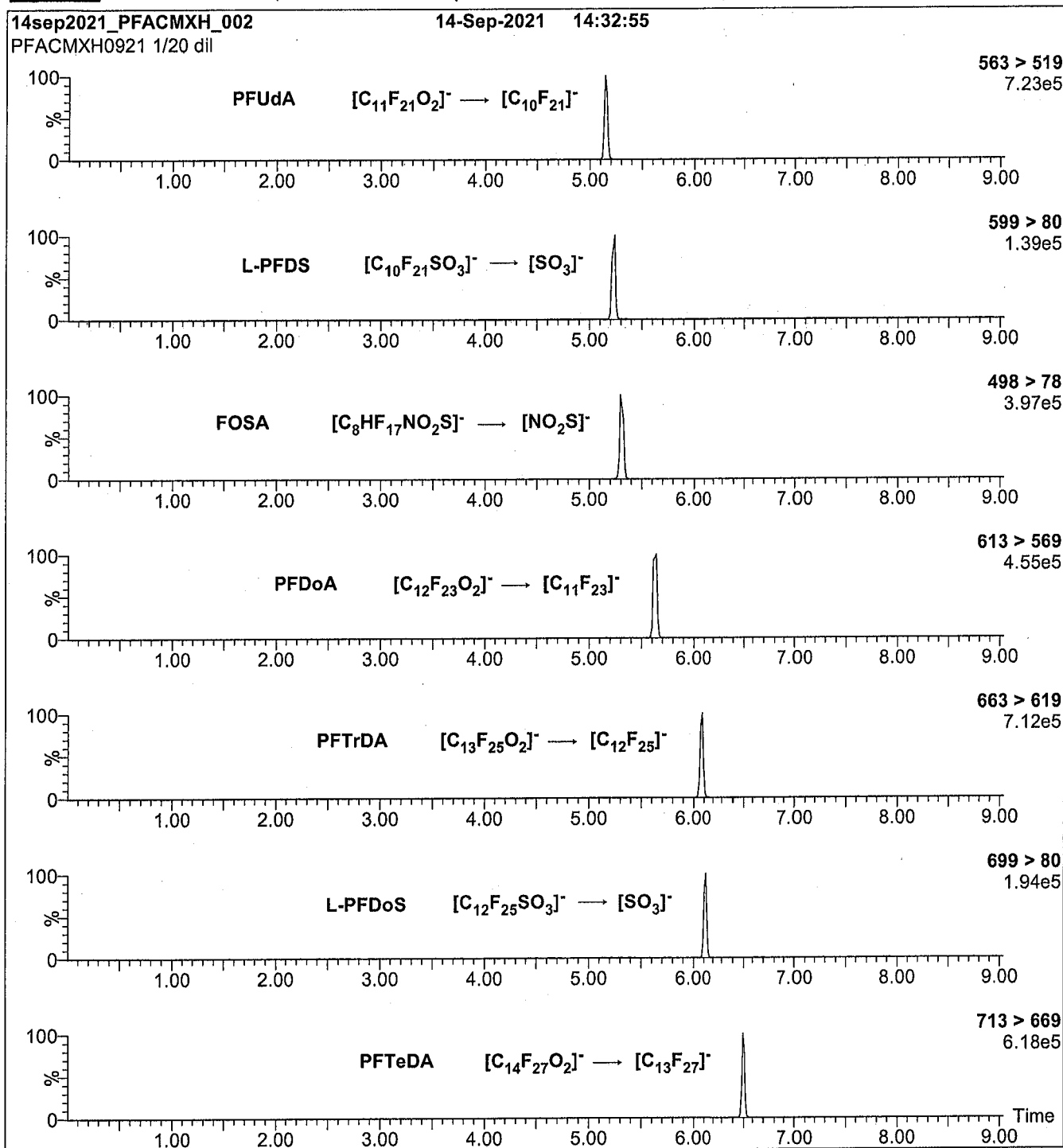
**MS Parameters:**

Experiment: SIR

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.50  
Cone Voltage (V) = variable (2-74)  
Desolvation Temperature ( $^{\circ}$ C) = 350  
Desolvation Gas Flow (L/hr) = 1000

**Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)**

**Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)**

**Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (PFAC-MXH)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ L/min**MS Parameters:**

Collision Gas (mbar) = 3.31e-3

Collision Energy (eV) = 6-60 (variable)



# Analytical Standard Record

**22F0059**

Description:	PFAS - MIX MXH 2ug/mL	Expires:	09/14/2026
Standard Type:	Other	Prepared:	09/09/2021
Solvent:	MeOH	Prepared By:	Lizbeth Andres
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	09/15/2022 09:33 by DAG

Analyte	Parent	CAS Number	Concentration	Units
4:2FTS		757124-72-4	3.75	ug/mL
6:2FTS		27619-97-2	3.8	ug/mL
8:2FTS		39108-34-4	3.84	ug/mL
NETFOSAA		2991-50-6	1	ug/mL
NMeFOSAA		2355-31-9	1	ug/mL
PFBA		375-22-4	4	ug/mL
PFBS		375-73-5	0.887	ug/mL
PFDA		335-76-2	1	ug/mL
PFDOA		307-55-1	1	ug/mL
PFDOS		79780-39-5	0.97	ug/mL
PFDS		335-77-3	0.965	ug/mL
PFHPA		375-85-9	1	ug/mL
PFHPS		375-92-8	0.953	ug/mL
PFHXA		307-24-4	1	ug/mL
PFHXS		355-46-4	0.914	ug/mL
PFNA		375-95-1	1	ug/mL
PFNS		68259-12-1	0.962	ug/mL
PFOA		335-67-1	1	ug/mL
PFOS		1763-23-1	0.928	ug/mL
PFOSA		754-91-6	1	ug/mL
PFPEA		2706-90-3	2	ug/mL
PFPEs		630402-22-1	0.941	ug/mL
PFTEDA		376-06-7	1	ug/mL
PFTRDA		72629-94-8	1	ug/mL
PFUnA		2058-94-8	1	ug/mL



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PFAC-MXG** 22F0061

**Native Perfluoroalkyl Ether Carboxylic  
Acids and Sulfonate Solution/Mixture**

<b><u>PRODUCT CODE:</u></b>	PFAC-MXG
<b><u>LOT NUMBER:</u></b>	PFACMXG0222
<b><u>SOLVENT(S):</u></b>	Methanol/Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	02/07/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	02/22/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	02/22/2027
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoule in a cool, dark place

**DESCRIPTION:**

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (SIR)  
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 acids to their respective methyl esters.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

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



**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

**HANDLING:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A1226), and ISO 17034 by ANSI National Accreditation Board (ANAB; AR-1523).



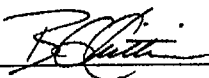
\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Table A: PFAC-MXG; Components and Concentrations (ng/mL;  $\pm$  5% in methanol/water (<1%))**

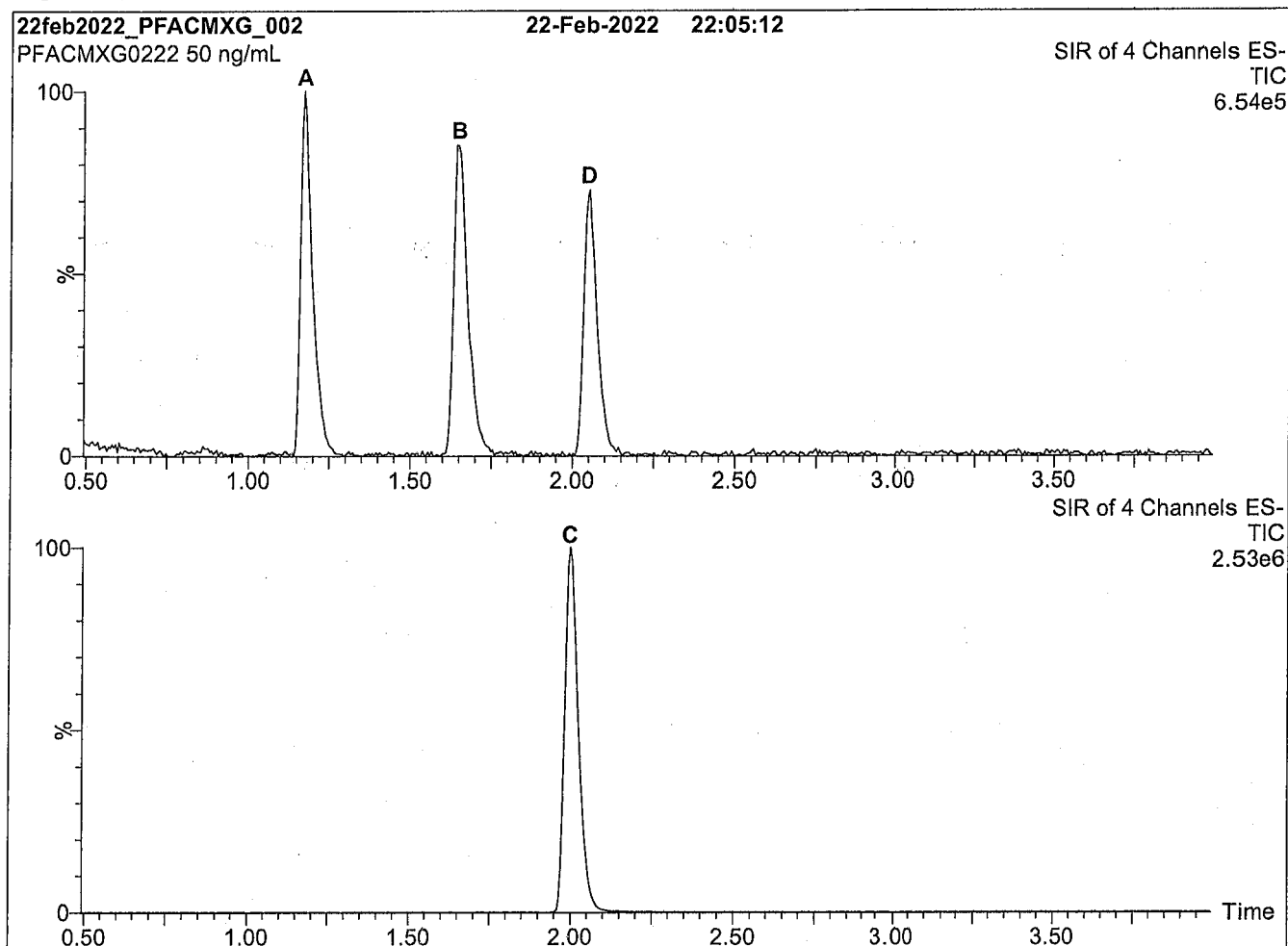
Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

\* Concentrations have been rounded to three significant figures.

Certified By: \_\_\_\_\_

  
B.G. Chittim, General Manager

Date: 03/03/2022  
(mm/dd/yyyy)

**Figure 1: PFAC-MXG; LC/MS Data (SIR)****Conditions for Figure 1:**

Waters Acquity Ultra Performance LC  
Waters Xevo TQ-S micro MS

**Chromatographic Conditions:**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

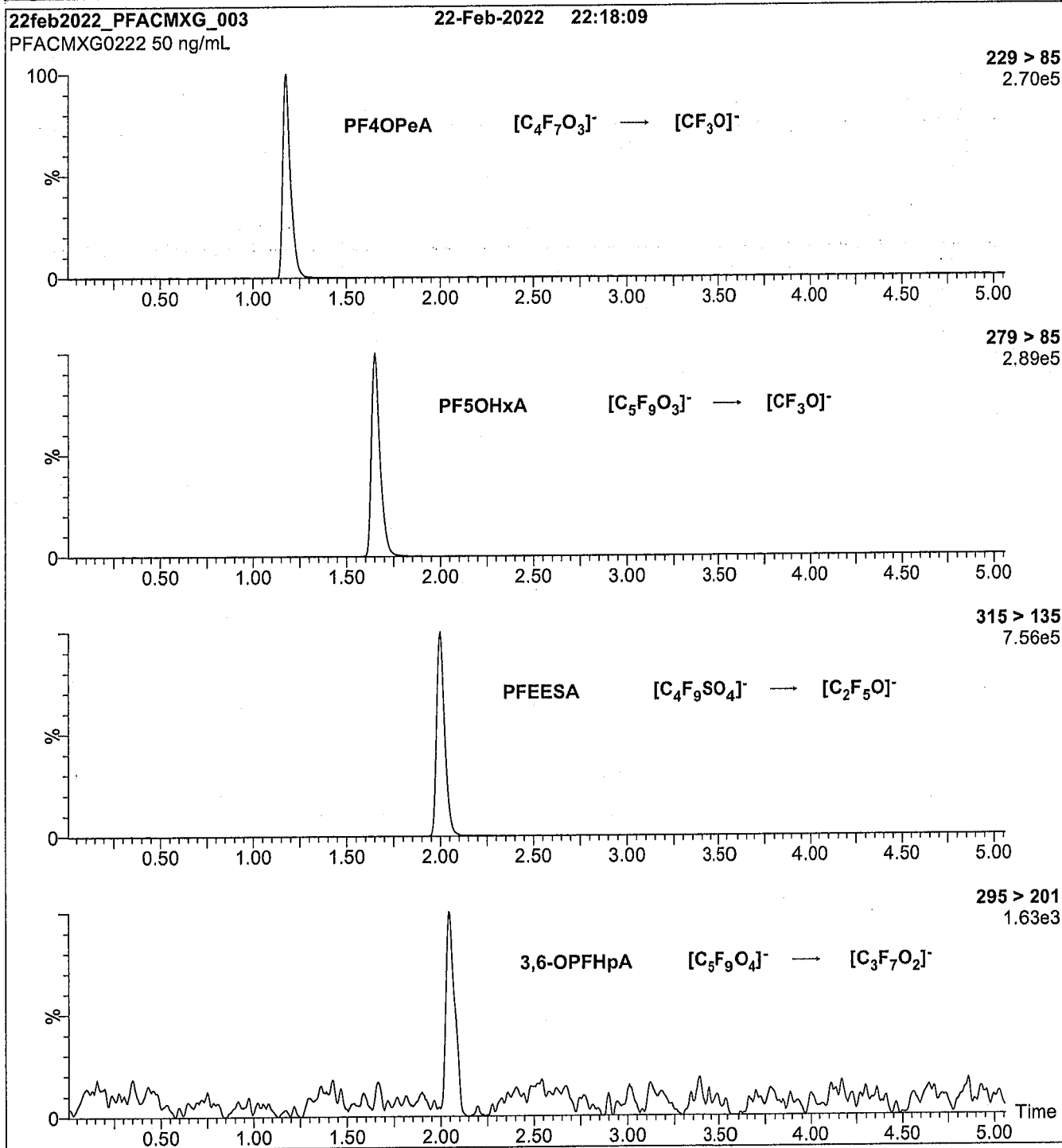
Mobile phase: Gradient  
Start: 50% H<sub>2</sub>O / 50% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for 2 min  
before returning to initial conditions in 0.75 min.  
Time: 12 min

Flow: 300  $\mu$ L/min

**MS Parameters:**

Experiment: SIR

Source: Electrospray (negative)  
Capillary Voltage (kV) = 1.00  
Cone Voltage (V) = variable (15-35)  
Desolvation Temperature ( $^{\circ}$ C) = 500  
Desolvation Gas Flow (L/hr) = 1000

**Figure 2: PFAC-MXG; LC/MS/MS Data (Selected MRM Transitions)****Conditions for Figure 2:**

Injection: On-column (PFAC-MXG)

Mobile phase: Same as Figure 1

Flow: 300  $\mu$ L/min**MS Parameters:**

Collision Gas (mbar) = 3.33e-3

Collision Energy (eV) = 8-48 (variable)



# Analytical Standard Record

**22F0061**

Description:	PFAS - MIX MXG 2ug/mL	Expires:	02/22/2027
Standard Type:	Other	Prepared:	02/07/2022
Solvent:	MeOH	Prepared By:	Lizbeth Andres
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	09/15/2022 09:34 by DAG
Comments:	contains NFDHA PFMBA PFMPA PFEESA @ 2ug/mL		

Analyte	Parent	CAS Number	Concentration	Units
NFDHA		151772-58-6	2	ug/mL
PFEESA		113507-82-7	1.78	ug/mL
PFMBA		863090-89-5	2	ug/mL
PFMPA		377-73-1	2	ug/mL

# Analytical Standard Record

**22F0445**

Description:	TDCA 1000ug/mL	Expires:	09/19/2023
Standard Type:	Other	Prepared:	01/12/2022
Solvent:	62097	Prepared By:	Dipti Gokal
Final Volume (mls):	25	Department:	PFAS
Vials:	1	Last Edit:	11/14/2022 14:31 by DAG

Analyte	Parent	CAS Number	Concentration	Units
TAURODEOXYCHOLIC ACID	22A0123	516-50-7	1000	ug/mL

### Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22A0123	PFAS Taurodeoxycholic Acid, Sodium Salt neat	10/09/2021	Calbiochem	3761825	09/30/2023	06/22/2022 13:01 by DAG	25000

# Analytical Standard Record

**22F0446**

Description:	TCDA 100ug/mL	Expires:	09/19/2023
Standard Type:	Other	Prepared:	01/13/2022
Solvent:	62097	Prepared By:	Dipti Gokal
Final Volume (mls):	3	Department:	PFAS
Vials:	1	Last Edit:	06/22/2022 13:05 by DAG

Analyte	Parent	CAS Number	Concentration	Units
TAURODEOXYCHOLIC ACID	22F0445	516-50-7	100	ug/mL

### Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22F0445	TCDA 1000ug/mL	01/12/2022	Calbiochem	3761825	09/19/2023	06/22/2022 13:05 by DAG	0.3



# Analytical Standard Record

**22I0153**

Description:	PFAS - MIX 1633 200ng/mL	Expires:	01/11/2025
Standard Type:	Analyte Spike	Prepared:	09/13/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	6	Department:	PFAS
Vials:	1	Last Edit:	09/15/2022 09:34 by DAG

Analyte	Parent	CAS Number	Concentration	Units
NMeFOSE	22C0307	24448-09-7	0.8	ug/mL
3:3FTCA	22C0308	113507-82-7	0.8	ug/mL
5:3FTCA	22C0309	914637-49-3	0.8	ug/mL
NEtFOSE	22C0310	1691-99-2	0.8	ug/mL
7:3FTCA	22C0311	812-70-4	0.8	ug/mL
NMeFOSA	22C0312	31506-32-8	0.8	ug/mL
NEtFOSA	22C0313	4151-50-2	0.8	ug/mL
11CL-PF3OUDS	22F0058	763051-92-9	0.378	ug/mL
9CL-PF3ONS	22F0058	756426-58-1	0.374	ug/mL
ADONA	22F0058	919005-14-4	0.378	ug/mL
HFPO-DA	22F0058	13252-13-6	0.4	ug/mL
4:2FTS	22F0059	757124-72-4	0.75	ug/mL
6:2FTS	22F0059	27619-97-2	0.76	ug/mL
8:2FTS	22F0059	39108-34-4	0.768	ug/mL
NEtFOSAA	22F0059	2991-50-6	0.2	ug/mL
NMeFOSAA	22F0059	2355-31-9	0.2	ug/mL
PFBA	22F0059	375-22-4	0.8	ug/mL
PFBS	22F0059	375-73-5	0.177	ug/mL
PFDA	22F0059	335-76-2	0.2	ug/mL
PFDOA	22F0059	307-55-1	0.2	ug/mL
PFDOS	22F0059	79780-39-5	0.194	ug/mL
PFDS	22F0059	335-77-3	0.193	ug/mL
PFHPA	22F0059	375-85-9	0.2	ug/mL
PFHPS	22F0059	375-92-8	0.191	ug/mL
PFHXA	22F0059	307-24-4	0.2	ug/mL
PFHXS	22F0059	355-46-4	0.183	ug/mL
PFNA	22F0059	375-95-1	0.2	ug/mL
PFNS	22F0059	68259-12-1	0.192	ug/mL
PFOA	22F0059	335-67-1	0.2	ug/mL
PFOS	22F0059	1763-23-1	0.186	ug/mL
PFOSA	22F0059	754-91-6	0.2	ug/mL
PFPEA	22F0059	2706-90-3	0.4	ug/mL
PFPEs	22F0059	630402-22-1	0.188	ug/mL
PFTEDA	22F0059	376-06-7	0.2	ug/mL
PFTRDA	22F0059	72629-94-8	0.2	ug/mL
PFUnA	22F0059	2058-94-8	0.2	ug/mL
NFDHA	22F0061	151772-58-6	0.4	ug/mL
PFEESA	22F0061	113507-82-7	0.356	ug/mL
PFMBA	22F0061	863090-89-5	0.4	ug/mL
PFMPA	22F0061	377-73-1	0.4	ug/mL

# Analytical Standard Record

22I0153

**Parent Standards used:**

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
22C0307	PFAS - SAS N-MeFOSE 50ug/mL	03/15/2022	Wellington Laboratories	NMeFOSE0921M	09/23/2026	03/15/2022 15:59	by DAG	0.096
22C0308	PFAS - SAS FPrPA 50ug/mL	03/15/2022	Wellington Laboratories	FPrPA0122	02/03/2027	03/15/2022 15:59	by DAG	0.096
22C0309	PFAS - SAS FPePA 50ug/mL	03/15/2022	Wellington Laboratories	FPePA1221	01/05/2027	03/15/2022 15:59	by DAG	0.096
22C0310	PFAS - SAS NEtFOSE 50ug/mL	03/15/2022	Wellington Laboratories	NEtFOSE0921M	09/23/2026	03/15/2022 15:59	by DAG	0.096
22C0311	PFAS - SAS FHpPA 50ug/mL	03/15/2022	Wellington Laboratories	HHpPA1020	11/12/2025	03/15/2022 16:00	by DAG	0.096
22C0312	PFAS - SAS NMeFOSA 50ug/mL	03/15/2022	Wellington Laboratories	NMeFOSA0721M	08/03/2026	03/15/2022 16:00	by DAG	0.096
22C0313	PFAS - SAS NEtFOSA 50ug/mL	03/15/2022	Wellington Laboratories	NEtFOSA0821M	08/12/2026	08/17/2022 10:49	by LYA	0.096
22F0058	PFAS - MIX MXF 2ug/mL	01/10/2022	Wellington Laboratories	PFACMXF0122	01/11/2025	09/15/2022 09:32	by DAG	1.2
22F0059	PFAS - MIX MXH 2ug/mL	09/09/2021	Wellington Laboratories	PFACMXH0921	09/14/2026	09/15/2022 09:33	by DAG	1.2
22F0061	PFAS - MIX MXG 2ug/mL	02/07/2022	Wellington Laboratories	PFACMXG0222	02/22/2027	09/15/2022 09:34	by DAG	1.2

# Analytical Standard Record

**22J0297**

Description:	T-PFOA	Expires:	01/27/2027
Standard Type:	Other	Prepared:	01/27/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1	Department:	PFOA0122)
Vials:	1	Last Edit:	10/18/2022 12:59 by HGH

Analyte	Parent	CAS Number	Concentration	Units
PFOA		335-67-1	50	ug/mL



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** T-PFOA **LOT NUMBER:** TPFOA0122  
**COMPOUND:** Ammonium perfluorooctanoate (Technical Grade)  
**STRUCTURE:** (see Table A) **CAS #:** 3825-26-1  
 (for linear ammonium perfluorooctanoate)  
**MOLECULAR FORMULA:**  $C_8F_{15}O_2NH_4$   
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/mL}$  (gravimetric)  
**CHEMICAL PURITY:** Technical material  
**SOLVENT(S):** Methanol/Water (<1%)  
**LAST TESTED:** (mm/dd/yyyy) 01/27/2022  
**EXPIRY DATE:** (mm/dd/yyyy) 01/27/2027  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition  
 Figure 1: LC/MS Data (Full Scan and Mass Spectrum)  
 Figure 2: LC/MS Data (SIR)  
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)  
 Figure 4: LC/MS Elution Profile of the Perfluorooctanoic Acid Isomers

### ADDITIONAL INFORMATION:

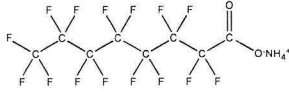
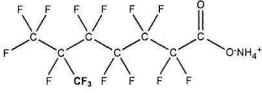
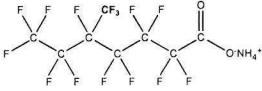
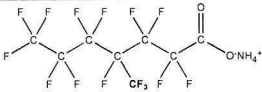
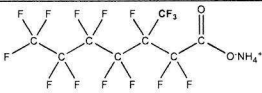
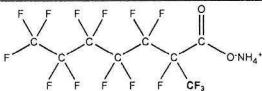
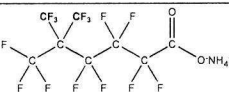
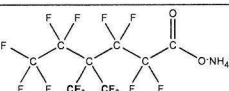
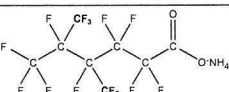
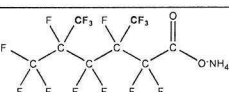
- See page 2 for further details.
- This technical mixture is >97% ammonium perfluorooctanoate (branched and linear isomers). The remaining 3% consists of common impurities such as the perfluoroheptanoic and perfluorohexanoic acids.
- It is recommended that this solution be used as a *qualitative or semi-quantitative standard only*.
- Contains 4 mole eq. of NaOH to prevent conversion of any carboxylic acids to their corresponding methyl esters.
- The molecular weight of perfluoro-n-octanoic acid is 414.07 g/mol.

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**Certified By:**   
 B.G. Chittim, General Manager **Date:** 01/27/2022  
 (mm/dd/yyyy)

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**Table A: T-PFOA; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR
1	Ammonium perfluoro-n-octanoate		79
2	Ammonium 6-trifluoromethylperfluoroheptanoate		9.0
3	Ammonium 5-trifluoromethylperfluoroheptanoate		4.5
4	Ammonium 4-trifluoromethylperfluoroheptanoate		4.0
5	Ammonium 3-trifluoromethylperfluoroheptanoate		3.0
6	Ammonium 2-trifluoromethylperfluoroheptanoate		
7	Ammonium 5,5-bis(trifluoromethyl)perfluorohexanoate		
8	Ammonium 4,4-bis(trifluoromethyl)perfluorohexanoate		0.50
9	Ammonium 4,5-bis(trifluoromethyl)perfluorohexanoate		
10	Ammonium 3,5-bis(trifluoromethyl)perfluorohexanoate		

\* Percent Composition was determined by <sup>19</sup>F-NMR. The percentages displayed are of total ammonium perfluorooctanoate isomers only (isomers are labelled in Figure 4).

# Analytical Standard Record

**22J0298**

Description:	br-FOSA	Expires:	10/07/2027
Standard Type:	Other	Prepared:	09/14/2022
Solvent:	Isopropanol	Prepared By:	Wellington Laboratories (Lot#: PFOSA0922)
Final Volume (mls):	1	Department:	PFOSA
Vials:	1	Last Edit:	10/18/2022 13:03 by HGH

Analyte	Parent	CAS Number	Concentration	Units
PFOSA		754-91-6	50	ug/mL



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### br-FOSA

#### Perfluorooctanesulfonamide Isomeric Mix

<b><u>PRODUCT CODE:</u></b>	br-FOSA
<b><u>LOT NUMBER:</u></b>	brFOSA0922
<b><u>CONCENTRATION:</u></b>	50.0 ± 2.5 µg/mL
<b><u>SOLVENT(S):</u></b>	Isopropanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	09/14/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	10/07/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	10/07/2027
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

### DESCRIPTION:

The chemical purity has been determined to be ≥98% perfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

### DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by <sup>19</sup>F-NMR  
 Figure 1: LC/MS Data (Full Scan and Mass Spectrum)  
 Figure 2: LC/MS Data (SIR)  
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 754-91-6 (for linear isomer).

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**Table A: br-FOSA; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR
1	Perfluoro-1-octanesulfonamide	CF <sub>3</sub> (CF <sub>2</sub> ) <sub>7</sub> SO <sub>2</sub> NH <sub>2</sub>	66.6
2	Perfluoro-1-methyl-1-heptanesulfonamide**	CF <sub>3</sub> (CF <sub>2</sub> ) <sub>5</sub> CF(SO <sub>2</sub> NH <sub>2</sub> )   CF <sub>3</sub>	0.8
3	Perfluoro-2-methyl-1-heptanesulfonamide	CF <sub>3</sub> (CF <sub>2</sub> ) <sub>4</sub> CF(CF <sub>3</sub> )SO <sub>2</sub> NH <sub>2</sub>   CF <sub>3</sub>	0.3
4	Perfluoro-3-methyl-1-heptanesulfonamide	CF <sub>3</sub> (CF <sub>2</sub> ) <sub>3</sub> CF(CF <sub>3</sub> ) <sub>2</sub> SO <sub>2</sub> NH <sub>2</sub>   CF <sub>3</sub>	4.2
5	Perfluoro-4-methyl-1-heptanesulfonamide	CF <sub>3</sub> (CF <sub>2</sub> ) <sub>2</sub> CF(CF <sub>3</sub> ) <sub>2</sub> SO <sub>2</sub> NH <sub>2</sub>   CF <sub>3</sub>	3.5
6	Perfluoro-5-methyl-1-heptanesulfonamide	CF <sub>3</sub> CF <sub>2</sub> CF(CF <sub>3</sub> ) <sub>4</sub> SO <sub>2</sub> NH <sub>2</sub>   CF <sub>3</sub>	7.8
7	Perfluoro-6-methyl-1-heptanesulfonamide	CF <sub>3</sub> CF(CF <sub>3</sub> ) <sub>5</sub> SO <sub>2</sub> NH <sub>2</sub>   CF <sub>3</sub>	16.8
8	Perfluoro-5,5-dimethyl-1-hexanesulfonamide	CF <sub>3</sub>   CF <sub>3</sub> C(CF <sub>3</sub> ) <sub>4</sub> SO <sub>2</sub> NH <sub>2</sub>   CF <sub>3</sub>	0.2

\* Percent of total perfluorooctanesulfonamide isomers only.

\*\* Systematic Name: Perfluoro-2-octanesulfonamide.

Certified By:   
B.G. Chittim, General Manager

Date: 11/15/2022  
(mm/dd/yyyy)



# Analytical Standard Record

**22J0298**

Description:	br-FOSA	Expires:	10/07/2027
Standard Type:	Other	Prepared:	09/14/2022
Solvent:	Isopropanol	Prepared By:	Wellington Laboratories (Lot#: PFOSA0922)
Final Volume (mls):	1	Department:	PFOSA
Vials:	1	Last Edit:	10/18/2022 13:03 by HGH

Analyte	Parent	CAS Number	Concentration	Units
PFOSA		754-91-6	50	ug/mL

# Analytical Standard Record

**22J0301**

Description:	br-NMeFOSA	Expires:	08/23/2027
Standard Type:	Other	Prepared:	08/23/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: br-NMeFOSA0822)
Final Volume (mls):	1	Department:	
Vials:	1	Last Edit:	10/18/2022 13:37 by HGH

Analyte	Parent	CAS Number	Concentration	Units
NMeFOSA		31506-32-8	50	ug/mL



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DOCUMENTATION

**br-NMeFOSA**

**N-Methylperfluorooctanesulfonamide**  
**Isomeric Mix**

<b><u>PRODUCT CODE:</u></b>	br-NMeFOSA
<b><u>LOT NUMBER:</u></b>	brNMeFOSA0822
<b><u>CONCENTRATION:</u></b>	50.0 ± 2.5 µg/mL
<b><u>SOLVENT(S):</u></b>	Methanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	08/18/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	08/23/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	08/23/2027
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoule in a cool, dark place

**DESCRIPTION:**

The chemical purity has been determined to be ≥98% N-methylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Isomeric Components and Percent Composition by <sup>19</sup>F-NMR  
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)  
Figure 2: LC/MS Data (SIR)  
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- CAS #: 31506-32-8 (for linear isomer).

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# Analytical Standard Record

<b>22J0301</b>
----------------

Description:	br-NMeFOSA	Expires:	08/23/2027
Standard Type:	Other	Prepared:	08/23/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: br-NMeFOSA0822)
Final Volume (mls):	1	Department:	
Vials:	1	Last Edit:	10/18/2022 13:37 by HGH

Analyte	Parent	CAS Number	Concentration	Units
NMeFOSA		31506-32-8	50	ug/mL

# Analytical Standard Record

**22J0302**

Description:	br-NETFOSEA	Expires:	10/07/2027
Standard Type:	Other	Prepared:	10/07/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: NETFOSEA0922)
Final Volume (mls):	1	Department:	NETFOSEA
Vials:	1	Last Edit:	10/18/2022 13:38 by HGH

Analyte	Parent	CAS Number	Concentration	Units
NETFOSEA		4151-50-2	50	ug/mL



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DOCUMENTATION

**br-NEtFOSA**

**N-Ethylperfluorooctanesulfonamide**  
**Isomeric Mix**

<b><u>PRODUCT CODE:</u></b>	br-NEtFOSA
<b><u>LOT NUMBER:</u></b>	brNEtFOSA0922
<b><u>CONCENTRATION:</u></b>	50.0 ± 2.5 µg/mL
<b><u>SOLVENT(S):</u></b>	Methanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	08/23/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	10/07/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	10/07/2027
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoule in a cool, dark place

**DESCRIPTION:**

The chemical purity has been determined to be ≥98% N-ethylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Isomeric Components and Percent Composition by <sup>19</sup>F-NMR  
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)  
Figure 2: LC/MS Data (SIR)  
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- CAS #: 4151-50-2 (for linear isomer).

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**Table A: br-NEtFOSA; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR
1	N-Ethylperfluoro-1-octanesulfonamide	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NH} \\   \\ \text{CH}_2\text{CH}_3 \end{array}$	73.8
2	N-Ethylperfluoro-1-methyl-1-heptanesulfonamide**	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_5\text{CF}\text{SO}_2\text{NH} \\   \quad   \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	0.1
3	N-Ethylperfluoro-3-methyl-1-heptanesulfonamide	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NH} \\   \quad   \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	2.3
4	N-Ethylperfluoro-4-methyl-1-heptanesulfonamide	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NH} \\   \quad   \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	2.6
5	N-Ethylperfluoro-5-methyl-1-heptanesulfonamide	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NH} \\   \quad   \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	6.2
6	N-Ethylperfluoro-6-methyl-1-heptanesulfonamide	$\begin{array}{c} \text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NH} \\   \quad   \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	14.8
7	N-Ethylperfluoro-5,5-dimethyl-1-hexanesulfonamide	$\begin{array}{c} \text{CF}_3 \\   \\ \text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NH} \\   \quad   \\ \text{CF}_3 \quad \text{CH}_2\text{CH}_3 \end{array}$	0.2

\* Percent of total N-ethylperfluorooctanesulfonamide isomers only.

\*\* Systematic Name: N-Ethylperfluoro-2-octanesulfonamide.

Certified By:   
B.G. Chittim, General Manager

Date: 11/15/2022  
(mm/dd/yyyy)



# Analytical Standard Record

**22J0303**

Description:	br-NMeFOSE	Expires:	10/07/2027
Standard Type:	Other	Prepared:	10/07/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: br-NMeFOSE0922)
Final Volume (mls):	1	Department:	
Vials:	1	Last Edit:	10/18/2022 13:41 by HGH

Analyte	Parent	CAS Number	Concentration	Units
NETFOSE		1691-99-2	50	ug/mL



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**br-NMeFOSE**

**2-(N-Methylperfluorooctanesulfonamido)ethanol  
Isomeric Mix**

<b><u>PRODUCT CODE:</u></b>	br-NMeFOSE
<b><u>LOT NUMBER:</u></b>	brNMeFOSE0922
<b><u>CONCENTRATION:</u></b>	50.0 ± 2.5 µg/mL
<b><u>SOLVENT(S):</u></b>	Methanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	09/02/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	09/07/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	10/07/2027
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoule in a cool, dark place

**DESCRIPTION:**

The chemical purity has been determined to be ≥98% 2-(N-methylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Isomeric Components and Percent Composition by <sup>19</sup>F-NMR  
 Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)  
 Figure 2: LC/MS Data (Full Scan and Mass Spectrum)  
 Figure 3: LC/MS Data (SIR)  
 Figure 4: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- CAS #: 24448-09-7 (for linear isomer).

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**Table A: br-NMeFOSE; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR
1	2-(N-Methylperfluoro-1-octanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad  $ $\quad \quad \quad \text{CH}_3$	67.6
2	2-(N-Methylperfluoro-3-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	3.9
3	2-(N-Methylperfluoro-4-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	3.2
4	2-(N-Methylperfluoro-5-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	7.7
5	2-(N-Methylperfluoro-6-methyl-1-heptanesulfonamido)ethanol	$\text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $\quad \quad \quad   \quad \quad \quad  $ $\quad \quad \quad \text{CF}_3 \quad \quad \quad \text{CH}_3$	17.5
6	2-(N-Methylperfluoro-5,5-dimethyl-1-hexanesulfonamido)ethanol	$\text{CF}_3$ $ $ $\text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH}$ $  \quad \quad \quad  $ $\text{CF}_3 \quad \quad \quad \text{CH}_3$	0.2

\* Percent of total 2-(N-methylperfluorooctanesulfonamido)ethanol isomers only.

Certified By: \_\_\_\_\_

B.G. Chittim, General Manager

Date: 11/14/2022

(mm/dd/yyyy)

# Analytical Standard Record

**22J0304**

Description:	br-NETFOSE	Expires:	10/07/2027
Standard Type:	Other	Prepared:	10/07/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: NETFOSE1022)
Final Volume (mls):	1	Department:	PPAS
Vials:	1	Last Edit:	10/18/2022 13:43 by HGH

Analyte	Parent	CAS Number	Concentration	Units
NETFOSE		1691-99-2	50	ug/mL



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DOCUMENTATION

**br-NEtFOSE**

**2-(N-Ethylperfluorooctanesulfonamido)ethanol**  
**Isomeric Mix**

<b><u>PRODUCT CODE:</u></b>	br-NEtFOSE
<b><u>LOT NUMBER:</u></b>	brNEtFOSE1022
<b><u>CONCENTRATION:</u></b>	50.0 ± 2.5 µg/mL
<b><u>SOLVENT(S):</u></b>	Methanol
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	09/12/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	09/12/2022 (HRGC/LRMS) 10/07/2022 (LC/MS)
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	10/07/2027
<b><u>RECOMMENDED STORAGE:</u></b>	Store ampoule in a cool, dark place

**DESCRIPTION:**

The chemical purity has been determined to be ≥98% 2-(N-ethylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Isomeric Components and Percent Composition by <sup>19</sup>F-NMR  
 Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)  
 Figure 2: LC/MS Data (Full Scan and Mass Spectrum)  
 Figure 3: LC/MS Data (SIR)  
 Figure 4: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- CAS #: 1691-99-2 (for linear isomer).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
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**Table A: br-NEtFOSE; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Compound	Structure	Percent Composition by <sup>19</sup> F-NMR
1	2-(N-Ethylperfluoro-1-octanesulfonamido)ethanol	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_7\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH} \\   \\ \text{CH}_2\text{CH}_3 \end{array}$	64.6
2	2-(N-Ethylperfluoro-2-methyl-1-heptanesulfonamido)ethanol	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_4\text{CF}(\text{CF}_2)\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{CH}_2\text{CH}_3 \end{array}$	0.2
3	2-(N-Ethylperfluoro-3-methyl-1-heptanesulfonamido)ethanol	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_3\text{CF}(\text{CF}_2)_2\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{CH}_2\text{CH}_3 \end{array}$	4.1
4	2-(N-Ethylperfluoro-4-methyl-1-heptanesulfonamido)ethanol	$\begin{array}{c} \text{CF}_3(\text{CF}_2)_2\text{CF}(\text{CF}_2)_3\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{CH}_2\text{CH}_3 \end{array}$	4.3
5	2-(N-Ethylperfluoro-5-methyl-1-heptanesulfonamido)ethanol	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{CH}_2\text{CH}_3 \end{array}$	8.8
6	2-(N-Ethylperfluoro-6-methyl-1-heptanesulfonamido)ethanol	$\begin{array}{c} \text{CF}_3\text{CF}(\text{CF}_2)_5\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{CH}_2\text{CH}_3 \end{array}$	17.8
7	2-(N-Ethylperfluoro-5,5-dimethyl-1-hexanesulfonamido)ethanol	$\begin{array}{c} \text{CF}_3 \\   \\ \text{CF}_3\text{C}(\text{CF}_2)_4\text{SO}_2\text{NCH}_2\text{CH}_2\text{OH} \\   \qquad \qquad   \\ \text{CF}_3 \qquad \qquad \text{CH}_2\text{CH}_3 \end{array}$	0.3

\* Percent of total 2-(N-ethylperfluorooctanesulfonamido)ethanol isomers only.

Certified By:   
B.G. Chittim, General Manager

Date: 11/14/2022  
(mm/dd/yyyy)

# Analytical Standard Record

22J0420

Description:	PFAS RES-MIX 1000ng/mL	Expires:	04/24/2023
Standard Type:	Other	Prepared:	10/26/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	10/26/2022 10:16 by HGH

Analyte	Parent	CAS Number	Concentration	Units
PFOA	22J0297	335-67-1	1	ug/mL
PFOSA	22J0298	754-91-6	1	ug/mL
NMeFOSA	22J0301	31506-32-8	1	ug/mL
NEtFOSA	22J0302	4151-50-2	1	ug/mL
NMeFOSE	22J0303	24448-09-7	1	ug/mL
NEtFOSE	22J0304	1691-99-2	1	ug/mL

### Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22J0297	T-PFOA	01/27/2022	Wellington Laboratories	TPFOA0122	01/27/2027	10/18/2022 12:59	by HGH 0.02
22J0298	br-FOSA	09/14/2022	Wellington Laboratories	br-FOSA0922	10/07/2027	10/18/2022 13:03	by HGH 0.02
22J0301	br-NMeFOSA	08/23/2022	Wellington Laboratories	beNMeFOSA0822	08/23/2027	10/18/2022 13:37	by HGH 0.02
22J0302	br-NEtFOSA	10/07/2022	Wellington Laboratories	beNEtFOSA0922	10/07/2027	10/18/2022 13:38	by HGH 0.02
22J0303	br-NMeFOSE	10/07/2022	Wellington Laboratories	beNMeFOSE0922	10/07/2027	10/26/2022 10:16	by HGH 0.02
22J0304	br-NEtFOSE	10/07/2022	Wellington Laboratories	beNEtFOSE1022	10/07/2027	10/18/2022 13:43	by HGH 0.02

# Analytical Standard Record

**22J0448**

Description:	PFAS - MIX 1633 20ng/mL	Expires:	04/25/2023
Standard Type:	Analyte Spike	Prepared:	10/27/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	10	Department:	PFAS
Vials:	1	Last Edit:	10/27/2022 08:51 by DAG

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS	22I0153	763051-92-9	0.0378	ug/mL
3:3FTCA	22I0153	113507-82-7	0.08	ug/mL
4:2FTS	22I0153	757124-72-4	0.075	ug/mL
5:3FTCA	22I0153	914637-49-3	0.08	ug/mL
6:2FTS	22I0153	27619-97-2	0.076	ug/mL
7:3FTCA	22I0153	812-70-4	0.08	ug/mL
8:2FTS	22I0153	39108-34-4	0.0768	ug/mL
9CL-PF3ONS	22I0153	756426-58-1	0.0374	ug/mL
ADONA	22I0153	919005-14-4	0.0378	ug/mL
HFPO-DA	22I0153	13252-13-6	0.04	ug/mL
NETFOSA	22I0153	4151-50-2	0.08	ug/mL
NETFOSAA	22I0153	2991-50-6	0.02	ug/mL
NETFOSE	22I0153	1691-99-2	0.08	ug/mL
NFDHA	22I0153	151772-58-6	0.04	ug/mL
NMeFOSA	22I0153	31506-32-8	0.08	ug/mL
NMeFOSAA	22I0153	2355-31-9	0.02	ug/mL
NMeFOSE	22I0153	24448-09-7	0.08	ug/mL
PFBA	22I0153	375-22-4	0.08	ug/mL
PFBS	22I0153	375-73-5	0.0177	ug/mL
PFDA	22I0153	335-76-2	0.02	ug/mL
PFDOA	22I0153	307-55-1	0.02	ug/mL
PFDOS	22I0153	79780-39-5	0.0194	ug/mL
PFDS	22I0153	335-77-3	0.0193	ug/mL
PFEESA	22I0153	113507-82-7	0.0356	ug/mL
PFHPA	22I0153	375-85-9	0.02	ug/mL
PFHPS	22I0153	375-92-8	0.0191	ug/mL
PFHXA	22I0153	307-24-4	0.02	ug/mL
PFHXS	22I0153	355-46-4	0.0183	ug/mL
PFMBA	22I0153	863090-89-5	0.04	ug/mL
PFMPA	22I0153	377-73-1	0.04	ug/mL
PFNA	22I0153	375-95-1	0.02	ug/mL
PFNS	22I0153	68259-12-1	0.0192	ug/mL
PFOA	22I0153	335-67-1	0.02	ug/mL
PFOS	22I0153	1763-23-1	0.0186	ug/mL
PFOSA	22I0153	754-91-6	0.02	ug/mL
PFPEA	22I0153	2706-90-3	0.04	ug/mL
PFPEs	22I0153	630402-22-1	0.0188	ug/mL
PFTEDA	22I0153	376-06-7	0.02	ug/mL
PFTRDA	22I0153	72629-94-8	0.02	ug/mL
PFUnA	22I0153	2058-94-8	0.02	ug/mL



# Analytical Standard Record

**22J0448****Parent Standards used:**

<b>Standard</b>	<b>Description</b>	<b>Prepared</b>	<b>Prepared By</b>	<b>Lot Nbr</b>	<b>Expires</b>	<b>Last Edit</b>	<b>(mls)</b>
22I0153	PFAS - MIX 1633 200ng/mL	09/13/2022	In house	x	01/11/2025	09/15/2022 09:34 by DAG	1

# Analytical Standard Record

**22K0180**

Description:	PFAS - MIX MXF 2 ug/mL	Expires:	01/11/2025
Standard Type:	Analyte Spike	Prepared:	01/10/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFAS <sup>MXF0122</sup> )
Vials:	1	Last Edit:	11/08/2022 13:30 by ABK

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS		763051-92-9	1.89	ug/mL
9CL-PF3ONS		756426-58-1	1.87	ug/mL
ADONA		919005-14-4	1.89	ug/mL
HFPO-DA		13252-13-6	2	ug/mL

# Analytical Standard Record

**22K0181**

Description:	PFAS - MIX MXG 2 ug/mL	Expires:	02/22/2027
Standard Type:	Analyte Spike	Prepared:	02/07/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFASMXG0222)
Vials:	1	Last Edit:	11/08/2022 13:31 by ABK

Analyte	Parent	CAS Number	Concentration	Units
NFDHA		151772-58-6	2	ug/mL
PFEESA		113507-82-7	1.78	ug/mL
PFMBA		863090-89-5	2	ug/mL
PFMPA		377-73-1	2	ug/mL

# Analytical Standard Record

**22K0182**

Description:	PFAS - MIX MXH 1 ug/mL	Expires:	08/08/2027
Standard Type:	Analyte Spike	Prepared:	08/05/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFAS <sup>CMXH0822</sup> )
Vials:	1	Last Edit:	11/08/2022 13:35 by ABK

Analyte	Parent	CAS Number	Concentration	Units
4:2FTS		757124-72-4	3.75	ug/mL
6:2FTS		27619-97-2	3.8	ug/mL
8:2FTS		39108-34-4	3.84	ug/mL
NETFOSAA		2991-50-6	1	ug/mL
NMeFOSAA		2355-31-9	1	ug/mL
PFBA		375-22-4	4	ug/mL
PFBS		375-73-5	0.887	ug/mL
PFDA		335-76-2	1	ug/mL
PFDOA		307-55-1	1	ug/mL
PFDOS		79780-39-5	0.97	ug/mL
PFDS		335-77-3	0.965	ug/mL
PFHPA		375-85-9	1	ug/mL
PFHPS		375-92-8	0.953	ug/mL
PFHXA		307-24-4	1	ug/mL
PFHXS		355-46-4	0.914	ug/mL
PFNA		375-95-1	1	ug/mL
PFNS		68259-12-1	0.962	ug/mL
PFOA		335-67-1	1	ug/mL
PFOS		1763-23-1	0.928	ug/mL
PFOSA		754-91-6	1	ug/mL
PFPEA		2706-90-3	2	ug/mL
PFPEs		630402-22-1	0.941	ug/mL
PFTEDA		376-06-7	1	ug/mL
PFTRDA		72629-94-8	1	ug/mL
PFUnA		2058-94-8	1	ug/mL

# Analytical Standard Record

**23A0022**

Description:	PFOS 0.4mg/ml	Expires:	07/03/2023
Standard Type:	Other	Prepared:	01/04/2023
Solvent:	62097	Prepared By:	Dipti Gokal
Final Volume (mls):	40	Department:	PFAS
Vials:	1	Last Edit:	01/04/2023 11:14 by DAG

Analyte	Parent	CAS Number	Concentration	Units
PFOS	23A0024	1763-23-1	400	ug/mL

### Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
23A0024	PFOS 40%	01/04/2023	Sigma-Aldrich	0000100807	11/10/2023	01/04/2023 11:14 by DAG	0.04

# Analytical Standard Record

**23A0024**

Description:	PFOS 40%	Expires:	11/10/2023
Standard Type:	Other	Prepared:	01/04/2023
Solvent:	methanol 77283	Prepared By:	Dipti Gokal
Final Volume (mls):	1	Department:	PFAS
Vials:	1	Last Edit:	01/04/2023 11:14 by DAG
Comments:	neat-77283		

<b>Analyte</b>	<b>Parent</b>	<b>CAS Number</b>	<b>Concentration</b>	<b>Units</b>
PFOS		1763-23-1	400000	ug/g

# Analytical Standard Record

23A0025

Description:	PFOS 0.4ug/ml	Expires:	07/03/2023
Standard Type:	Other	Prepared:	01/04/2023
Solvent:	62097	Prepared By:	Dipti Gokal
Final Volume (mls):	40	Department:	PFAS
Vials:	1	Last Edit:	01/04/2023 11:18 by DAG

Analyte	Parent	CAS Number	Concentration	Units
PFOS	23A0022	1763-23-1	0.4	ug/mL

### Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
23A0022	PFOS 0.4mg/ml	01/04/2023	In house	3761825	07/03/2023	01/04/2023 11:14 by DAG	0.04

# Analytical Standard Record

23A0025

Description:	PFOS 0.4ug/ml	Expires:	07/03/2023
Standard Type:	Other	Prepared:	01/04/2023
Solvent:	62097	Prepared By:	Dipti Gokal
Final Volume (mls):	40	Department:	PFAS
Vials:	1	Last Edit:	01/04/2023 11:18 by DAG

Analyte	Parent	CAS Number	Concentration	Units
PFOS	23A0022	1763-23-1	0.4	ug/mL

### Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
23A0022	PFOS 0.4mg/ml	01/04/2023	In house	3761825	07/03/2023	01/04/2023 11:14 by DAG	0.04



# Analytical Standard Record

23A0371

Description: PFAS - MIX 1633 200ng/mL  
 Standard Type: Analyte Spike  
 Solvent: MeOH 62244  
 Final Volume (mL): 5  
 Vials: 1

Expires: 07/18/2023  
 Prepared: 01/19/2023  
 Prepared By: Dipti Gokal  
 Department: PFAS  
 Last Edit: 01/19/2023 14:21 by HGH

Analyte	Parent	CAS Number	Concentration	Units
3:3FTCA	21L0004	113507-82-7	0.8	ug/mL
5:3FTCA	21L0005	914637-49-3	0.8	ug/mL
7:3FTCA	21L0007	812-70-4	0.8	ug/mL
NMeFOSA	22J0301	31506-32-8	0.8	ug/mL
NEtFOSA	22J0302	4151-50-2	0.8	ug/mL
NMeFOSE	22J0303	24448-09-7	0.8	ug/mL
NEtFOSE	22J0304	1691-99-2	0.8	ug/mL
11CL-PF3OUDS	22K0180	763051-92-9	0.378	ug/mL
9CL-PF3ONS	22K0180	756426-58-1	0.374	ug/mL
ADONA	22K0180	919005-14-4	0.378	ug/mL
HFPO-DA	22K0180	13252-13-6	0.4	ug/mL
NFDHA	22K0181	151772-58-6	0.4	ug/mL
PFEESA	22K0181	113507-82-7	0.356	ug/mL
PFMBA	22K0181	863090-89-5	0.4	ug/mL
PFMPA	22K0181	377-73-1	0.4	ug/mL
4:2FTS	22K0182	757124-72-4	0.75	ug/mL
6:2FTS	22K0182	27619-97-2	0.76	ug/mL
8:2FTS	22K0182	39108-34-4	0.768	ug/mL
NEtFOSAA	22K0182	2991-50-6	0.2	ug/mL
NMeFOSAA	22K0182	2355-31-9	0.2	ug/mL
PFBA	22K0182	375-22-4	0.8	ug/mL
PFBS	22K0182	375-73-5	0.177	ug/mL
PFDA	22K0182	335-76-2	0.2	ug/mL
PFDOA	22K0182	307-55-1	0.2	ug/mL
PFDOS	22K0182	79780-39-5	0.194	ug/mL
PFDS	22K0182	335-77-3	0.193	ug/mL
PFHPA	22K0182	375-85-9	0.2	ug/mL
PFHPS	22K0182	375-92-8	0.191	ug/mL
PFHXA	22K0182	307-24-4	0.2	ug/mL
PFHXS	22K0182	355-46-4	0.183	ug/mL
PFNA	22K0182	375-95-1	0.2	ug/mL
PFNS	22K0182	68259-12-1	0.192	ug/mL
PFOA	22K0182	335-67-1	0.2	ug/mL
PFOS	22K0182	1763-23-1	0.186	ug/mL
PFOSA	22K0182	754-91-6	0.2	ug/mL
PFPEA	22K0182	2706-90-3	0.4	ug/mL
PFPEs	22K0182	630402-22-1	0.188	ug/mL
PFTEDA	22K0182	376-06-7	0.2	ug/mL
PFTRDA	22K0182	72629-94-8	0.2	ug/mL
PFUnA	22K0182	2058-94-8	0.2	ug/mL

# Analytical Standard Record

23A0371

**Parent Standards used:**

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
21L0004	PFAS - SAS 3:3FTA 50ug/mL	12/07/2021	Wellington Laboratories	FPrPA1020	11/12/2025	10/31/2022 14:39	by DAG	0.08
21L0005	PFAS - SAS 5:3FTA 50ug/mL	12/07/2021	Wellington Laboratories	FPePA1120	11/11/2025	10/31/2022 14:41	by DAG	0.08
21L0007	PFAS - SAS 7:3FTA 50ug/mL	12/07/2021	Wellington Laboratories	FHpPA1020	11/12/2025	10/31/2022 14:42	by DAG	0.08
22J0301	br-NMeFOSA	08/23/2022	Wellington Laboratories	beNMeFOSA0822	08/23/2027	10/18/2022 13:37	by HGH	0.08
22J0302	br-NEtFOSA	10/07/2022	Wellington Laboratories	beNEtFOSA0922	10/07/2027	10/18/2022 13:38	by HGH	0.08
22J0303	br-NMeFOSE	10/07/2022	Wellington Laboratories	beNMeFOSE0922	10/07/2027	10/26/2022 10:16	by HGH	0.08
22J0304	br-NEtFOSE	10/07/2022	Wellington Laboratories	beNEtFOSE1022	10/07/2027	10/18/2022 13:43	by HGH	0.08
22K0180	PFAS - MIX MXF 2 ug/mL	01/10/2022	Wellington Laboratories	PFACMXF0122	01/11/2025	11/08/2022 16:39	by DAG	1
22K0181	PFAS - MIX MXG 2 ug/mL	02/07/2022	Wellington Laboratories	PFACMXG0222	02/22/2027	11/08/2022 16:39	by DAG	1
22K0182	PFAS - MIX MXH 1 ug/mL	08/05/2022	Wellington Laboratories	PFACMXH0822	08/08/2027	11/08/2022 16:38	by DAG	1

# Analytical Standard Record

**23A0390**

Description:	MPFAC-HIF-ES-EIS	Expires:	11/23/2025
Standard Type:	Other	Prepared:	10/28/2022
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: MPFACHIFES1022)
Final Volume (mls):	1.2	Department:	MPFACHIFES1022
Vials:	1	Last Edit:	01/23/2023 15:26 by ABK
Lot Number:	MPFACHIFES1022		

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS		13C2-4:2FTS	1	ug/mL
13C2-6:2FTS		13C2-6:2FTS	1	ug/mL
13C2-8:2FTS		13C2-8:2FTS	1	ug/mL
13C2-PFDOA		13C2-PFDOA	0.25	ug/mL
13C2-PFTEDA		13C2-PFTEDA	0.25	ug/mL
13C3-HFPO-DA		13C3-HFPO-DA	2	ug/mL
13C3-PFBS		13C3-PFBS	0.5	ug/mL
13C3-PFHXS		13C3-PFHXS	0.5	ug/mL
13C4-PFBA		13C4-PFBA	2	ug/mL
13C4-PFHHPA		13C4-PFHHPA	0.5	ug/mL
13C5-PFHXA		13C5-PFHXA	0.5	ug/mL
13C5-PFPEA		13C5-PFPEA	1	ug/mL
13C6-PFDA		13C6-PFDA	0.25	ug/mL
13C7-PFUnA		13C7-PFUDA	0.25	ug/mL
13C8-PFOA		13C8-PFOA	0.5	ug/mL
13C8-PFOS		13C8-PFOS	0.5	ug/mL
13C8-PFOSA		13C8-PFOSA	0.5	ug/mL
13C9-PFNA		13C9-PFNA	0.25	ug/mL
D3-NMEFOSA		D3-NMEFOSA	0.5	ug/mL
D3-NMEFOSAA		D3-NMEFOSAA	1	ug/mL
D5-NETFOSA		D5-NETFOSA	0.5	ug/mL
D5-NETFOSAA		D5-NETFOSAA	1	ug/mL
D7-NMEFOSE		D7-NMEFOSE	5	ug/mL
D9-NETFOSSE		D9-NETFOSSE	5	ug/mL



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### MPFAC-HIF-ES

#### Mass-Labelled PFAS Extraction Standard Solution/Mixture

<b><u>PRODUCT CODE:</u></b>	MPFAC-HIF-ES
<b><u>LOT NUMBER:</u></b>	MPFACHIFES1022
<b><u>SOLVENT(S):</u></b>	Methanol/Isopropanol (1%)/Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	10/28/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	11/23/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	11/23/2025
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

#### **DESCRIPTION:**

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled ( $^{13}\text{C}$ ) perfluoroalkylcarboxylic acids ( $\text{C}_4$ - $\text{C}_{12}$ ,  $\text{C}_{14}$ ), three mass-labelled ( $^{13}\text{C}$ ) perfluoroalkanesulfonates ( $\text{C}_4$ ,  $\text{C}_6$ , and  $\text{C}_8$ ), three mass-labelled (one  $^{13}\text{C}$  and two  $^2\text{H}$ ) perfluoro-1-octanesulfonamides, three mass-labelled ( $^{13}\text{C}$ ) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled ( $^2\text{H}$ ) perfluorooctanesulfonamidoacetic acids, two mass-labelled ( $^2\text{H}$ ) perfluorooctanesulfonamidoethanols, and mass-labelled ( $^{13}\text{C}$ ) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual  $^{13}\text{C}$ -labelled components all have chemical purities >98% and isotopic purities of  $\geq 99\%$ . The individual  $^2\text{H}$ -labelled components all have chemical purities >98% and isotopic purities of  $\geq 98\%$ .

#### **DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
Figure 1: LC/MS Data (SIR)  
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 acids to their respective methyl esters.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

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

**Table A: MPFAC-HIF-ES; Components and Concentrations**  
(ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-( <sup>13</sup> C <sub>4</sub> )butanoic acid	MPFBA	2000		1
Perfluoro-n-( <sup>13</sup> C <sub>5</sub> )pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- <sup>13</sup> C <sub>5</sub> )hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- <sup>13</sup> C <sub>4</sub> )heptanoic acid	M4PFHpA	500		7
Perfluoro-n-( <sup>13</sup> C <sub>8</sub> )octanoic acid	M8PFOA	500		10
Perfluoro-n-( <sup>13</sup> C <sub>9</sub> )nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- <sup>13</sup> C <sub>6</sub> )decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- <sup>13</sup> C <sub>7</sub> )undecanoic acid	M7PFUdA	250		18
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )dodecanoic acid	MPFDoA	250		19
Perfluoro-n-(1,2- <sup>13</sup> C <sub>2</sub> )tetradecanoic acid	M2PFTeDA	250		22
Perfluoro-1-( <sup>13</sup> C <sub>8</sub> )octanesulfonamide	M8FOSA	500		17
N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d <sub>3</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>4</sub> -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamido)ethan-d <sub>4</sub> -ol	d9-N-EtFOSE	5000		23
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)( <sup>13</sup> C <sub>3</sub> )propanoic acid	M3HFPO-DA	2000		6
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4- <sup>13</sup> C <sub>3</sub> )butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- <sup>13</sup> C <sub>3</sub> )hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-( <sup>13</sup> C <sub>8</sub> )octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )decanesulfonate	M2-8:2FTS	1000	960	13

\* Concentrations have been rounded to three significant figures.

Certified By:   
B.G. Chittim, General Manager

Date: 11/24/2022  
(mm/dd/yyyy)

# Analytical Standard Record

**23A0557**

Description:	PFAS - MIX 1633 10ng/mL	Expires:	07/30/2023
Standard Type:	Analyte Spike	Prepared:	01/31/2023
Solvent:	MeOH	Prepared By:	Andonios Karas
Final Volume (mls):	10	Department:	PFAS
Vials:	1	Last Edit:	01/31/2023 14:05 by ABK

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS	23A0371	763051-92-9	0.0189	ug/mL
3:3FTCA	23A0371	356-02-5	0.04	ug/mL
4:2FTS	23A0371	757124-72-4	0.0375	ug/mL
5:3FTCA	23A0371	914637-49-3	0.04	ug/mL
6:2FTS	23A0371	27619-97-2	0.038	ug/mL
7:3FTCA	23A0371	812-70-4	0.04	ug/mL
8:2FTS	23A0371	39108-34-4	0.0384	ug/mL
9CL-PF3ONS	23A0371	756426-58-1	0.0187	ug/mL
ADONA	23A0371	919005-14-4	0.0189	ug/mL
HFPO-DA	23A0371	13252-13-6	0.02	ug/mL
NETFOSA	23A0371	4151-50-2	0.04	ug/mL
NETFOSAA	23A0371	2991-50-6	0.01	ug/mL
NETFOSE	23A0371	1691-99-2	0.04	ug/mL
NFDHA	23A0371	151772-58-6	0.02	ug/mL
NMeFOSA	23A0371	31506-32-8	0.04	ug/mL
NMeFOSAA	23A0371	2355-31-9	0.01	ug/mL
NMeFOSE	23A0371	24448-09-7	0.04	ug/mL
PFBA	23A0371	375-22-4	0.04	ug/mL
PFBS	23A0371	375-73-5	0.00885	ug/mL
PFDA	23A0371	335-76-2	0.01	ug/mL
PFDOA	23A0371	307-55-1	0.01	ug/mL
PFDOS	23A0371	79780-39-5	0.0097	ug/mL
PFDS	23A0371	335-77-3	0.00965	ug/mL
PFEESA	23A0371	113507-82-7	0.0178	ug/mL
PFHPA	23A0371	375-85-9	0.01	ug/mL
PFHPS	23A0371	375-92-8	0.00955	ug/mL
PFHXA	23A0371	307-24-4	0.01	ug/mL
PFHXS	23A0371	355-46-4	0.00915	ug/mL
PFMBA	23A0371	863090-89-5	0.02	ug/mL
PFMPA	23A0371	377-73-1	0.02	ug/mL
PFNA	23A0371	375-95-1	0.01	ug/mL
PFNS	23A0371	68259-12-1	0.0096	ug/mL
PFOA	23A0371	335-67-1	0.01	ug/mL
PFOS	23A0371	1763-23-1	0.0093	ug/mL
PFOSA	23A0371	754-91-6	0.01	ug/mL
PFPEA	23A0371	2706-90-3	0.02	ug/mL
PFPEs	23A0371	630402-22-1	0.0094	ug/mL
PFTEDA	23A0371	376-06-7	0.01	ug/mL
PFTRDA	23A0371	72629-94-8	0.01	ug/mL
PFUnA	23A0371	2058-94-8	0.01	ug/mL

# Analytical Standard Record

**23A0557****Parent Standards used:**

<b>Standard</b>	<b>Description</b>	<b>Prepared</b>	<b>Prepared By</b>	<b>Lot Nbr</b>	<b>Expires</b>	<b>Last Edit</b>	<b>(mls)</b>
23A0371	PFAS - MIX 1633 200ng/mL	01/19/2023	In house	x	01/11/2025	01/24/2023 11:32 by DAG	0.5

# Analytical Standard Record

**23B0169**

Description:	MPFAC-HIF-ES-EIS	Expires:	08/06/2023
Standard Type:	Other	Prepared:	02/07/2023
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#: MPFACHIFES1022)
Final Volume (mls):	1.2	Department:	MPFACHIFES1022
Vials:	1	Last Edit:	02/07/2023 16:12 by ABK
Lot Number:	MPFACHIFES1022		

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS		13C2-4:2FTS	1	ug/mL
13C2-6:2FTS		13C2-6:2FTS	1	ug/mL
13C2-8:2FTS		13C2-8:2FTS	1	ug/mL
13C2-PFDOA		13C2-PFDOA	0.25	ug/mL
13C2-PFTEDA		13C2-PFTEDA	0.25	ug/mL
13C3-HFPO-DA		13C3-HFPO-DA	2	ug/mL
13C3-PFBS		13C3-PFBS	0.5	ug/mL
13C3-PFHXS		13C3-PFHXS	0.5	ug/mL
13C4-PFBA		13C4-PFBA	2	ug/mL
13C4-PFHHPA		13C4-PFHHPA	0.5	ug/mL
13C5-PFHXA		13C5-PFHXA	0.5	ug/mL
13C5-PFPEA		13C5-PFPEA	1	ug/mL
13C6-PFDA		13C6-PFDA	0.25	ug/mL
13C7-PFUnA		13C7-PFUDA	0.25	ug/mL
13C8-PFOA		13C8-PFOA	0.5	ug/mL
13C8-PFOS		13C8-PFOS	0.5	ug/mL
13C8-PFOSA		13C8-PFOSA	0.5	ug/mL
13C9-PFNA		13C9-PFNA	0.25	ug/mL
D3-NMEFOSA		D3-NMEFOSA	0.5	ug/mL
D3-NMEFOSAA		D3-NMEFOSAA	1	ug/mL
D5-NETFOSA		D5-NETFOSA	0.5	ug/mL
D5-NETFOSAA		D5-NETFOSAA	1	ug/mL
D7-NMEFOSE		D7-NMEFOSE	5	ug/mL
D9-NETFOSSE		D9-NETFOSSE	5	ug/mL





# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

### MPFAC-HIF-ES

#### Mass-Labelled PFAS Extraction Standard Solution/Mixture

<b><u>PRODUCT CODE:</u></b>	MPFAC-HIF-ES
<b><u>LOT NUMBER:</u></b>	MPFACHIFES1022
<b><u>SOLVENT(S):</u></b>	Methanol/Isopropanol (1%)/Water (<1%)
<b><u>DATE PREPARED:</u></b> (mm/dd/yyyy)	10/28/2022
<b><u>LAST TESTED:</u></b> (mm/dd/yyyy)	11/23/2022
<b><u>EXPIRY DATE:</u></b> (mm/dd/yyyy)	11/23/2025
<b><u>RECOMMENDED STORAGE:</u></b>	Refrigerate ampoule

#### **DESCRIPTION:**

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled ( $^{13}\text{C}$ ) perfluoroalkylcarboxylic acids ( $\text{C}_4$ - $\text{C}_{12}$ ,  $\text{C}_{14}$ ), three mass-labelled ( $^{13}\text{C}$ ) perfluoroalkanesulfonates ( $\text{C}_4$ ,  $\text{C}_6$ , and  $\text{C}_8$ ), three mass-labelled (one  $^{13}\text{C}$  and two  $^2\text{H}$ ) perfluoro-1-octanesulfonamides, three mass-labelled ( $^{13}\text{C}$ ) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled ( $^2\text{H}$ ) perfluorooctanesulfonamidoacetic acids, two mass-labelled ( $^2\text{H}$ ) perfluorooctanesulfonamidoethanols, and mass-labelled ( $^{13}\text{C}$ ) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

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#### **ADDITIONAL INFORMATION:**

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Perfluoro-n-( <sup>13</sup> C <sub>8</sub> )octanoic acid	M8PFOA	500		10
Perfluoro-n-( <sup>13</sup> C <sub>9</sub> )nonanoic acid	M9PFNA	250		11
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N-ethyl-d <sub>5</sub> -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
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Sodium 1H,1H,2H,2H-perfluoro-(1,2- <sup>13</sup> C <sub>2</sub> )decanesulfonate	M2-8:2FTS	1000	960	13

\* Concentrations have been rounded to three significant figures.

Certified By:   
B.G. Chittim, General Manager

Date: 11/24/2022  
(mm/dd/yyyy)