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NELAP Certification Number: CA00046
DoD-ELAP Certification Number 4064.01
State Certification Number:

December 22, 2022

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

RE: Red Hill AFFF Assessment Sampling
22L0127

Enclosed are the results of analyses for samples received by our laboratory on 12/16/2022. 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,

Greg Salata For Gregory Salata
Project Manager

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

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Data Validatable Report

Analysis Case Narrative

PFAS: 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 analyte PFDoA recovered above the upper control limit in SB03903-LCV1.

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
22L0127-01	AF-RHMW04-WGN01B-2212W2	Water	12/15/2022 11:20	12/16/2022
22L0127-02	AF-RHMW10-WGN01B-2212W2	Water	12/15/2022 15:35	12/16/2022

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

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Containers Received

Lab ID	Container Type	Count	Preservation Check
22L0127-01	500mL P	2	
22L0127-02	500mL P	2	

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

Reported: 12/22/2022 07:17

Sample Results

Sample: AF-RHMW04-WGN01B-2212W2
22L0127-01 (Water)

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	2.2	1.4	0.72	0.19	ng/L	12/20/22	1	EPA 1633	BBL0355
PFPEA	1.1	0.72	0.36	0.059	ng/L	12/20/22	1	EPA 1633	BBL0355
PFHXA	0.46 IR2	0.36	0.18	0.050	ng/L	12/20/22	1	EPA 1633	BBL0355
PFHPA	0.45	0.36	0.18	0.037	ng/L	12/20/22	1	EPA 1633	BBL0355
PFOA	0.14 J	0.36	0.18	0.14	ng/L	12/20/22	1	EPA 1633	BBL0355
PFNA	0.18 U	0.36	0.18	0.074	ng/L	12/20/22	1	EPA 1633	BBL0355
PFDA	0.18 U	0.36	0.18	0.091	ng/L	12/20/22	1	EPA 1633	BBL0355
PFUnA	0.18 U	0.36	0.18	0.14	ng/L	12/20/22	1	EPA 1633	BBL0355
PFDOA	0.18 U	0.36	0.18	0.10	ng/L	12/20/22	1	EPA 1633	BBL0355
PFTRDA	0.27 U	0.36	0.27	0.18	ng/L	12/20/22	1	EPA 1633	BBL0355
PFTEDA	0.18 U	0.36	0.18	0.18	ng/L	12/20/22	1	EPA 1633	BBL0355
PFBS	0.18 U	0.36	0.18	0.033	ng/L	12/20/22	1	EPA 1633	BBL0355
PFPEs	0.18 U	0.36	0.18	0.057	ng/L	12/20/22	1	EPA 1633	BBL0355
PFHXS	0.18 U	0.36	0.18	0.029	ng/L	12/20/22	1	EPA 1633	BBL0355
PFHPS	0.18 U	0.36	0.18	0.046	ng/L	12/20/22	1	EPA 1633	BBL0355
PFOS	0.18 U	0.36	0.18	0.057	ng/L	12/20/22	1	EPA 1633	BBL0355
PFNS	0.18 U	0.36	0.18	0.11	ng/L	12/20/22	1	EPA 1633	BBL0355
PFDS	0.18 U	0.36	0.18	0.14	ng/L	12/20/22	1	EPA 1633	BBL0355
PFDOS	0.18 U	0.36	0.18	0.11	ng/L	12/20/22	1	EPA 1633	BBL0355
4:2FTS	0.72 U	1.4	0.72	0.26	ng/L	12/20/22	1	EPA 1633	BBL0355
6:2FTS	9.6	1.4	0.72	0.28	ng/L	12/20/22	1	EPA 1633	BBL0355
8:2FTS	0.72 U	1.4	0.72	0.074	ng/L	12/20/22	1	EPA 1633	BBL0355
PFOSA	0.18 U	0.36	0.18	0.094	ng/L	12/20/22	1	EPA 1633	BBL0355
NMeFOSA	0.72 U	1.4	0.72	0.43	ng/L	12/20/22	1	EPA 1633	BBL0355
NEtFOSA	0.72 U	1.4	0.72	0.37	ng/L	12/20/22	1	EPA 1633	BBL0355
NMeFOSAA	0.18 U	0.36	0.18	0.095	ng/L	12/20/22	1	EPA 1633	BBL0355
NEtFOSAA	0.18 U	0.36	0.18	0.10	ng/L	12/20/22	1	EPA 1633	BBL0355
NMeFOSE	1.1 U	1.4	1.1	0.91	ng/L	12/20/22	1	EPA 1633	BBL0355
NEtFOSE	1.1 U	1.4	1.1	0.94	ng/L	12/20/22	1	EPA 1633	BBL0355
HFPO-DA	0.36 U	0.72	0.36	0.16	ng/L	12/20/22	1	EPA 1633	BBL0355
ADONA	0.36 U	0.72	0.36	0.11	ng/L	12/20/22	1	EPA 1633	BBL0355
PFEESA	0.36 U	0.72	0.36	0.098	ng/L	12/20/22	1	EPA 1633	BBL0355
PFMPA	0.36 U	0.72	0.36	0.049	ng/L	12/20/22	1	EPA 1633	BBL0355
PFMBA	0.36 U	0.72	0.36	0.082	ng/L	12/20/22	1	EPA 1633	BBL0355
NFDHA	0.36 U	0.72	0.36	0.27	ng/L	12/20/22	1	EPA 1633	BBL0355
9CL-PF3ONS	0.36 U	0.72	0.36	0.19	ng/L	12/20/22	1	EPA 1633	BBL0355
11CL-PF3OUDS	0.36 U	0.72	0.36	0.19	ng/L	12/20/22	1	EPA 1633	BBL0355
3:3FTCA	0.72 U	1.4	0.72	0.52	ng/L	12/20/22	1	EPA 1633	BBL0355
5:3FTCA	0.72 U	1.4	0.72	0.40	ng/L	12/20/22	1	EPA 1633	BBL0355
7:3FTCA	0.72 U	1.4	0.72	0.50	ng/L	12/20/22	1	EPA 1633	BBL0355
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Surrogate: 13C4-PFBA	81.2%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C5-PFPEA	93.2%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C5-PFHXA	87.1%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C4-PFHPA	93.0%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C8-PFOA	93.8%		20-150			12/20/22	1	EPA 1633	BBL0355

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Reported: 12/22/2022 07:17

Sample Results (Continued)

Sample: AF-RHMW04-WGN01B-2212W2 (Continued)
22L0127-01 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	82.8%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C6-PFDA	105%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C7-PFUnA	107%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C2-PFDOA	99.3%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C2-PFTEDA	91.4%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C3-PFBS	84.7%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C3-PFHXS	90.5%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C8-PFOS	90.0%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C2-4:2FTS	108%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C2-6:2FTS	91.4%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C2-8:2FTS	123%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C8-PFOA	58.2%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: D5-NETFOA	39.9%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: D3-NMEFOA	40.0%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: D3-NMEFOA	94.0%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: D5-NETFOA	142%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: D7-NMEFOE	46.6%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: D9-NETFOE	44.7%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C3-HFPO-DA	82.4%		20-150			12/20/22	1	EPA 1633	BBL0355

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Project: Red Hill AFFF Assessment Sampling
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Reported: 12/22/2022 07:17

Sample Results (Continued)

**Sample: AF-RHMW10-WGN01B-2212W2
22L0127-02 (Water)**

Per- and Polyfluoroalkyl Substances

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
PFBA	36	1.5	0.74	0.19	ng/L	12/20/22	1	EPA 1633	BBL0355
PFPEA	30	0.74	0.37	0.060	ng/L	12/20/22	1	EPA 1633	BBL0355
PFHXA	7.1	0.37	0.18	0.051	ng/L	12/20/22	1	EPA 1633	BBL0355
PFHPA	2.0	0.37	0.18	0.038	ng/L	12/20/22	1	EPA 1633	BBL0355
PFOA	0.75	0.37	0.18	0.14	ng/L	12/20/22	1	EPA 1633	BBL0355
PFNA	0.68	0.37	0.18	0.076	ng/L	12/20/22	1	EPA 1633	BBL0355
PFDA	0.31 J IR2,	0.37	0.18	0.094	ng/L	12/20/22	1	EPA 1633	BBL0355
PFUnA	0.58 IR2	0.37	0.18	0.15	ng/L	12/20/22	1	EPA 1633	BBL0355
PFDOA	0.20 J IR2,	0.37	0.18	0.10	ng/L	12/20/22	1	EPA 1633	BBL0355
PFTRDA	0.48 IR2	0.37	0.28	0.19	ng/L	12/20/22	1	EPA 1633	BBL0355
PFTEDA	0.18 U	0.37	0.18	0.18	ng/L	12/20/22	1	EPA 1633	BBL0355
PFBS	0.18 U	0.37	0.18	0.034	ng/L	12/20/22	1	EPA 1633	BBL0355
PFPEs	0.18 U	0.37	0.18	0.058	ng/L	12/20/22	1	EPA 1633	BBL0355
PFHXS	0.18 U	0.37	0.18	0.029	ng/L	12/20/22	1	EPA 1633	BBL0355
PFHPS	0.18 U	0.37	0.18	0.047	ng/L	12/20/22	1	EPA 1633	BBL0355
PFOS	0.16 J	0.37	0.18	0.059	ng/L	12/20/22	1	EPA 1633	BBL0355
PFNS	0.18 U	0.37	0.18	0.11	ng/L	12/20/22	1	EPA 1633	BBL0355
PFDS	0.18 U	0.37	0.18	0.14	ng/L	12/20/22	1	EPA 1633	BBL0355
PFDOS	0.18 U	0.37	0.18	0.11	ng/L	12/20/22	1	EPA 1633	BBL0355
4:2FTS	0.53 J	1.5	0.74	0.27	ng/L	12/20/22	1	EPA 1633	BBL0355
6:2FTS	130	1.5	0.74	0.29	ng/L	12/20/22	1	EPA 1633	BBL0355
8:2FTS	0.31 J	1.5	0.74	0.076	ng/L	12/20/22	1	EPA 1633	BBL0355
PFOSA	0.18 U	0.37	0.18	0.096	ng/L	12/20/22	1	EPA 1633	BBL0355
NMeFOSA	0.74 U	1.5	0.74	0.44	ng/L	12/20/22	1	EPA 1633	BBL0355
NEtFOSA	0.74 U	1.5	0.74	0.38	ng/L	12/20/22	1	EPA 1633	BBL0355
NMeFOSAA	0.18 U	0.37	0.18	0.098	ng/L	12/20/22	1	EPA 1633	BBL0355
NEtFOSAA	0.18 U	0.37	0.18	0.11	ng/L	12/20/22	1	EPA 1633	BBL0355
NMeFOSE	1.1 U	1.5	1.1	0.93	ng/L	12/20/22	1	EPA 1633	BBL0355
NEtFOSE	1.1 U	1.5	1.1	0.97	ng/L	12/20/22	1	EPA 1633	BBL0355
HFPO-DA	0.37 U	0.74	0.37	0.16	ng/L	12/20/22	1	EPA 1633	BBL0355
ADONA	0.37 U	0.74	0.37	0.11	ng/L	12/20/22	1	EPA 1633	BBL0355
PFEESA	0.37 U	0.74	0.37	0.10	ng/L	12/20/22	1	EPA 1633	BBL0355
PFMPA	0.30 J	0.74	0.37	0.050	ng/L	12/20/22	1	EPA 1633	BBL0355
PFMBA	0.37 U	0.74	0.37	0.084	ng/L	12/20/22	1	EPA 1633	BBL0355
NFDHA	0.37 U	0.74	0.37	0.28	ng/L	12/20/22	1	EPA 1633	BBL0355
9CL-PF3ONS	0.37 U	0.74	0.37	0.19	ng/L	12/20/22	1	EPA 1633	BBL0355
11CL-PF3OUDS	0.37 U	0.74	0.37	0.19	ng/L	12/20/22	1	EPA 1633	BBL0355
3:3FTCA	0.74 U	1.5	0.74	0.53	ng/L	12/20/22	1	EPA 1633	BBL0355
5:3FTCA	0.74 U IR2,	1.5	0.74	0.41	ng/L	12/20/22	1	EPA 1633	BBL0355
7:3FTCA	0.74 U	1.5	0.74	0.51	ng/L	12/20/22	1	EPA 1633	BBL0355
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Surrogate: 13C4-PFBA	82.9%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C5-PFPEA	94.0%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C5-PFHXA	88.2%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C4-PFHPA	96.8%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C8-PFOA	88.3%		20-150			12/20/22	1	EPA 1633	BBL0355

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Sample Results (Continued)

Sample: AF-RHMW10-WGN01B-2212W2 (Continued) 22L0127-02 (Water)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result /Qual	LOQ	LOD	DL	Units	Date Analyzed	DF	Method	Prep Batch
Surrogate: 13C9-PFNA	92.5%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C6-PFDA	94.4%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C7-PFUnA	64.1%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C2-PFDOA	68.5%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C2-PFTEDA	50.7%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C3-PFBS	93.4%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C3-PFHXS	99.7%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C8-PFOS	100%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C2-4:2FTS	240% S2		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C2-4:2FTS	114%		20-150			12/20/22	10	EPA 1633	BBL0355
Surrogate: 13C2-6:2FTS	143%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C2-8:2FTS	131%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C8-PFOSA	96.6%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: D5-NETFOSA	46.9%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: D3-NMEFOSA	64.6%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: D3-NMEFOSAA	116%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: D5-NETFOSAA	121%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: D7-NMEFOSE	92.1%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: D9-NETFOSE	63.4%		20-150			12/20/22	1	EPA 1633	BBL0355
Surrogate: 13C3-HFPO-DA	81.2%		20-150			12/20/22	1	EPA 1633	BBL0355

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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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Batch: BBL0355 - 1633

Blank (BBL0355-BLK1)

Prepared: 12/19/22 08:59 Analyzed: 12/20/22 12:12

	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	0.20 U	0.40	0.20	0.15
PFNA	0.20 U	0.40	0.20	0.082
PFDA	0.20 U	0.40	0.20	0.10
PFUnA	0.20 U	0.40	0.20	0.16
PFDOA	0.20 U	0.40	0.20	0.11
PFTRDA	0.30 U	0.40	0.30	0.20
PFTEDA	0.20 U	0.40	0.20	0.20
PFBS	0.20 U	0.40	0.20	0.037
PFPEs	0.20 U	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	0.0827 J	0.40	0.20	0.064
PFNS	0.20 U	0.40	0.20	0.12
PFDS	0.20 U	0.40	0.20	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	0.20 U	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	31.5	32.0	98.5	20-150
13C5-PFPEA	16.6	16.0	104	20-150
13C5-PFHXA	8.28	8.00	104	20-150
13C4-PFHPA	7.30	8.00	91.2	20-150
13C8-PFOA	6.94	8.00	86.8	20-150

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: 12/22/2022 07:17

Quality Control (Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BBL0355 - 1633 (Continued)

Blank (BBL0355-BLK1)

Prepared: 12/19/22 08:59 Analyzed: 12/20/22 12:12

ng/L

Surrogates

13C9-PFNA	3.74				4.00		93.4	20-150		
13C6-PFDA	3.99				4.00		99.8	20-150		
13C7-PFUnA	4.31				4.00		108	20-150		
13C2-PFDOA	3.98				4.00		99.5	20-150		
13C2-PFTEDA	4.49				4.00		112	20-150		
13C3-PFBS	7.88				8.00		98.6	20-150		
13C3-PFHXS	7.34				8.00		91.7	20-150		
13C8-PFOS	8.46				8.00		106	20-150		
13C2-4:2FTS	17.4				16.0		109	20-150		
13C2-6:2FTS	15.9				16.0		99.4	20-150		
13C2-8:2FTS	17.8				16.0		111	20-150		
13C8-PFOA	7.86				8.00		98.3	20-150		
D5-NETFOA	4.50				8.00		56.3	20-150		
D3-NMEFOA	4.42				8.00		55.3	20-150		
D3-NMEFOA	16.7				16.0		104	20-150		
D5-NETFOA	18.6				16.0		117	20-150		
D7-NMEFOA	75.8				80.0		94.7	20-150		
D9-NETFOA	75.6				80.0		94.5	20-150		
13C3-HFOA-DA	31.8				32.0		99.3	20-150		

LCS (BBL0355-BS1)

Prepared: 12/19/22 08:59 Analyzed: 12/20/22 12:25

ng/L

PFBA	15.1				16.0		94.6	40-150		
PFPEA	8.03				8.00		100	40-150		
PFHXA	3.59				4.00		89.8	40-150		
PFHPA	3.85				4.00		96.2	40-150		
PFOA	4.29				4.00		107	40-150		
PFNA	4.25				4.00		106	40-150		
PFDA	4.58				4.00		115	40-150		
PFUnA	4.33				4.00		108	40-150		
PFDOA	3.66				4.00		91.5	40-150		
PFTRDA	4.39				4.00		110	40-150		
PFTEDA	3.25				4.00		81.3	40-150		
PFBS	3.30				3.54		93.2	40-150		
PFPEA	3.33				3.76		88.5	40-150		
PFHXS	3.41				3.66		93.2	40-150		
PFHPS	3.99				3.82		104	40-150		
PFOS	3.96				3.72		107	40-150		
PFNS	4.43				3.84		115	40-150		
PFDS	4.05				3.86		105	40-150		
PFDOS	4.01				3.88		103	40-150		
4:2FTS	14.6				15.0		97.5	40-150		
6:2FTS	14.4				15.2		94.5	40-150		
8:2FTS	16.7				15.4		109	40-150		
PFOA	4.02				4.00		100	40-150		

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: 12/22/2022 07:17

Quality Control (Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BBL0355 - 1633 (Continued)

LCS (BBL0355-BS1)

Prepared: 12/19/22 08:59 Analyzed: 12/20/22 12:25

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
	ng/L									
NMeFOSA	15.9				16.0		99.7	40-150		
NETFOSA	16.2				16.0		101	40-150		
NMeFOSAA	3.46				4.00		86.5	40-150		
NETFOSAA	3.19				4.00		79.8	40-150		
NMeFOSE	16.8				16.0		105	40-150		
NETFOSE	16.0				16.0		100	40-150		
HFPO-DA	7.53				8.00		94.2	40-150		
ADONA	7.08				7.56		93.7	40-150		
PFEESA	6.79				7.12		95.3	40-150		
PFMPA	7.30				8.00		91.2	40-150		
PFMBA	7.58				8.00		94.7	40-150		
NFDHA	9.74 IR1				8.00		122	40-150		
9CL-PF3ONS	7.76				7.48		104	40-150		
11CL-PF3OUDS	6.75				7.56		89.2	40-150		
3:3FTCA	14.6 IR1				16.0		91.5	40-150		
5:3FTCA	14.8				16.0		92.7	40-150		
7:3FTCA	15.0				16.0		93.5	40-150		

Surrogates

13C4-PFBA	31.4				32.0		98.0	20-150		
13C5-PFPEA	14.8				16.0		92.6	20-150		
13C5-PFHXA	7.43				8.00		92.8	20-150		
13C4-PFHXA	7.51				8.00		93.9	20-150		
13C8-PFOA	8.14				8.00		102	20-150		
13C9-PFNA	4.09				4.00		102	20-150		
13C6-PFDA	3.91				4.00		97.7	20-150		
13C7-PFUnA	4.41				4.00		110	20-150		
13C2-PFDOA	4.46				4.00		112	20-150		
13C2-PFTEDA	4.87				4.00		122	20-150		
13C3-PFBS	8.84				8.00		110	20-150		
13C3-PFHXS	8.50				8.00		106	20-150		
13C8-PFOS	7.42				8.00		92.7	20-150		
13C2-4:2FTS	17.4				16.0		109	20-150		
13C2-6:2FTS	16.7				16.0		104	20-150		
13C2-8:2FTS	14.7				16.0		91.7	20-150		
13C8-PFOA	8.29				8.00		104	20-150		
D5-NETFOA	4.88				8.00		61.0	20-150		
D3-NMEFOA	5.35				8.00		66.9	20-150		
D3-NMEFOSAA	16.9				16.0		106	20-150		
D5-NETFOSAA	19.5				16.0		122	20-150		
D7-NMEFOSE	74.0				80.0		92.4	20-150		
D9-NETFOSE	70.8				80.0		88.5	20-150		
13C3-HFPO-DA	29.2				32.0		91.4	20-150		

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: 12/22/2022 07:17

Quality Control (Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BBL0355 - 1633 (Continued)

MRL Check (BBL0355-MRL1)

Prepared: 12/19/22 08:59 Analyzed: 12/20/22 19:04

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
	ng/L									
PFBA	1.51 J				1.60		94.6	40-150		
PFPEA	0.680 J				0.800		85.0	40-150		
PFHXA	0.342 J				0.400		85.6	40-150		
PFHPA	0.393 J				0.400		98.3	40-150		
PFOA	0.440				0.400		110	40-150		
PFNA	0.447 IR1				0.400		112	40-150		
PFDA	0.394 J				0.400		98.5	40-150		
PFUnA	0.413 IR1				0.400		103	40-150		
PFDOA	0.441				0.400		110	40-150		
PFTRDA	0.338 J IR2,				0.400		84.5	40-150		
PFTEDA	0.373 J				0.400		93.3	40-150		
PFBS	0.330 J				0.354		93.3	40-150		
PFPEs	0.340 J				0.376		90.6	40-150		
PFHXS	0.317 J				0.366		86.5	40-150		
PFHPS	0.388 J				0.382		101	40-150		
PFOS	0.400				0.372		108	40-150		
PFNS	0.371 J				0.384		96.6	40-150		
PFDS	0.367 J				0.386		95.1	40-150		
PFDOS	0.236 J				0.388		60.9	40-150		
4:2FTS	1.29 J				1.50		86.0	40-150		
6:2FTS	1.31 J				1.52		86.0	40-150		
8:2FTS	1.09 J IR2,				1.54		70.8	40-150		
PFOSA	0.371 J				0.400		92.8	40-150		
NMeFOSA	1.38 J				1.60		86.2	40-150		
NEtFOSA	1.19 J				1.60		74.5	40-150		
NMeFOSAA	0.285 J IR1,				0.400		71.3	40-150		
NEtFOSAA	0.225 J IR2,				0.400		56.3	40-150		
NMeFOSE	1.39 J				1.60		86.8	40-150		
NEtFOSE	1.78				1.60		111	40-150		
HFPO-DA	0.534 J IR2,				0.800		66.7	40-150		
ADONA	0.636 J				0.756		84.1	40-150		
PFEESA	0.501 J IR2,				0.712		70.3	40-150		
PFMPA	0.588 J				0.800		73.5	40-150		
PFMBA	0.684 J				0.800		85.4	40-150		
NFDHA	0.474 J IR1,				0.800		59.3	40-150		
9CL-PF3ONS	0.651 J				0.748		87.1	40-150		
11CL-PF3OUDS	0.701 J				0.756		92.8	40-150		
3:3FTCA	1.03 J IR1,				1.60		64.3	40-150		
5:3FTCA	1.21 J				1.60		75.5	40-150		
7:3FTCA	1.66				1.60		104	40-150		

Surrogates

13C4-PFBA	31.8				32.0		99.3	20-150		
13C5-PFPEA	14.8				16.0		92.3	20-150		
13C5-PFHXA	7.09				8.00		88.7	20-150		
13C4-PFHPA	6.36				8.00		79.5	20-150		
13C8-PFOA	7.32				8.00		91.5	20-150		

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: 12/22/2022 07:17

Quality Control (Continued)

Per- and Polyfluoroalkyl Substances (Continued)

Analyte	Result/Qual	LOQ	LOD	MDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BBL0355 - 1633 (Continued)

MRL Check (BBL0355-MRL1)

Prepared: 12/19/22 08:59 Analyzed: 12/20/22 19:04

ng/L

Surrogates

13C9-PFNA	4.60				4.00		115	20-150		
13C6-PFDA	3.69				4.00		92.2	20-150		
13C7-PFUnA	4.29				4.00		107	20-150		
13C2-PFDOA	3.84				4.00		96.0	20-150		
13C2-PFTEDA	3.54				4.00		88.4	20-150		
13C3-PFBS	7.81				8.00		97.6	20-150		
13C3-PFHXS	7.71				8.00		96.4	20-150		
13C8-PFOS	7.35				8.00		91.9	20-150		
13C2-4:2FTS	16.8				16.0		105	20-150		
13C2-6:2FTS	14.8				16.0		92.7	20-150		
13C2-8:2FTS	15.5				16.0		97.0	20-150		
13C8-PFOA	7.89				8.00		98.6	20-150		
D5-NETFOA	5.02				8.00		62.8	20-150		
D3-NMEFOA	4.68				8.00		58.5	20-150		
D3-NMEFOA	16.8				16.0		105	20-150		
D5-NETFOA	18.5				16.0		115	20-150		
D7-NMEFOA	66.4				80.0		83.0	20-150		
D9-NETFOA	63.4				80.0		79.2	20-150		
13C3-HFPO-DA	29.2				32.0		91.2	20-150		

AECOM Honolulu
1001 Bishop Street, Suite 1600
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Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling
Project Manager: Watson Tanji

Reported: 12/22/2022 07:17

Notes and Definitions

Item	Definition
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
J	Estimated value
S2	Surrogate recovered above the upper control limit
U	Not detected
Dry	Sample results reported on a dry weight basis.
DL	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.

**WORK ORDER****22L0127**

Printed: 12/22/2022 7:17 am

Project: Red Hill AFFF Assessment Sampling
Project Number: Red Hill AFFF Assessment Sampling
Project Manager: Gregory Salata
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: 12/16/2022 02:30 PM

Logged In By: Megan Salata

Date Due: 12/21/2022 (3.00 day TAT)

Received By: Megan Salata

Analysis	Comments
22L0127-01 AF-RHMW04-WGN01B-2212W2 [Water] Sampled 12/15/2022 11:20:00AM 1633 NONE	"Report relevant surrogates"
22L0127-02 AF-RHMW10-WGN01B-2212W2 [Water] Sampled 12/15/2022 3:35:00PM 1633 NONE	"Report relevant surrogates"

22L0127**Sample Receipt Log**

Default Cooler

Samples Received at: **2.6°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



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

ELECTRONIC CHAIN OF CUSTODY RECORD
 Phone: (559) 275-2175
 Fax: (559) 275-4422
 coc@applinc.com C.O.C.

Report to: **AECOM** Invoice to: **AECOM** PLEASE PRINT
 Company Name: **1001 Bishop St ste1600** Phone: _____
 Address: **Honolulu, HI 96813** Fax: _____
Watson Tanji / Brant Landers
 Attn: **watson.tanji@aecom.com/brant.landiers@aecom.com**
 Email: _____

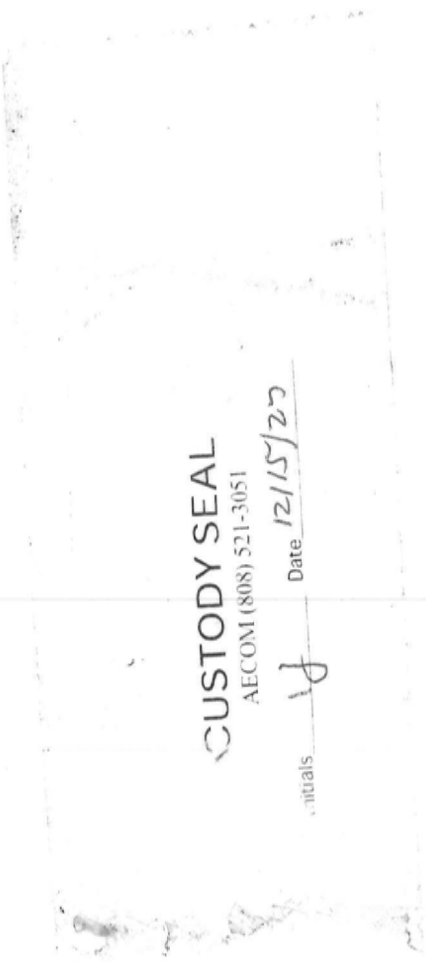
Project Name/Number CTO N6274223F0104 / 60697810	Sampler (Print) Aaron Dwyer	Location	Date Collected 12/15/12	Time Collected 1535	Time Zone HST	No. of Containers 2	Matrix			Analysis Requested/Method Number PFAS EPA Draft 1633	Date Shipped:
							Aq	Soil	Soil		
AF-RHMW10-WGN01B-2212W2	<i>[Signature]</i>		12/15/12	1535	HST	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Carrier:
											Waybill No.:
											Comments:
											Store ALL samples until notified by client to dispose

Turnaround Requested: Check one
 Standard 2-3 wk One week 3 days 24/48 Hrs. Other: _____

Relinquished by sampler: *[Signature]* Date: 12/15/12 Time: 1720
 Relinquished by: *Michelle DeSteno* Date: 12/15/12 Time: 1735
 Received by: *[Signature]* Date: 12/16/12 Time: 1430

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

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



CUSTODY SEAL

AECOM (808) 521-3051

Date 12/15/20

Initials VJ

Initials

PFAS

SAMPLE DATA

FORM I ANALYSIS DATA SHEET

AF-RHMW04-WGN01B-2212W2

Laboratory:	APPL, LLC	Work Order:	22L0127
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0127-01
		File ID:	S2022-12-20A (14)
Sampled:	12/15/22 11:20	Prepared:	12/19/22 08:59
		Analyzed:	12/20/22 12:50
Solids:		Preparation:	1633
		Dilution:	1
Initial/Final:	554.59 g / 2 ml	Instrument:	Saphira
Batch:	BBL0355	Sequence:	SB03903
		Calibration:	2251019

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	2.2	1.4	0.72	0.19	
PFPEA	1.1	0.72	0.36	0.059	
PFHXA	0.46	0.36	0.18	0.050	IR2
PFHPA	0.45	0.36	0.18	0.037	
PFOA	0.14 J	0.36	0.18	0.14	
PFNA	0.18 U	0.36	0.18	0.074	
PFDA	0.18 U	0.36	0.18	0.091	
PFUnA	0.18 U	0.36	0.18	0.14	
PFDOA	0.18 U	0.36	0.18	0.10	
PFTRDA	0.27 U	0.36	0.27	0.18	
PFTEDA	0.18 U	0.36	0.18	0.18	
PFBS	0.18 U	0.36	0.18	0.033	
PFPEs	0.18 U	0.36	0.18	0.057	
PFHXS	0.18 U	0.36	0.18	0.029	
PFHPS	0.18 U	0.36	0.18	0.046	
PFOS	0.18 U	0.36	0.18	0.057	
PFNS	0.18 U	0.36	0.18	0.11	
PFDS	0.18 U	0.36	0.18	0.14	
PFDOS	0.18 U	0.36	0.18	0.11	
4:2FTS	0.72 U	1.4	0.72	0.26	
6:2FTS	9.6	1.4	0.72	0.28	
8:2FTS	0.72 U	1.4	0.72	0.074	
PFOSA	0.18 U	0.36	0.18	0.094	
NMeFOSA	0.72 U	1.4	0.72	0.43	
NEtFOSA	0.72 U	1.4	0.72	0.37	
NMeFOSAA	0.18 U	0.36	0.18	0.095	
NEtFOSAA	0.18 U	0.36	0.18	0.10	
NMeFOSE	1.1 U	1.4	1.1	0.91	
NEtFOSE	1.1 U	1.4	1.1	0.94	
HFPO-DA	0.36 U	0.72	0.36	0.16	

FORM I ANALYSIS DATA SHEET

AF-RHMW04-WGN01B-2212W2

Laboratory:	APPL, LLC	Work Order:	22L0127
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0127-01
		File ID:	S2022-12-20A (14)
Sampled:	12/15/22 11:20	Prepared:	12/19/22 08:59
		Analyzed:	12/20/22 12:50
Solids:		Preparation:	1633
		Dilution:	1
Initial/Final:	554.59 g / 2 ml	Instrument:	Saphira
Batch:	BBL0355	Sequence:	SB03903
		Calibration:	2251019

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.36 U	0.72	0.36	0.11	
PFEESA	0.36 U	0.72	0.36	0.098	
PFMPA	0.36 U	0.72	0.36	0.049	
PFMBA	0.36 U	0.72	0.36	0.082	
NFDHA	0.36 U	0.72	0.36	0.27	
9CL-PF3ONS	0.36 U	0.72	0.36	0.19	
11CL-PF3OUDS	0.36 U	0.72	0.36	0.19	
3:3FTCA	0.72 U	1.4	0.72	0.52	
5:3FTCA	0.72 U	1.4	0.72	0.40	
7:3FTCA	0.72 U	1.4	0.72	0.50	



Chemist: ABK
Instrument: Saphira
Type: Sciex Q3 5500

Sample I.D.: 22L0127-01
DF, IV: 1, 10.0µL
Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
Path: S2022-12-20A (14)
Acquired: 2022/12/20 - 12:50

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	(212.9 / 169.0) 31181	(3.70, 1.00) (0.00, N/A, 0.0)	31.7	N/A 0.0 0.0	0.6009	N/A			
PFPeA	(262.9 / 219.0) 27860 (262.9 / 69.0) 452	(4.97, 1.00) (0.00, N/A, 2.4)	221.0 10.4	0.0162 19019.1 133.5	0.3046	N/A			
PFHxA	(313.0 / 269.0) 17491 (313.0 / 119.0) 2814	(6.12, 1.00) (-0.01, N/A, -1.0)	91.8 30.1	0.1609 164.0 169.3	0.1277	N/A			IR2,
PFHpA	(363.0 / 319.0) 16196 (363.0 / 169.0) 6079	(7.10, 1.00) (0.00, N/A, 0.2)	84.6 59.7	0.3753 120.1 130.0	0.1260	N/A			
PFOA	(413.0 / 369.0) 5605 (413.0 / 169.0) 1739	(7.92, 1.00) (0.00, N/A, -0.4)	32.9 22.6	0.3102 92.1 95.0	0.0391	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: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0127-01
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (14)
 Acquired: 2022/12/20 - 12:50

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(298.9 / 80.0) N/A (298.9 / 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) 5878 (499.0 / 99.0) 1417	(9.46, 1.00) (0.00, N/A, 0.6)	8.4 25.6	0.2410 105.5 106.1	0.0145	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	(698.9 / 80.0) N/A (698.9 / 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) 133181 (427.0 / 81.0) 90408	(7.59, 1.00) (0.00, N/A, 0.4)	609.6 368.1	0.6788 94.8 102.7	2.6682	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: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0127-01
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (14)
 Acquired: 2022/12/20 - 12:50

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(511.9 / 219.0) N/A (511.9 / 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	(616.1 / 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			

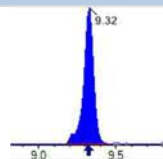
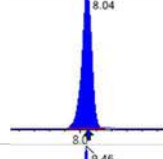
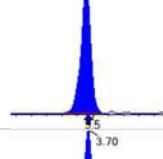
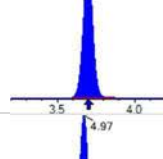
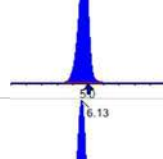
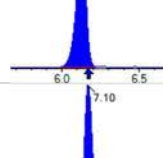
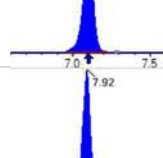
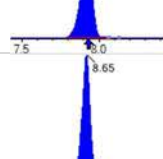
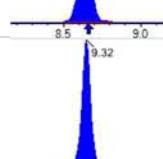
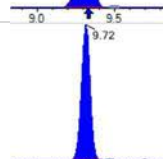
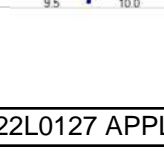


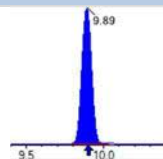
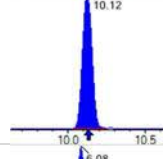
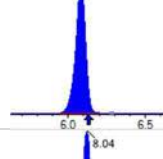
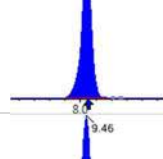
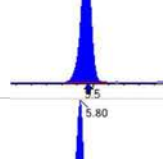
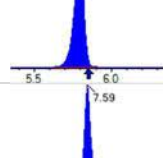
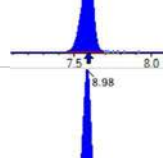
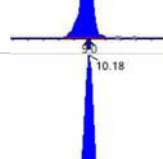
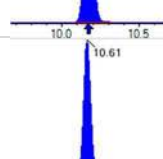
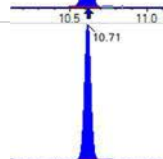
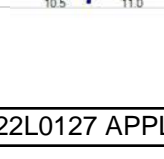
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

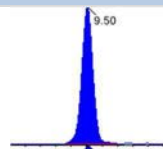
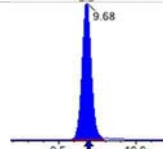
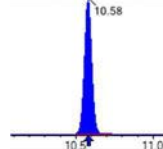
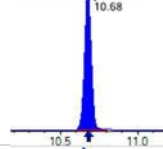
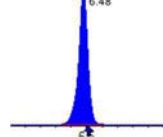
Sample I.D.: 22L0127-01
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (14)
 Acquired: 2022/12/20 - 12:50

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) 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	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(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) 92897	(3.70, N/A) (N/A, 0.00, N/A)	668.4	N/A	1.0625 [1.0000]	106.3% { 129.4% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 147219	(6.13, N/A) (N/A, -0.04, N/A)	580.1	N/A	1.1189 [1.0000]	111.9% { 126.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 145927	(7.92, N/A) (N/A, -0.01, N/A)	460.9	N/A	1.1658 [1.0000]	116.6% { 144.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 130523	(8.65, N/A) (N/A, 0.00, N/A)	330.1	N/A	1.3076 [1.0000]	130.8% { 134.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(515.1 / 470.1) 117487	(9.32, N/A) (N/A, 0.00, N/A)	351.8	N/A	1.1329 [1.0000]	113.3% { 171.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 299723	(8.04, N/A) (N/A, -0.01, N/A)	707.4	N/A	1.2669 [1.0000]	126.7% { 142.0% }			
13C4_PFOS_IIS	(502.8 / 79.9) 248586	(9.46, N/A) (N/A, -0.01, N/A)	303.5	N/A	1.2391 [1.0000]	123.9% { 156.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 625053	(3.70, N/A) (N/A, 0.00, N/A)	968.7	N/A	6.4989 [8.0000]	81.2% { 109.8% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 404067	(4.97, N/A) (N/A, -0.03, N/A)	785.4	N/A	3.7281 [4.0000]	93.2% { 124.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 301823	(6.13, N/A) (N/A, -0.04, N/A)	514.0	N/A	1.7415 [2.0000]	87.1% { 126.5% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 284700	(7.10, N/A) (N/A, 0.00, N/A)	537.3	N/A	1.8594 [2.0000]	93.0% { 128.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 302634	(7.92, N/A) (N/A, -0.01, N/A)	672.9	N/A	1.8768 [2.0000]	93.8% { 131.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 118071	(8.65, N/A) (N/A, -0.01, N/A)	301.9	N/A	0.8281 [1.0000]	82.8% { 143.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 167599	(9.32, N/A) (N/A, -0.01, N/A)	365.5	N/A	1.0528 [1.0000]	105.3% { 155.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 244782	(9.72, N/A) (N/A, -0.01, N/A)	395.1	N/A	1.0679 [1.0000]	106.8% { 161.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ 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) 256641	(9.89, N/A) (N/A, -0.01, N/A)	529.8	N/A	0.9928 [1.0000]	99.3% { 140.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 143626	(10.12, N/A) (N/A, -0.01, N/A)	377.3	N/A	0.9141 [1.0000]	91.4% { 127.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 828946	(6.08, N/A) (N/A, -0.05, N/A)	617.2	N/A	1.6934 [2.0000]	84.7% { 125.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 459458	(8.04, N/A) (N/A, -0.01, N/A)	757.1	N/A	1.8099 [2.0000]	90.5% { 133.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 735203	(9.46, N/A) (N/A, -0.01, N/A)	413.7	N/A	1.8004 [2.0000]	90.0% { 133.7% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 119742	(5.80, N/A) (N/A, -0.05, N/A)	650.8	N/A	4.3381 [4.0000]	108.5% { 142.1% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 129312	(7.59, N/A) (N/A, -0.01, N/A)	554.3	N/A	3.6557 [4.0000]	91.4% { 145.4% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 155843	(8.98, N/A) (N/A, -0.01, N/A)	377.2	N/A	4.9143 [4.0000]	122.9% { 177.1% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 691402	(10.18, N/A) (N/A, 0.00, N/A)	794.5	N/A	1.1634 [2.0000]	58.2% { 82.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 118379	(10.61, N/A) (N/A, 0.00, N/A)	620.6	N/A	0.7996 [2.0000]	40.0% { 58.1% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 110438	(10.71, N/A) (N/A, 0.00, N/A)	637.0	N/A	0.7988 [2.0000]	39.9% { 59.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 360010	(9.50, N/A) (N/A, -0.01, N/A)	344.7	N/A	3.7584 [4.0000]	94.0% { 152.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 451377	(9.68, N/A) (N/A, -0.01, N/A)	310.5	N/A	5.6699 [4.0000]	141.7% { 201.7% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 265400	(10.58, N/A) (N/A, 0.00, N/A)	688.7	N/A	9.3192 [20.0000]	46.6% { 77.6% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 137234	(10.68, N/A) (N/A, 0.00, N/A)	984.7	N/A	8.9486 [20.0000]	44.7% { 69.1% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 695540	(6.48, N/A) (N/A, -0.03, N/A)	725.1	N/A	6.5916 [8.0000]	82.4% { 106.4% }			

FORM I ANALYSIS DATA SHEET

AF-RHMW10-WGN01B-2212W2

Laboratory:	APPL, LLC	Work Order:	22L0127
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0127-02
		File ID:	S2022-12-20A (16)
Sampled:	12/15/22 15:35	Prepared:	12/19/22 08:59
		Analyzed:	12/20/22 13:16
Solids:		Preparation:	1633
		Dilution:	1
Initial/Final:	541.54 g / 2 ml	Instrument:	Saphira
Batch:	BBL0355	Sequence:	SB03903
		Calibration:	2251019

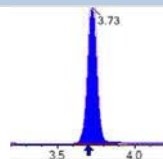
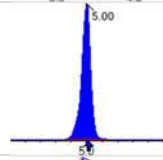
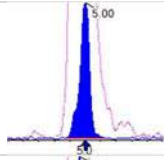
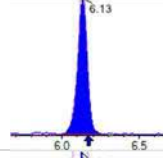
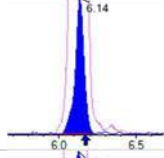
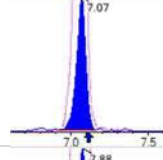
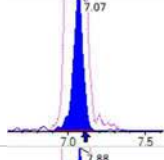
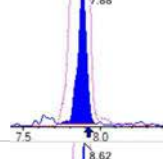
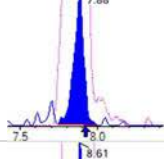
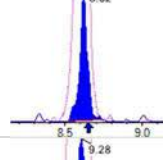
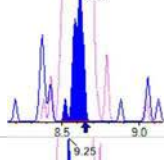
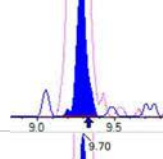
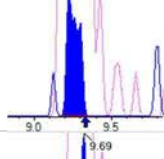
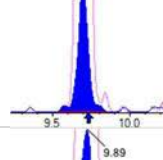
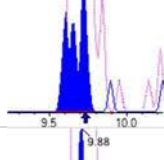
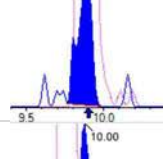
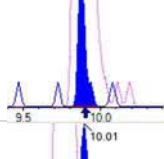
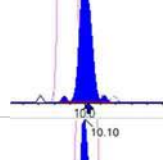
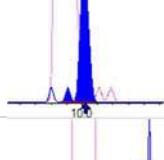
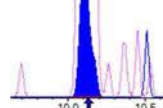
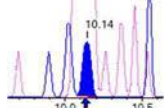
COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
PFBA	36	1.5	0.74	0.19	
PFPEA	30	0.74	0.37	0.060	
PFHXA	7.1	0.37	0.18	0.051	
PFHPA	2.0	0.37	0.18	0.038	
PFOA	0.75	0.37	0.18	0.14	
PFNA	0.68	0.37	0.18	0.076	
PFDA	0.31 J	0.37	0.18	0.094	IR2,
PFUnA	0.58	0.37	0.18	0.15	IR2
PFDOA	0.20 J	0.37	0.18	0.10	IR2,
PFTRDA	0.48	0.37	0.28	0.19	IR2
PFTEDA	0.18 U	0.37	0.18	0.18	
PFBS	0.18 U	0.37	0.18	0.034	
PFPEs	0.18 U	0.37	0.18	0.058	
PFHXS	0.18 U	0.37	0.18	0.029	
PFHPS	0.18 U	0.37	0.18	0.047	
PFOS	0.16 J	0.37	0.18	0.059	
PFNS	0.18 U	0.37	0.18	0.11	
PFDS	0.18 U	0.37	0.18	0.14	
PFDOS	0.18 U	0.37	0.18	0.11	
4:2FTS	0.53 J	1.5	0.74	0.27	
6:2FTS	130	1.5	0.74	0.29	
8:2FTS	0.31 J	1.5	0.74	0.076	
PFOSA	0.18 U	0.37	0.18	0.096	
NMeFOSA	0.74 U	1.5	0.74	0.44	
NEtFOSA	0.74 U	1.5	0.74	0.38	
NMeFOSAA	0.18 U	0.37	0.18	0.098	
NEtFOSAA	0.18 U	0.37	0.18	0.11	
NMeFOSE	1.1 U	1.5	1.1	0.93	
NEtFOSE	1.1 U	1.5	1.1	0.97	
HFPO-DA	0.37 U	0.74	0.37	0.16	

FORM I ANALYSIS DATA SHEET

AF-RHMW10-WGN01B-2212W2

Laboratory:	APPL, LLC	Work Order:	22L0127
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	22L0127-02
		File ID:	S2022-12-20A (16)
Sampled:	12/15/22 15:35	Prepared:	12/19/22 08:59
		Analyzed:	12/20/22 13:16
Solids:		Preparation:	1633
		Dilution:	1
Initial/Final:	541.54 g / 2 ml	Instrument:	Saphira
Batch:	BBL0355	Sequence:	SB03903
		Calibration:	2251019

COMPOUND	CONC. (ng/L)	LOQ	LOD	DL	Q
ADONA	0.37 U	0.74	0.37	0.11	
PFEESA	0.37 U	0.74	0.37	0.10	
PFMPA	0.30 J	0.74	0.37	0.050	
PFMBA	0.37 U	0.74	0.37	0.084	
NFDHA	0.37 U	0.74	0.37	0.28	
9CL-PF3ONS	0.37 U	0.74	0.37	0.19	
11CL-PF3OUDS	0.37 U	0.74	0.37	0.19	
3:3FTCA	0.74 U	1.5	0.74	0.53	
5:3FTCA	0.74 U	1.5	0.74	0.41	IR2,
7:3FTCA	0.74 U	1.5	0.74	0.51	

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ 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	(212.9 / 169.0) 578379	(3.73, 1.00) (0.00, N/A, 0.0)	63.3	N/A 0.0 0.0	9.7960	N/A			
PFPeA	(262.9 / 219.0) 882781 (262.9 / 69.0) 9240	(5.00, 1.00) (0.00, N/A, -0.1)	931.7 179.8	0.0105 12263.1 86.0	8.1601	N/A			
PFHxA	(313.0 / 269.0) 312315 (313.0 / 119.0) 29255	(6.13, 1.00) (0.00, N/A, -0.1)	395.1 216.6	0.0937 95.5 98.6	1.9216	N/A			
PFHpA	(363.0 / 319.0) 84115 (363.0 / 169.0) 24419	(7.07, 1.00) (0.00, N/A, 0.0)	230.1 199.9	0.2903 92.9 100.5	0.5360	N/A			
PFOA	(413.0 / 369.0) 33450 (413.0 / 169.0) 10202	(7.88, 1.00) (0.01, N/A, 0.1)	109.8 86.2	0.3050 90.6 93.4	0.2041	N/A			
PFNA	(463.0 / 419.0) 21445 (463.0 / 169.0) 2522	(8.62, 1.00) (0.01, N/A, 0.7)	109.9 1154.0	0.1176 58.6 51.6	0.1842	N/A			
PFDA	(513.0 / 469.0) 10403 (513.0 / 169.0) 2076	(9.28, 1.00) (0.00, N/A, 2.2)	353.6 13.9	0.1996 250.8 214.7	0.0846	N/A			IR2,
PFUnA	(563.0 / 519.0) 15347 (563.0 / 169.0) 3709	(9.70, 1.00) (0.00, N/A, 0.6)	74.9 22.1	0.2417 215.7 210.3	0.1578	N/A			IR2,
PFDoA	(613.0 / 569.0) 6919 (613.0 / 169.0) 2521	(9.89, 1.00) (0.01, N/A, 0.7)	30.2 30.4	0.3643 290.1 274.1	0.0549	N/A			IR2,
PFTTrDA	(663.0 / 619.0) 13550 (663.0 / 169.0) 4729	(10.00, 1.01) (N/A, -0.02, -0.9)	159.6 112.7	0.3490 166.9 193.7	0.1303	N/A			IR2,
PFTeDA	(713.0 / 669.0) 2523 (713.0 / 169.0) 613	(10.10, 1.00) (-0.01, N/A, -2.2)	42.5 11.1	0.2429 107.0 114.3	0.0373	N/A			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0127-02
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (16)
 Acquired: 2022/12/20 - 13:16

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	(298.9 / 80.0) N/A (298.9 / 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) 12989 (499.0 / 99.0) 3612	(9.42, 1.00) (-0.01, N/A, -1.1)	12.8 15.0	0.2781 121.7 122.4	0.0429	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	(698.9 / 80.0) N/A (698.9 / 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) 32015 (327.0 / 81.0) 16840	(5.81, 1.00) (0.00, N/A, 0.0)	193.5 61.9	0.5260 105.2 94.7	0.1431	N/A			
6:2FTS	(427.0 / 407.0) 2963433 (427.0 / 81.0) 2081007	(7.54, 1.00) (0.00, N/A, -0.1)	993.4 822.4	0.7022 98.0 106.2	35.8265	N/A			
8:2FTS	(527.0 / 507.0) 5438 (527.0 / 81.0) 1946	(8.95, 1.00) (0.01, N/A, 1.4)	125.1 11.3	0.3579 50.9 60.4	0.0843	N/A			

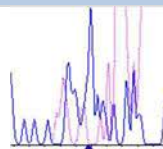
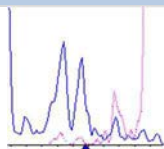
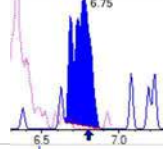
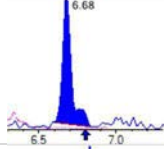
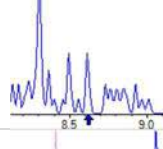
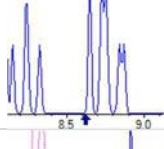
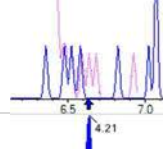
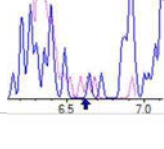
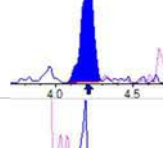

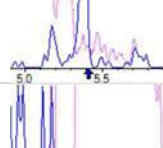

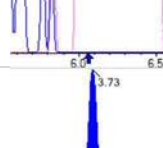
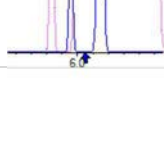
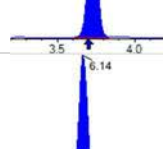
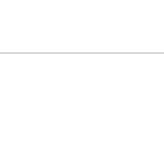
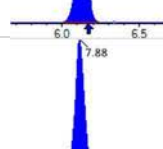
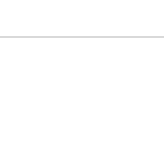
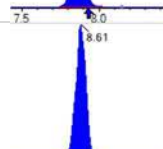
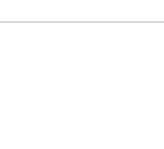




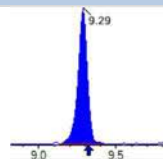
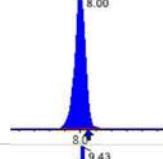
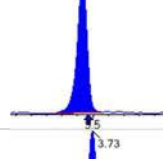
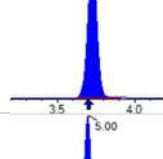
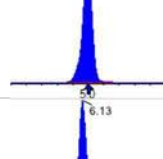
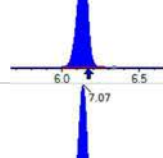
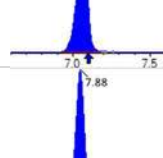
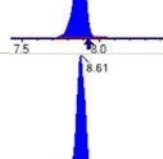
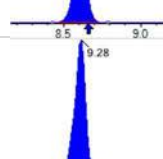
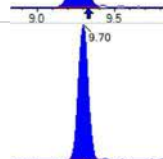
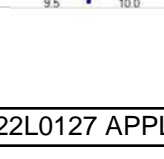
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

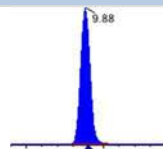
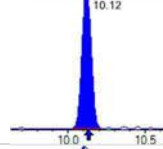
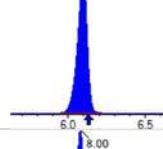
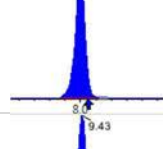
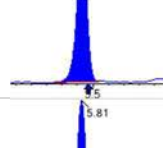
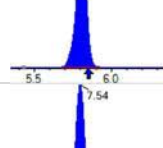
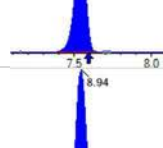
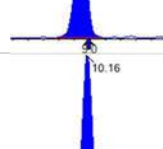
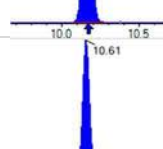
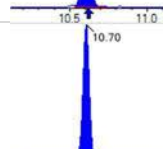
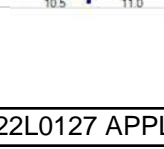
Sample I.D.: 22L0127-02
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (16)
 Acquired: 2022/12/20 - 13:16

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	(511.9 / 219.0) N/A (511.9 / 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	(616.1 / 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.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 3063 (341.0 / 217.0) 15484	(6.75, 1.10) (N/A, -0.05, 4.5)	19.5 62.2	5.0548 319.9 318.8	0.0926	N/A			IR2,
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) 2334	(4.21, 0.84) (N/A, 0.01, 0.0)	82.0	N/A 0.0 0.0	0.0799	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	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(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) 103537	(3.73, N/A) (N/A, 0.03, N/A)	631.7	N/A	1.1842 [1.0000]	118.4% { 144.2% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 172615	(6.14, N/A) (N/A, -0.03, N/A)	771.8	N/A	1.3119 [1.0000]	131.2% { 147.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 177338	(7.88, N/A) (N/A, -0.05, N/A)	704.7	N/A	1.4168 [1.0000]	141.7% { 175.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 136334	(8.61, N/A) (N/A, -0.04, N/A)	449.4	N/A	1.3658 [1.0000]	136.6% { 140.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(515.1 / 470.1) 104286	(9.29, N/A) (N/A, -0.04, N/A)	256.8	N/A	1.0056 [1.0000]	100.6% { 152.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 317129	(8.00, N/A) (N/A, -0.05, N/A)	868.4	N/A	1.3405 [1.0000]	134.0% { 150.2% }			
13C4_PFOS_IIS	(502.8 / 79.9) 167301	(9.43, N/A) (N/A, -0.04, N/A)	234.7	N/A	0.8339 [1.0000]	83.4% { 105.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 711172	(3.73, N/A) (N/A, 0.03, N/A)	845.9	N/A	6.6344 [8.0000]	82.9% { 125.0% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 477967	(5.00, N/A) (N/A, -0.01, N/A)	779.9	N/A	3.7611 [4.0000]	94.0% { 147.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 358281	(6.13, N/A) (N/A, -0.04, N/A)	459.8	N/A	1.7632 [2.0000]	88.2% { 150.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 347600	(7.07, N/A) (N/A, -0.04, N/A)	698.3	N/A	1.9362 [2.0000]	96.8% { 157.2% }			
13C8_PFOA_EIS	(421.0 / 376.0) 345867	(7.88, N/A) (N/A, -0.05, N/A)	726.5	N/A	1.7650 [2.0000]	88.3% { 150.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 137762	(8.61, N/A) (N/A, -0.04, N/A)	396.7	N/A	0.9251 [1.0000]	92.5% { 167.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 133368	(9.28, N/A) (N/A, -0.05, N/A)	326.5	N/A	0.9438 [1.0000]	94.4% { 123.4% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 130489	(9.70, N/A) (N/A, -0.03, N/A)	284.7	N/A	0.6413 [1.0000]	64.1% { 86.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 157289	(9.88, N/A) (N/A, -0.02, N/A)	469.0	N/A	0.6855 [1.0000]	68.5% { 86.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 70657	(10.12, N/A) (N/A, -0.01, N/A)	306.4	N/A	0.5066 [1.0000]	50.7% { 62.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 967834	(6.10, N/A) (N/A, -0.03, N/A)	766.3	N/A	1.8686 [2.0000]	93.4% { 146.3% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 535642	(8.00, N/A) (N/A, -0.05, N/A)	619.1	N/A	1.9942 [2.0000]	99.7% { 155.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 551419	(9.43, N/A) (N/A, -0.04, N/A)	202.8	N/A	2.0065 [2.0000]	100.3% { 100.3% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 280640	(5.81, N/A) (N/A, -0.04, N/A)	666.7	N/A	9.6093 [4.0000]	240.2% { 332.9% }			S2,
13C2_6:2FTS_EIS	(429.0 / 81.0) 214288	(7.54, N/A) (N/A, -0.05, N/A)	544.2	N/A	5.7255 [4.0000]	143.1% { 241.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 175955	(8.94, N/A) (N/A, -0.05, N/A)	299.8	N/A	5.2439 [4.0000]	131.1% { 200.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 773000	(10.16, N/A) (N/A, -0.01, N/A)	729.0	N/A	1.9327 [2.0000]	96.6% { 92.7% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 128651	(10.61, N/A) (N/A, -0.01, N/A)	651.1	N/A	1.2912 [2.0000]	64.6% { 63.1% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 87286	(10.70, N/A) (N/A, -0.01, N/A)	522.4	N/A	0.9381 [2.0000]	46.9% { 47.2% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0127-02
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (16)
 Acquired: 2022/12/20 - 13:16

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) 298768	(9.48, N/A) (N/A, -0.03, N/A)	485.7	N/A	4.6345 [4.0000]	115.9% { 126.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 259889	(9.66, N/A) (N/A, -0.03, N/A)	438.8	N/A	4.8507 [4.0000]	121.3% { 116.1% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 353187	(10.57, N/A) (N/A, -0.01, N/A)	550.3	N/A	18.4273 [20.0000]	92.1% { 103.2% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 130775	(10.67, N/A) (N/A, -0.01, N/A)	792.9	N/A	12.6706 [20.0000]	63.4% { 65.9% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 803762	(6.48, N/A) (N/A, -0.04, N/A)	718.3	N/A	6.4966 [8.0000]	81.2% { 122.9% }			

FORM I
ANALYSIS DATA SHEET
AF-RHMW10-WGN01B-2212W2

Laboratory:	APPL, LLC	Work Order:	22L0127		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling		
Matrix:	Water	Laboratory ID:	22L0127-02RE1	File ID:	S2022-12-20A (17)
Sampled:	12/15/22 15:35	Prepared:	12/19/22 08:59	Analyzed:	12/20/22 13:29
Solids:		Preparation:	1633	Dilution:	1
Initial/Final:	541.54 g / 2 ml			Instrument:	Saphira
Batch:	BBL0355	Sequence:	SB03903	Calibration:	2251019



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0127-02RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (17)
 Acquired: 2022/12/20 - 13:29

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	(212.9 / 169.0) 47973	(3.70, 1.00) (0.00, N/A, 0.0)	48.5	N/A 0.0 0.0	0.8402	N/A			
PFPeA	(262.9 / 219.0) 77163 (262.9 / 69.0) 878	(5.00, 1.00) (0.01, N/A, -1.0)	448.4 27.9	0.0114 13332.7 93.6	0.7450	N/A			
PFHxA	(313.0 / 269.0) 25375 (313.0 / 119.0) 2330	(6.15, 1.00) (0.00, N/A, 1.7)	114.6 41.3	0.0918 93.6 96.6	0.1584	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: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0127-02RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (17)
 Acquired: 2022/12/20 - 13:29

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(298.9 / 80.0) N/A (298.9 / 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	(698.9 / 80.0) N/A (698.9 / 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) 166874 (427.0 / 81.0) 114924	(7.55 , 1.00) (0.00 , N/A , -0.2)	501.5 431.5	0.6887 96.1 104.1	2.9244	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			

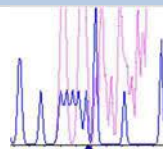
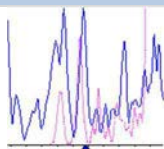
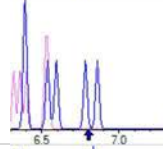
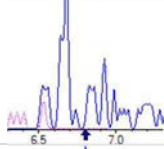
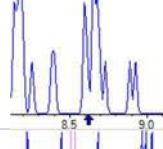
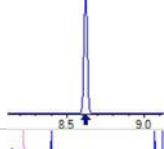
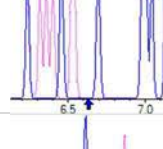
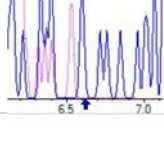
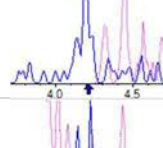
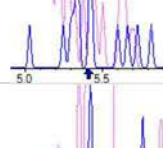
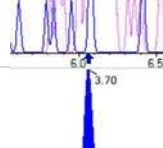

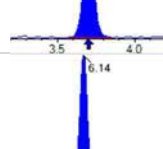
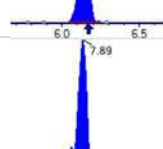
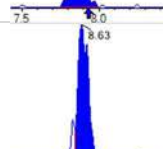



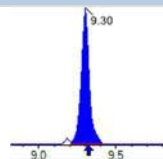
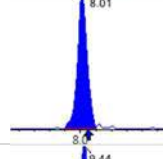
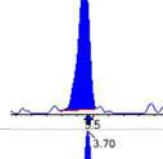
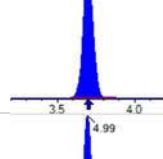
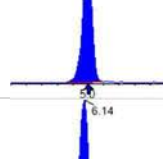
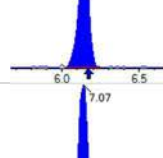
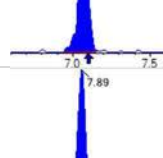
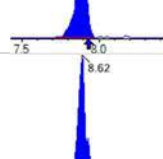
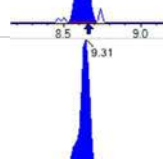
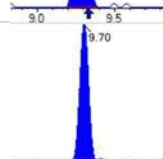
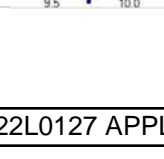
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 Instrument: Saphira
 Type: Sciex Q3 5500

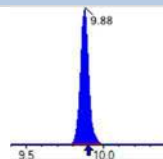
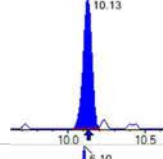
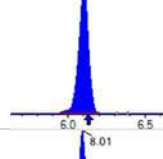
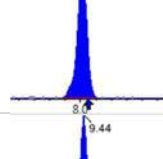
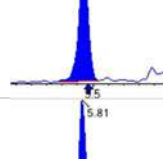
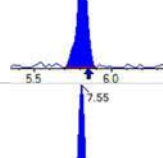
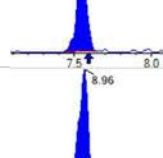
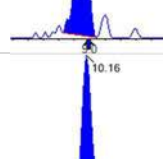
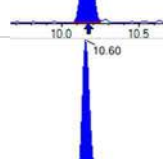
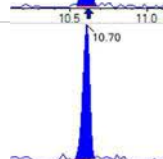
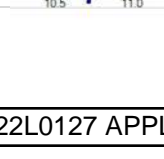
Sample I.D.: 22L0127-02RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (17)
 Acquired: 2022/12/20 - 13:29

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(511.9 / 219.0) N/A (511.9 / 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	(616.1 / 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			
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.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(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) 9809	(3.70, N/A) (N/A, 0.00, N/A)	320.1	N/A	1.1219 [1.0000]	112.2% { 13.7% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 17592	(6.14, N/A) (N/A, -0.03, N/A)	307.7	N/A	1.3371 [1.0000]	133.7% { 15.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 12347	(7.89, N/A) (N/A, -0.03, N/A)	228.1	N/A	0.9864 [1.0000]	98.6% { 12.2% }			
13C5_PFNA_IIS	(468.0 / 423.0) 11281	(8.63, N/A) (N/A, -0.03, N/A)	2145.0	N/A	1.1302 [1.0000]	113.0% { 11.6% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(515.1 / 470.1) 10723	(9.30, N/A) (N/A, -0.02, N/A)	251.8	N/A	1.0340 [1.0000]	103.4% { 15.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 27027	(8.01, N/A) (N/A, -0.04, N/A)	312.4	N/A	1.1424 [1.0000]	114.2% { 12.8% }			
13C4_PFOS_IIS	(502.8 / 79.9) 32410	(9.44, N/A) (N/A, -0.02, N/A)	59.4	N/A	1.6155 [1.0000]	161.5% { 20.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 68776	(3.70, N/A) (N/A, 0.00, N/A)	819.9	N/A	0.6773 [0.8000]	84.7% { 12.1% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 45763	(4.99, N/A) (N/A, -0.01, N/A)	522.9	N/A	0.3533 [0.4000]	88.3% { 14.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 35314	(6.14, N/A) (N/A, -0.03, N/A)	306.9	N/A	0.1705 [0.2000]	85.3% { 14.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 28559	(7.07, N/A) (N/A, -0.03, N/A)	219.8	N/A	0.1561 [0.2000]	78.0% { 12.9% }			
13C8_PFOA_EIS	(421.0 / 376.0) 31237	(7.89, N/A) (N/A, -0.04, N/A)	453.7	N/A	0.2290 [0.2000]	114.5% { 13.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 10535	(8.62, N/A) (N/A, -0.04, N/A)	139.6	N/A	0.0855 [0.1000]	85.5% { 12.8% }			
13C6_PFDA_EIS	(519.0 / 474.0) 19984	(9.31, N/A) (N/A, -0.02, N/A)	268.3	N/A	0.1375 [0.1000]	137.5% { 18.5% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 28246	(9.70, N/A) (N/A, -0.02, N/A)	292.6	N/A	0.1350 [0.1000]	135.0% { 18.6% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 19715	(9.88, N/A) (N/A, -0.02, N/A)	368.4	N/A	0.0836 [0.1000]	83.6% {10.8%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 13908	(10.13, N/A) (N/A, 0.00, N/A)	122.1	N/A	0.0970 [0.1000]	97.0% {12.3%}			
13C3_PFBs_EIS	(302.0 / 80.0) 87194	(6.10, N/A) (N/A, -0.03, N/A)	632.0	N/A	0.1975 [0.2000]	98.8% {13.2%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 44204	(8.01, N/A) (N/A, -0.04, N/A)	146.3	N/A	0.1931 [0.2000]	96.6% {12.9%}			
13C8_PFOS_EIS	(507.0 / 80.0) 87620	(9.44, N/A) (N/A, -0.02, N/A)	104.5	N/A	0.1646 [0.2000]	82.3% {15.9%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 11320	(5.81, N/A) (N/A, -0.03, N/A)	122.3	N/A	0.4548 [0.4000]	113.7% {13.4%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 14783	(7.55, N/A) (N/A, -0.05, N/A)	205.1	N/A	0.4634 [0.4000]	115.9% {16.6%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 15533	(8.96, N/A) (N/A, -0.03, N/A)	50.1	N/A	0.5432 [0.4000]	135.8% {17.7%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 97486	(10.16, N/A) (N/A, -0.01, N/A)	325.6	N/A	0.1258 [0.2000]	62.9% {11.7%}			
D3_NMeFOsa_EIS	(515.0 / 169.0) 13717	(10.60, N/A) (N/A, -0.01, N/A)	165.2	N/A	0.0711 [0.2000]	35.5% {6.7%}			
D5_NEiFOsa_EIS	(531.1 / 169.0) 7799	(10.70, N/A) (N/A, -0.01, N/A)	111.3	N/A	0.0433 [0.2000]	21.6% {4.2%}			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: 22L0127-02RE1@10
 DF, IV: 1, 1.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (17)
 Acquired: 2022/12/20 - 13:29

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ 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) 48056	(9.49, N/A) (N/A, -0.02, N/A)	166.9	N/A	0.3848 [0.4000]	96.2% { 20.4% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 41475	(9.67, N/A) (N/A, -0.03, N/A)	146.3	N/A	0.3996 [0.4000]	99.9% { 18.5% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 35811	(10.57, N/A) (N/A, -0.01, N/A)	403.2	N/A	0.9645 [2.0000]	48.2% { 10.5% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 12869	(10.67, N/A) (N/A, -0.01, N/A)	245.5	N/A	0.6436 [2.0000]	32.2% { 6.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 85713	(6.49, N/A) (N/A, -0.03, N/A)	446.1	N/A	0.6798 [0.8000]	85.0% { 13.1% }			

QUALITY CONTROL

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 22L0127
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW04-WGN01B-2212W2 (22L0127-01) ng/L		Lab File ID: S2022-12-20A (14)		Analyzed: 12/20/22 12:50
13C4-PFBA	28.9	81.2	20 - 150	
13C5-PFPEA	14.4	93.2	20 - 150	
13C5-PFHXA	7.21	87.1	20 - 150	
13C4-PFHFA	7.21	93.0	20 - 150	
13C8-PFOA	7.21	93.8	20 - 150	
13C9-PFNA	3.61	82.8	20 - 150	
13C6-PFDA	3.61	105	20 - 150	
13C7-PFUnA	3.61	107	20 - 150	
13C2-PFDOA	3.61	99.3	20 - 150	
13C2-PFTEDA	3.61	91.4	20 - 150	
13C3-PFBS	7.21	84.7	20 - 150	
13C3-PFHXS	7.21	90.5	20 - 150	
13C8-PFOS	7.21	90.0	20 - 150	
13C2-4:2FTS	14.4	108	20 - 150	
13C2-6:2FTS	14.4	91.4	20 - 150	
13C2-8:2FTS	14.4	123	20 - 150	
13C8-PFOSA	7.21	58.2	20 - 150	
D5-NETFOSA	7.21	39.9	20 - 150	
D3-NMEFOSA	7.21	40.0	20 - 150	
D3-NMEFOSAA	14.4	94.0	20 - 150	
D5-NETFOSAA	14.4	142	20 - 150	
D7-NMEFOSE	72.1	46.6	20 - 150	
D9-NETFOSSE	72.1	44.7	20 - 150	
13C3-HFPO-DA	28.9	82.4	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 22L0127
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
AF-RHMW10-WGN01B-2212W2 (22L0127-02) , ng/L		Lab File ID: S2022-12-20A (16)		Analyzed: 12/20/22 13:16
13C4-PFBA	29.5	82.9	20 - 150	
13C5-PFPEA	14.8	94.0	20 - 150	
13C5-PFHXA	7.39	88.2	20 - 150	
13C4-PFHPA	7.39	96.8	20 - 150	
13C8-PFOA	7.39	88.3	20 - 150	
13C9-PFNA	3.69	92.5	20 - 150	
13C6-PFDA	3.69	94.4	20 - 150	
13C7-PFUnA	3.69	64.1	20 - 150	
13C2-PFDOA	3.69	68.5	20 - 150	
13C2-PFTEDA	3.69	50.7	20 - 150	
13C3-PFBS	7.39	93.4	20 - 150	
13C3-PFHXS	7.39	99.7	20 - 150	
13C8-PFOS	7.39	100	20 - 150	
13C2-4:2FTS	14.8	240	20 - 150	*
13C2-6:2FTS	14.8	143	20 - 150	
13C2-8:2FTS	14.8	131	20 - 150	
13C8-PFOSA	7.39	96.6	20 - 150	
D5-NETFOSA	7.39	46.9	20 - 150	
D3-NMEFOSA	7.39	64.6	20 - 150	
D3-NMEFOSAA	14.8	116	20 - 150	
D5-NETFOSAA	14.8	121	20 - 150	
D7-NMEFOSE	73.9	92.1	20 - 150	
D9-NETFOSSE	73.9	63.4	20 - 150	
13C3-HFPO-DA	29.5	81.2	20 - 150	
AF-RHMW10-WGN01B-2212W2 (22L0127-02RE1) , ng/L		Lab File ID: S2022-12-20A (17)		Analyzed: 12/20/22 13:29
13C2-4:2FTS	14.8	114	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 22L0127
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
Blank (BBL0355-BLK1) . ng/L	Lab File ID: S2022-12-20A (11)			Analyzed: 12/20/22 12:12
13C4-PFBA	32.0	98.5	20 - 150	
13C5-PFPEA	16.0	104	20 - 150	
13C5-PFHXA	8.00	104	20 - 150	
13C4-PFHPA	8.00	91.2	20 - 150	
13C8-PFOA	8.00	86.8	20 - 150	
13C9-PFNA	4.00	93.4	20 - 150	
13C6-PFDA	4.00	99.8	20 - 150	
13C7-PFUnA	4.00	108	20 - 150	
13C2-PFDOA	4.00	99.5	20 - 150	
13C2-PFTEDA	4.00	112	20 - 150	
13C3-PFBS	8.00	98.6	20 - 150	
13C3-PFHXS	8.00	91.7	20 - 150	
13C8-PFOS	8.00	106	20 - 150	
13C2-4:2FTS	16.0	109	20 - 150	
13C2-6:2FTS	16.0	99.4	20 - 150	
13C2-8:2FTS	16.0	111	20 - 150	
13C8-PFOSA	8.00	98.3	20 - 150	
D5-NETFOSA	8.00	56.3	20 - 150	
D3-NMEFOSA	8.00	55.3	20 - 150	
D3-NMEFOSAA	16.0	104	20 - 150	
D5-NETFOSAA	16.0	117	20 - 150	
D7-NMEFOSE	80.0	94.7	20 - 150	
D9-NETFOSE	80.0	94.5	20 - 150	
13C3-HFPO-DA	32.0	99.3	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 22L0127
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
LCS (BBL0355-BS1) . ng/L	Lab File ID: S2022-12-20A (12)			Analyzed: 12/20/22 12:25
13C4-PFBA	32.0	98.0	20 - 150	
13C5-PFPEA	16.0	92.6	20 - 150	
13C5-PFHXA	8.00	92.8	20 - 150	
13C4-PFHPA	8.00	93.9	20 - 150	
13C8-PFOA	8.00	102	20 - 150	
13C9-PFNA	4.00	102	20 - 150	
13C6-PFDA	4.00	97.7	20 - 150	
13C7-PFUnA	4.00	110	20 - 150	
13C2-PFDOA	4.00	112	20 - 150	
13C2-PFTEDA	4.00	122	20 - 150	
13C3-PFBS	8.00	110	20 - 150	
13C3-PFHXS	8.00	106	20 - 150	
13C8-PFOS	8.00	92.7	20 - 150	
13C2-4:2FTS	16.0	109	20 - 150	
13C2-6:2FTS	16.0	104	20 - 150	
13C2-8:2FTS	16.0	91.7	20 - 150	
13C8-PFOSA	8.00	104	20 - 150	
D5-NETFOSA	8.00	61.0	20 - 150	
D3-NMEFOSA	8.00	66.9	20 - 150	
D3-NMEFOSAA	16.0	106	20 - 150	
D5-NETFOSAA	16.0	122	20 - 150	
D7-NMEFOSE	80.0	92.4	20 - 150	
D9-NETFOSE	80.0	88.5	20 - 150	
13C3-HFPO-DA	32.0	91.4	20 - 150	

SURROGATE SUMMARY SHEET

EPA 1633

Client: AECOM
 Work Order: 22L0127
 Project: Red Hill AFFF Assessment Sampling

Surrogate Compound	Spike level	% Recovery	Recovery Limits	Q
MRL Check (BBL0355-MRL1) . ng/L	Lab File ID: S2022-12-20A (37)			Analyzed: 12/20/22 19:04
13C4-PFBA	32.0	99.3	20 - 150	
13C5-PFPEA	16.0	92.3	20 - 150	
13C5-PFHXA	8.00	88.7	20 - 150	
13C4-PFHPA	8.00	79.5	20 - 150	
13C8-PFOA	8.00	91.5	20 - 150	
13C9-PFNA	4.00	115	20 - 150	
13C6-PFDA	4.00	92.2	20 - 150	
13C7-PFUnA	4.00	107	20 - 150	
13C2-PFDOA	4.00	96.0	20 - 150	
13C2-PFTEDA	4.00	88.4	20 - 150	
13C3-PFBS	8.00	97.6	20 - 150	
13C3-PFHXS	8.00	96.4	20 - 150	
13C8-PFOS	8.00	91.9	20 - 150	
13C2-4:2FTS	16.0	105	20 - 150	
13C2-6:2FTS	16.0	92.7	20 - 150	
13C2-8:2FTS	16.0	97.0	20 - 150	
13C8-PFOSA	8.00	98.6	20 - 150	
D5-NETFOSA	8.00	62.8	20 - 150	
D3-NMEFOSA	8.00	58.5	20 - 150	
D3-NMEFOSAA	16.0	105	20 - 150	
D5-NETFOSAA	16.0	115	20 - 150	
D7-NMEFOSE	80.0	83.0	20 - 150	
D9-NETFOSE	80.0	79.2	20 - 150	
13C3-HFPO-DA	32.0	91.2	20 - 150	

METHOD BLANK SUMMARY**EPA 1633**

Laboratory:	APPL, LLC	Work Order:	22L0127		
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling		
Blank ID:	BBL0355-BLK1	Batch:	BBL0355	Prepared:	12/19/2022 08:59

Client Sample ID	Laboratory Sample ID	Lab File ID	Time Analyzed
LCS	BBL0355-BS1	S2022-12-20A (12)	12:25
AF-RHMW04-WGN01B-2212W2	22L0127-01	S2022-12-20A (14)	12:50
AF-RHMW10-WGN01B-2212W2	22L0127-02	S2022-12-20A (16)	13:16
DF 10	22L0127-02RE1	S2022-12-20A (17)	13:29
MRL Check	BBL0355-MRL1	S2022-12-20A (37)	19:04

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	22L0127
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BBL0355-BLK1
Sampled:		Prepared:	12/19/22 08:59
Solids:		Preparation:	1633
Batch:	BBL0355	Sequence:	SB03903
Column:	1	Calibration:	2251019
		Instrument:	Saphira
		File ID:	S2022-12-20A (11)
		Analyzed:	12/20/22 12:12
		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	0.20 U	0.40	0.20	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	0.20 U	0.40	0.20	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	0.20 U	0.40	0.20	0.20	U
PFBS	0.20 U	0.40	0.20	0.037	U
PFPEs	0.20 U	0.40	0.20	0.063	U
PFHXS	0.20 U	0.40	0.20	0.032	U
PFHPS	0.20 U	0.40	0.20	0.051	U
PFOS	0.0827 J	0.40	0.20	0.064	J
PFNS	0.20 U	0.40	0.20	0.12	U
PFDS	0.20 U	0.40	0.20	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	0.20 U	0.40	0.20	0.10	U
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:	22L0127
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BBL0355-BLK1
Sampled:		File ID:	S2022-12-20A (11)
Solids:		Prepared:	12/19/22 08:59
Batch:	BBL0355	Analyzed:	12/20/22 12:12
Column:	1	Preparation:	1633
		Dilution:	1
		Calibration:	2251019
		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: 22L0127

Client: AECOM

Project: Red Hill AFFF Assessment Sampling

Matrix: Water

Preparation: 1633

Batch: BBL0355

Laboratory ID: BBL0355-BS1

Column:

ANALYTE	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC.	QC LIMITS REC.
PFBA	16.0	15.1	94.6	40 - 150
PFPEA	8.00	8.03	100	40 - 150
PFHXA	4.00	3.59	89.8	40 - 150
PFHPA	4.00	3.85	96.2	40 - 150
PFOA	4.00	4.29	107	40 - 150
PFNA	4.00	4.25	106	40 - 150
PFDA	4.00	4.58	115	40 - 150
PFUnA	4.00	4.33	108	40 - 150
PFDOA	4.00	3.66	91.5	40 - 150
PFTRDA	4.00	4.39	110	40 - 150
PFTEDA	4.00	3.25	81.3	40 - 150
PFBS	3.54	3.30	93.2	40 - 150
PFPEs	3.76	3.33	88.5	40 - 150
PFHXS	3.66	3.41	93.2	40 - 150
PFHPS	3.82	3.99	104	40 - 150
PFOS	3.72	3.96	107	40 - 150
PFNS	3.84	4.43	115	40 - 150
PFDS	3.86	4.05	105	40 - 150
PFDOS	3.88	4.01	103	40 - 150
4:2FTS	15.0	14.6	97.5	40 - 150
6:2FTS	15.2	14.4	94.5	40 - 150
8:2FTS	15.4	16.7	109	40 - 150
PFOSA	4.00	4.02	100	40 - 150
NMeFOSA	16.0	15.9	99.7	40 - 150
NEtFOSA	16.0	16.2	101	40 - 150
NMeFOSAA	4.00	3.46	86.5	40 - 150
NEtFOSAA	4.00	3.19	79.8	40 - 150
NMeFOSE	16.0	16.8	105	40 - 150
NEtFOSE	16.0	16.0	100	40 - 150
HFPO-DA	8.00	7.53	94.2	40 - 150
ADONA	7.56	7.08	93.7	40 - 150
PFEESA	7.12	6.79	95.3	40 - 150
PFMPA	8.00	7.30	91.2	40 - 150
PFMBA	8.00	7.58	94.7	40 - 150

LCS / LCS DUPLICATE RECOVERY

EPA 1633

Laboratory: APPL, LLC

Work Order: 22L0127

Client: AECOM

Project: Red Hill AFFF Assessment Sampling

Matrix: Water

Preparation: 1633

Batch: BBL0355

Laboratory ID: BBL0355-BS1

Column:

ANALYTE	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC.	QC LIMITS REC.
NFDHA	8.00	9.74	122	40 - 150
9CL-PF3ONS	7.48	7.76	104	40 - 150
11CL-PF3OUDS	7.56	6.75	89.2	40 - 150
3:3FTCA	16.0	14.6	91.5	40 - 150
5:3FTCA	16.0	14.8	92.7	40 - 150
7:3FTCA	16.0	15.0	93.5	40 - 150

CALIBRATION SUMMARY

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
PFBA	(212.9 / 169.0)	13C4_PFBA_EIS	4.0000	1.0000	y = 0.33209 x (std. dev. = 0.01240) (weighting: None)	%RSE=3.7
PFPeA	(262.9 / 219.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.45268 x (std. dev. = 0.03428) (weighting: None)	%RSE=7.6
PFHxA	(313.0 / 269.0)	13C5_PFHxA_EIS	1.0000	1.0000	y = 0.45363 x (std. dev. = 0.01311) (weighting: None)	%RSE=2.9
PFHpA	(363.0 / 319.0)	13C4_PFHpA_EIS	1.0000	1.0000	y = 0.45149 x (std. dev. = 0.02901) (weighting: None)	%RSE=6.4
PFOA	(413.0 / 369.0)	13C8_PFOA_EIS	1.0000	1.0000	y = 0.47390 x (std. dev. = 0.02405) (weighting: None)	%RSE=5.1
PFNA	(463.0 / 419.0)	13C9_PFNA_EIS	1.0000	1.0000	y = 0.84500 x (std. dev. = 0.05421) (weighting: None)	%RSE=6.4
PFDA	(513.0 / 469.0)	13C6_PFDA_EIS	1.0000	1.0000	y = 0.92195 x (std. dev. = 0.06627) (weighting: None)	%RSE=7.2
PFUnA	(563.0 / 519.0)	13C7_PFUnA_EIS	1.0000	1.0000	y = 0.74528 x (std. dev. = 0.07353) (weighting: None)	%RSE=9.9
PFDoA	(613.0 / 569.0)	13C2_PFDoA_EIS	1.0000	1.0000	y = 0.80102 x (std. dev. = 0.06222) (weighting: None)	%RSE=7.8
PFTTrDA	(663.0 / 619.0)	13C2_PFTTrDA_EIS	1.0000	1.0000	y = 0.66105 x (std. dev. = 0.10764) (weighting: None)	%RSE=16.3
PFTeDA	(713.0 / 669.0)	13C2_PFTeDA_EIS	1.0000	1.0000	y = 0.95705 x (std. dev. = 0.11854) (weighting: None)	%RSE=12.4
PFBS	(298.9 / 80.0)	13C3_PFBS_EIS	1.0000	0.8847	y = 0.24164 x (std. dev. = 0.01541) (weighting: None)	%RSE=6.4
PFPeS	(349.0 / 80.0)	13C3_PFPeS_EIS	1.0000	0.9384	y = 0.88020 x (std. dev. = 0.05216) (weighting: None)	%RSE=5.9
PFHxS	(399.0 / 80.0)	13C3_PFHxS_EIS	1.0000	0.9110	y = 0.72440 x (std. dev. = 0.03591) (weighting: None)	%RSE=5.0
PFHpS	(449.0 / 80.0)	13C8_PFOA_EIS	1.0000	0.9514	y = 0.42173 x (std. dev. = 0.02988) (weighting: None)	%RSE=7.1
PFOS	(499.0 / 80.0)	13C8_PFOA_EIS	1.0000	0.9275	y = 0.50970 x (std. dev. = 0.03059) (weighting: None)	%RSE=6.0
PFNS	(549.0 / 80.0)	13C8_PFOA_EIS	1.0000	0.9599	y = 0.60657 x (std. dev. = 0.03125) (weighting: None)	%RSE=5.2
PFDS	(599.0 / 80.0)	13C8_PFOA_EIS	1.0000	0.9631	y = 0.75099 x (std. dev. = 0.04265) (weighting: None)	%RSE=5.7
PFDoS	(698.9 / 80.0)	13C8_PFOA_EIS	1.0000	0.9696	y = 0.39463 x (std. dev. = 0.04574) (weighting: None)	%RSE=11.6
4:2FTS	(327.0 / 307.0)	13C2_4:2FTS_EIS	4.0000	0.9345	y = 2.98035 x (std. dev. = 0.24214) (weighting: None)	%RSE=8.1
6:2FTS	(427.0 / 407.0)	13C2_6:2FTS_EIS	4.0000	0.9490	y = 1.46534 x (std. dev. = 0.08435) (weighting: None)	%RSE=5.8
8:2FTS	(527.0 / 507.0)	13C2_8:2FTS_EIS	4.0000	0.9583	y = 1.40461 x (std. dev. = 0.14737) (weighting: None)	%RSE=10.5
PFOSA	(498.0 / 78.0)	13C8_PFOA_EIS	1.0000	1.0000	y = 0.49766 x (std. dev. = 0.03313) (weighting: None)	%RSE=6.7
NMeFOSA	(511.9 / 219.0)	D3_NMeFOSA_EIS	4.0000	1.0000	y = 1.59569 x (std. dev. = 0.19395) (weighting: None)	%RSE=12.2
NEiFOSA	(526.0 / 219.0)	D5_NEiFOSA_EIS	4.0000	1.0000	y = 1.82381 x (std. dev. = 0.12868) (weighting: None)	%RSE=7.1
NMeFOSAA	(570.0 / 419.0)	D3_MeFOSAA_EIS	1.0000	1.0000	y = 0.18118 x (std. dev. = 0.01548) (weighting: None)	%RSE=8.5
NEiFOSAA	(584.0 / 419.0)	D5_EiFOSAA_EIS	1.0000	1.0000	y = 0.22536 x (std. dev. = 0.02619) (weighting: None)	%RSE=11.6
NMeFOSE	(616.1 / 59.0)	D7_NMeFOSE_EIS	4.0000	1.0000	y = 0.25467 x (std. dev. = 0.01813) (weighting: None)	%RSE=7.1
NEiFOSE	(630.0 / 59.0)	D9_NEiFOSE_EIS	4.0000	1.0000	y = 0.12767 x (std. dev. = 0.00843) (weighting: None)	%RSE=6.6
HFPO-DA	(285.0 / 169.0)	13C3_HFPODA_EIS	2.0000	1.0000	y = 0.15276 x (std. dev. = 0.01106) (weighting: None)	%RSE=7.2
ADONA	(377.0 / 85.0)	13C3_HFPODA_EIS	2.0000	0.9427	y = 0.59697 x (std. dev. = 0.04853) (weighting: None)	%RSE=8.1
9Cl-Pf3ONS	(531.0 / 351.0)	13C3_HFPODA_EIS	2.0000	0.9333	y = 1.67596 x (std. dev. = 0.20836) (weighting: None)	%RSE=12.4
11Cl-Pf3OUDS	(631.0 / 451.0)	13C3_HFPODA_EIS	2.0000	0.9432	y = 1.11613 x (std. dev. = 0.09455) (weighting: None)	%RSE=8.5
3:3FTCA	(241.0 / 177.0)	13C5_PFPeA_EIS	4.0000	1.0000	y = 0.03883 x (std. dev. = 0.00466) (weighting: None)	%RSE=12.0
5:3FTCA	(341.0 / 236.7)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.36948 x (std. dev. = 0.01999) (weighting: None)	%RSE=5.4
7:3FTCA	(441.0 / 317.0)	13C5_PFHxA_EIS	4.0000	1.0000	y = 0.41698 x (std. dev. = 0.02172) (weighting: None)	%RSE=5.2
PFEESA	(315.0 / 135.0)	13C5_PFHxA_EIS	2.0000	0.8925	y = 0.83150 x (std. dev. = 0.05357) (weighting: None)	%RSE=6.4
PFMPA	(229.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.12218 x (std. dev. = 0.00653) (weighting: None)	%RSE=5.3
PFMBA	(279.0 / 85.0)	13C5_PFPeA_EIS	2.0000	1.0000	y = 0.39886 x (std. dev. = 0.01939) (weighting: None)	%RSE=4.9
NFDHA	(201.0 / 85.0)	13C5_PFHxA_EIS	2.0000	1.0000	y = 0.01787 x + 0.00104 (r = 0.99801) (weighting: 1 / x)	%RSE=8.3
13C3_PFBA_IIS	(216.0 / 172.0)	13C3_PFBA_IIS	1.0000	1.0000	y = 87429.5049 x	%RSD=8.4
13C2_PFHxA_IIS	(315.1 / 270.0)	13C2_PFHxA_IIS	1.0000	1.0000	y = 131575.6029 x	%RSD=8.3
13C4_PFOA_IIS	(417.0 / 372.0)	13C4_PFOA_IIS	1.0000	1.0000	y = 125169.4661 x	%RSD=5.8
13C5_PFNA_IIS	(468.0 / 423.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 99817.5077 x	%RSD=8.6
13C2_PFDA_IIS	(515.1 / 470.1)	13C2_PFDA_IIS	1.0000	1.0000	y = 103702.9640 x	%RSD=8.2
18O2_PFHxS_IIS	(403.0 / 83.9)	18O2_PFHxS_IIS	1.0000	1.0000	y = 236582.8028 x	%RSD=6.4
13C4_PFOA_IIS	(502.8 / 79.9)	13C4_PFOA_IIS	1.0000	1.0000	y = 200620.3053 x	%RSD=11.5

Analyte	(Q1 / Q3)	Internal Standard	Multiplier	AcidFactor	Function	Qualifier
13C4_PFBa_EIS	(217.0 / 172.0)	13C3_PFBa_IIS	8.0000	1.0000	y = 8.2826 x	%RSD=5.6
13C5_PFPaA_EIS	(267.9 / 223.0)	13C2_PFHxA_IIS	4.0000	1.0000	y = 2.9449 x	%RSD=12.6
13C5_PFHxA_EIS	(318.0 / 273.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 2.3544 x	%RSD=12.0
13C4_PFHpA_EIS	(367.0 / 322.0)	13C2_PFHxA_IIS	2.0000	1.0000	y = 2.0801 x	%RSD=9.5
13C8_PFOA_EIS	(421.0 / 376.0)	13C4_PFOA_IIS	2.0000	1.0000	y = 2.2100 x	%RSD=7.9
13C9_PFNA_EIS	(472.0 / 427.0)	13C5_PFNA_IIS	1.0000	1.0000	y = 1.0923 x	%RSD=12.4
13C6_PFDA_EIS	(519.0 / 474.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.3550 x	%RSD=16.2
13C7_PFUaA_EIS	(570.0 / 525.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.9511 x	%RSD=14.4
13C2_PFDaA_EIS	(615.0 / 570.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 2.2003 x	%RSD=6.2
13C2_PFTeDA_EIS	(715.0 / 670.0)	13C2_PFDA_IIS	1.0000	1.0000	y = 1.3373 x	%RSD=17.8
13C3_PFBs_EIS	(302.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 3.2664 x	%RSD=7.3
13C3_PFHxS_EIS	(402.0 / 80.0)	18O2_PFHxS_IIS	2.0000	1.0000	y = 1.6940 x	%RSD=7.7
13C8_PFOs_EIS	(507.0 / 80.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 3.2854 x	%RSD=9.7
13C2_4:2FTS_EIS	(329.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.3684 x	%RSD=9.4
13C2_6:2FTS_EIS	(429.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.4721 x	%RSD=9.4
13C2_8:2FTS_EIS	(529.0 / 81.0)	18O2_PFHxS_IIS	4.0000	1.0000	y = 0.4232 x	%RSD=14.2
13C8_PFOsA_EIS	(506.0 / 78.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 4.7813 x	%RSD=10.6
D3_NMeFOsA_EIS	(515.0 / 169.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 1.1912 x	%RSD=13.0
D5_NeIFOsA_EIS	(531.1 / 169.0)	13C4_PFOs_IIS	2.0000	1.0000	y = 1.1123 x	%RSD=10.8
D3_MeFOsAA_EIS	(573.0 / 419.0)	13C4_PFOs_IIS	4.0000	1.0000	y = 1.5413 x	%RSD=12.6
D5_EiFOsAA_EIS	(589.0 / 419.0)	13C4_PFOs_IIS	4.0000	1.0000	y = 1.2810 x	%RSD=15.0
D7_NMeFOsE_EIS	(623.2 / 58.9)	13C4_PFOs_IIS	20.0000	1.0000	y = 2.2913 x	%RSD=10.5
D9_NeIFOsE_EIS	(639.2 / 58.9)	13C4_PFOs_IIS	20.0000	1.0000	y = 1.2338 x	%RSD=11.7
13C3_HFOpDA_EIS	(287.0 / 169.0)	13C2_PFHxA_IIS	8.0000	1.0000	y = 5.7339 x	%RSD=7.5

x=Concentration Analyte

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

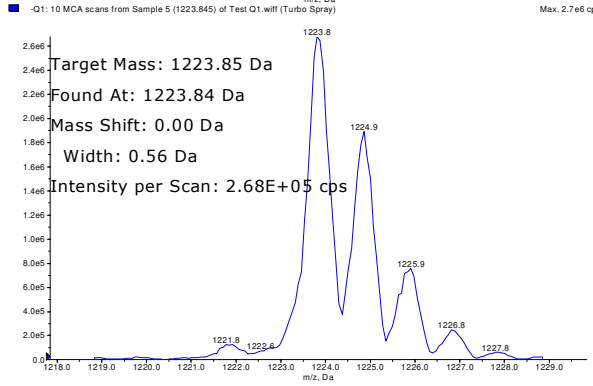
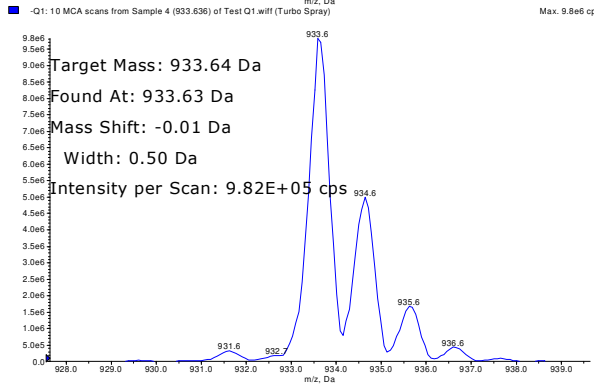
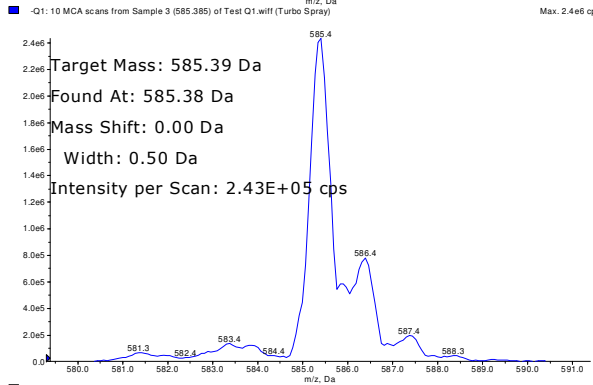
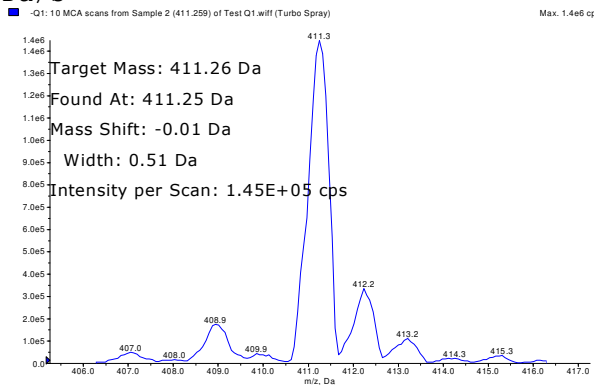
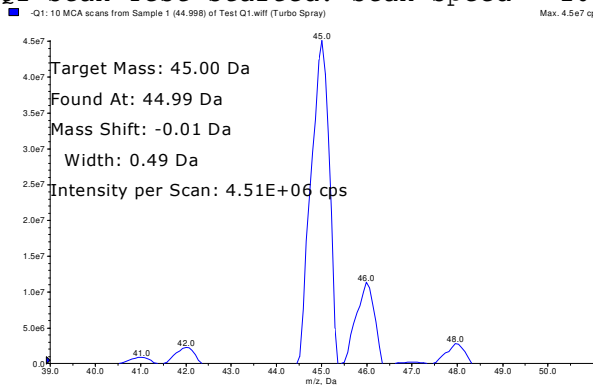
$$\text{Acid Factor} = \frac{\text{Molecular weight Acid}}{\text{Molecular weight Salt}}$$

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

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

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

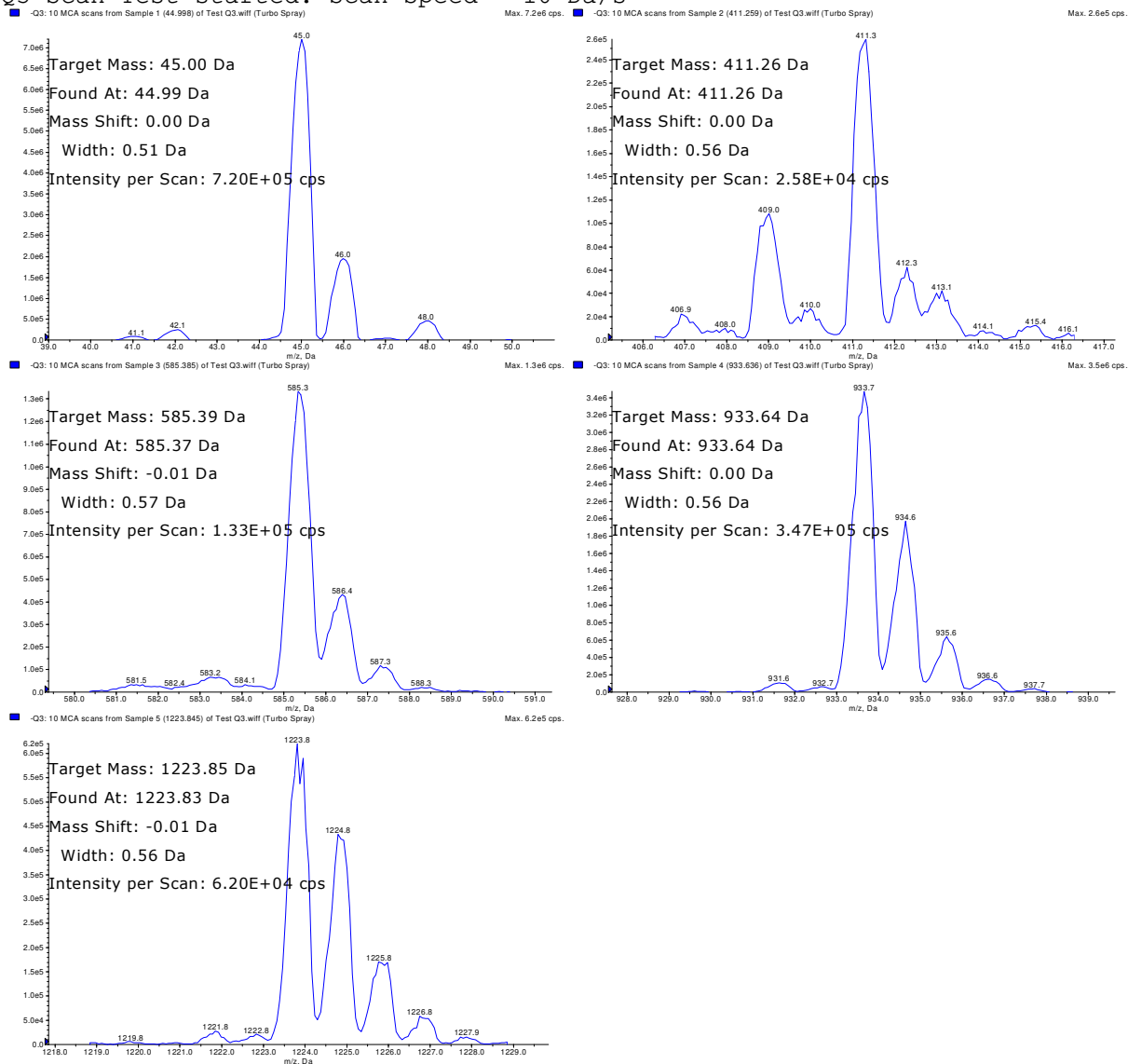
Q1 Scan Test started. Scan Speed = 10 Da/s



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

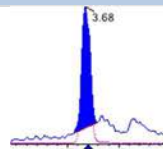
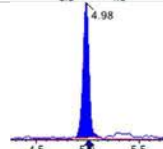
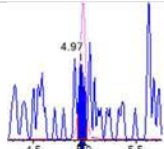
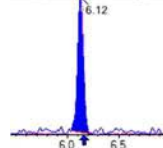
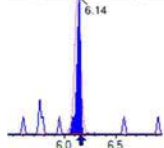
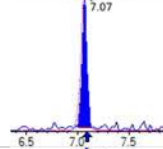
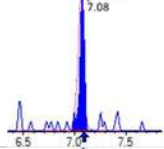
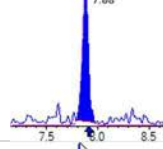
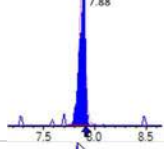
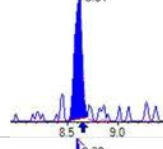
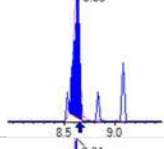
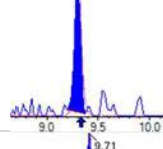
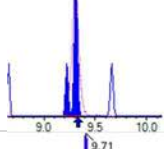
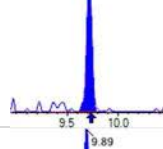
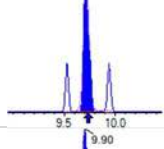
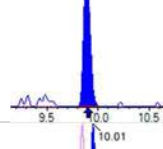
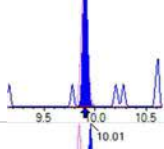
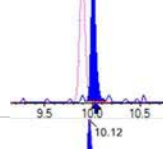
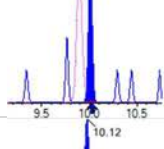
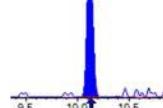
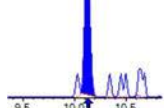
Q3 Scan Test started. Scan Speed = 10 Da/s

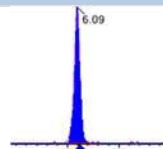
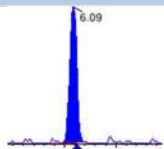
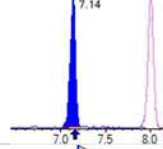
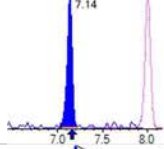
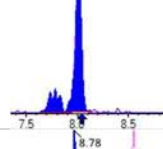
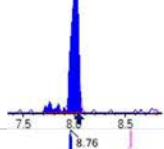
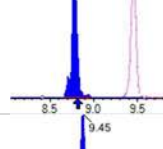
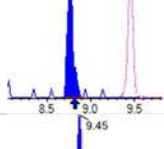
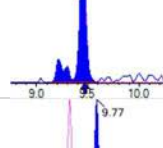
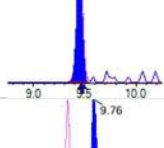
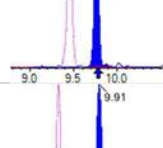
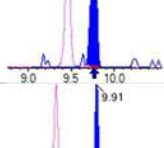
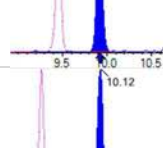
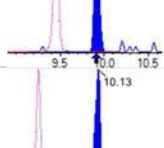
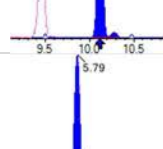
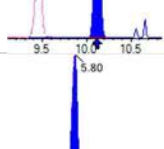
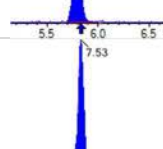
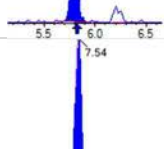
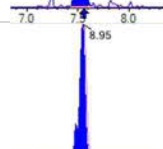
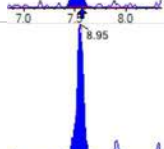




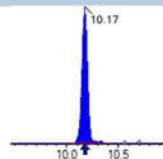
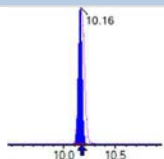
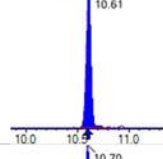
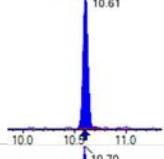
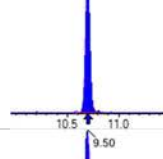
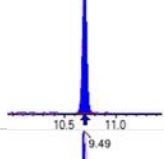
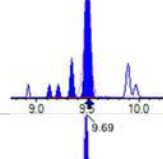
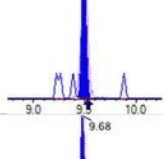
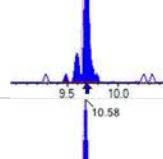
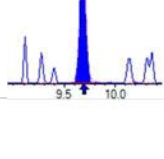
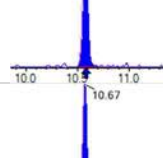
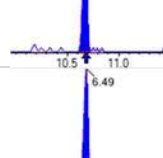
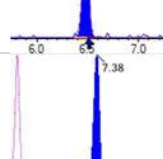
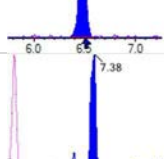
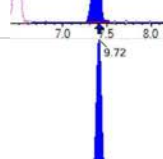
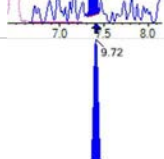
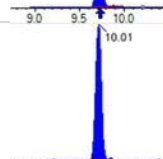
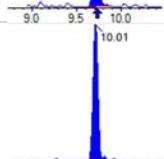
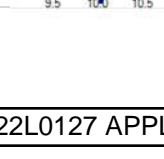
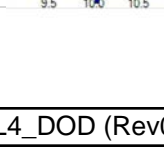
Target Mass	Found At	Delta	Width	Intensity	0.4<Width<0.6
45.00	44.99	0.00	0.51	7.20E+05	PASS
411.26	411.26	0.00	0.56	2.58E+04	PASS
585.39	585.37	-0.01	0.57	1.33E+05	PASS
933.64	933.64	0.00	0.56	3.47E+05	PASS
1223.85	1223.83	-0.01	0.56	6.20E+04	PASS

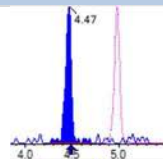
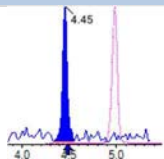
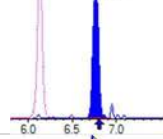
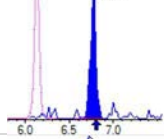
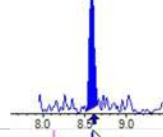
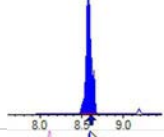
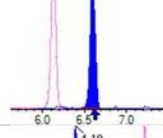
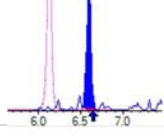
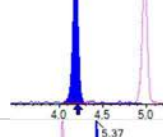
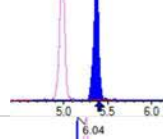
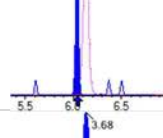
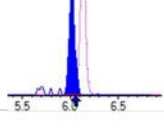
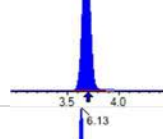
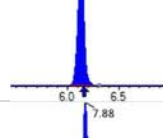
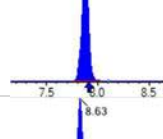
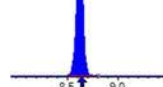
EPA 1633

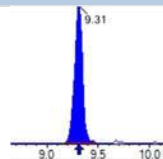
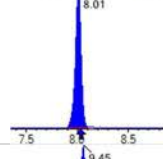
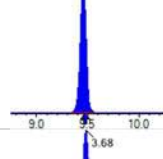
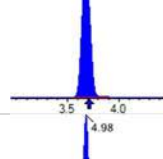
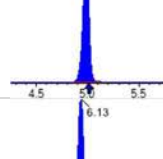
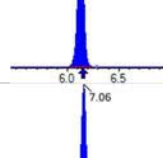
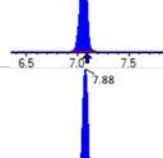
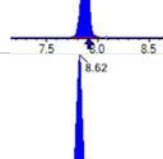
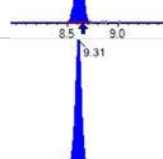
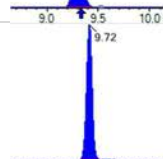
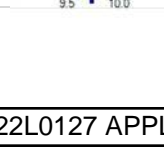
Initial Calibration: SB03856

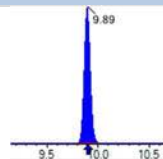
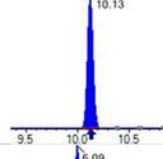
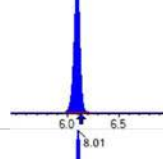
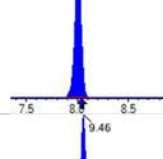
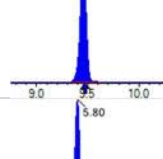
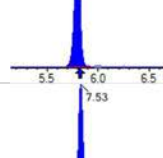
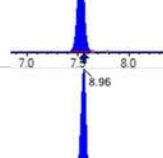
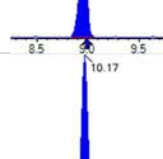
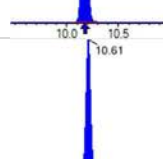
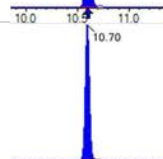
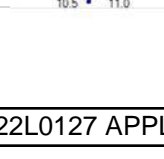
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 26202	(3.68, 1.00) (0.00, N/A, 0.0)	38.8	N/A 0.0 0.0	0.3877 [0.4000]	96.9%			
PFPeA	(262.9 / 219.0) 20216 (262.9 / 69.0) 118	(4.98, 1.00) (0.00, N/A, 0.9)	161.3 63.2	0.0059 6864.0 57.3	0.2206 [0.2000]	110.3%			
PFHxA	(313.0 / 269.0) 15940 (313.0 / 119.0) 1043	(6.12, 1.00) (0.00, N/A, -1.0)	92.3 71.7	0.0654 66.7 66.7	0.1041 [0.1000]	104.1%			
PFHpA	(363.0 / 319.0) 12365 (363.0 / 169.0) 2999	(7.07, 1.00) (0.01, N/A, -0.5)	96.0 43.8	0.2425 77.6 77.6	0.0983 [0.1000]	98.3%			
PFOA	(413.0 / 369.0) 13915 (413.0 / 169.0) 5087	(7.88, 1.00) (0.00, N/A, -0.1)	60.0 190.1	0.3656 108.6 108.6	0.0952 [0.1000]	95.2%			
PFNA	(463.0 / 419.0) 8342 (463.0 / 169.0) 1696	(8.61, 1.00) (-0.01, N/A, -1.2)	31.7 21.9	0.2033 101.3 101.3	0.0886 [0.1000]	88.6%			
PFDA	(513.0 / 469.0) 12858 (513.0 / 169.0) 1054	(9.30, 1.00) (-0.01, N/A, -0.7)	34.4 147.7	0.0820 103.0 103.0	0.0850 [0.1000]	85.0%			
PFUnA	(563.0 / 519.0) 19074 (563.0 / 169.0) 1321	(9.71, 1.00) (0.00, N/A, 0.3)	65.3 137.0	0.0692 61.8 61.8	0.1157 [0.1000]	115.7%			
PFDoA	(613.0 / 569.0) 18508 (613.0 / 169.0) 2538	(9.89, 1.00) (0.00, N/A, -0.9)	76.7 30.9	0.1371 109.2 109.2	0.1139 [0.1000]	113.9%			
PFTTrDA	(663.0 / 619.0) 16689 (663.0 / 169.0) 1589	(10.01, 1.01) (N/A, -0.02, -0.1)	81.3 32.2	0.0952 45.6 45.6	0.1245 [0.1000]	124.5%			IR1,
PFTeDA	(713.0 / 669.0) 15807 (713.0 / 169.0) 2743	(10.12, 1.00) (-0.01, N/A, -0.3)	76.1 24.1	0.1735 76.4 76.4	0.1168 [0.1000]	116.8%			

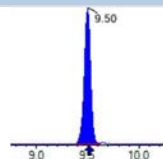
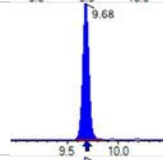
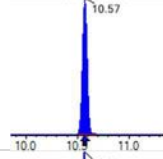
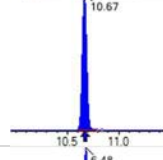
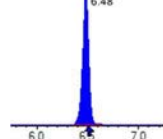
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 19696 (298.9 / 99.0) 15679	(6.09, 1.00) (0.00, N/A, 0.4)	346.5 135.1	0.7961 117.1 117.1	0.0863 [0.0885]	97.6%			
PFPeS	(349.0 / 80.0) 38421 (349.0 / 99.0) 10824	(7.14, 0.89) (N/A, -0.02, 0.1)	287.9 110.0	0.2817 75.5 75.5	0.0955 [0.0938]	101.7%			
PFHxS	(399.0 / 80.0) 32405 (399.0 / 99.0) 12360	(8.01, 1.00) (0.00, N/A, 0.2)	192.6 958681.3	0.3814 111.3 111.3	0.0950 [0.0911]	104.3%			
PFHpS	(449.0 / 80.0) 30903 (449.0 / 99.0) 8109	(8.78, 0.93) (N/A, -0.03, 0.9)	217.4 94.8	0.2624 89.4 89.4	0.0936 [0.0951]	98.4%			
PFOS	(499.0 / 80.0) 41034 (499.0 / 99.0) 11653	(9.45, 1.00) (-0.01, N/A, 0.3)	127.5 60.7	0.2840 124.2 124.2	0.1003 [0.0927]	108.1%			
PFNS	(549.0 / 80.0) 42870 (549.0 / 99.0) 12433	(9.77, 1.03) (N/A, 0.00, 0.3)	192.6 63.8	0.2900 116.2 116.2	0.0911 [0.0960]	94.9%			
PFDS	(599.0 / 80.0) 56078 (599.0 / 99.0) 11971	(9.91, 1.05) (N/A, 0.00, 0.0)	254.4 94.1	0.2135 83.7 83.7	0.0966 [0.0963]	100.3%			
PFDoS	(698.9 / 80.0) 22048 (698.9 / 99.0) 9161	(10.12, 1.07) (N/A, 0.01, -0.4)	324.3 359.2	0.4155 202.2 202.2	0.0728 [0.0970]	75.0%			IR2,
4:2FTS	(327.0 / 307.0) 28317 (327.0 / 81.0) 18233	(5.79, 1.00) (0.00, N/A, -0.4)	356.8 138.5	0.6439 128.8 128.8	0.3965 [0.3738]	106.1%			
6:2FTS	(427.0 / 407.0) 20428 (427.0 / 81.0) 12748	(7.53, 1.00) (0.00, N/A, -0.3)	125.3 118.8	0.6240 87.1 87.1	0.3912 [0.3796]	103.1%			
8:2FTS	(527.0 / 507.0) 14799 (527.0 / 81.0) 12046	(8.95, 1.00) (-0.01, N/A, -0.4)	578549.0 72.9	0.8140 115.7 115.7	0.4163 [0.3833]	108.6%			

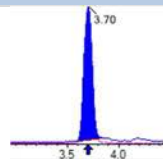
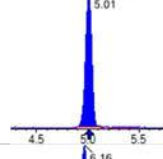
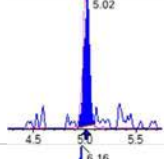
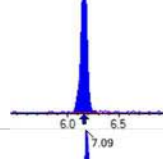
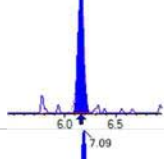
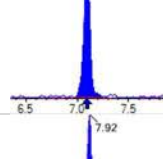
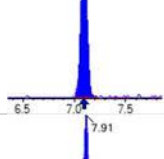
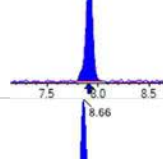
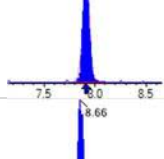
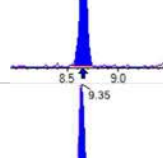
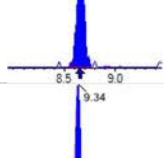
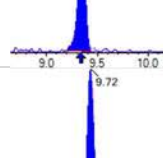
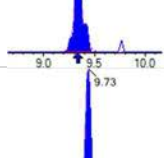
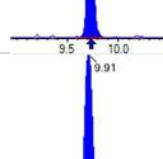
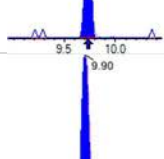
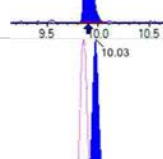
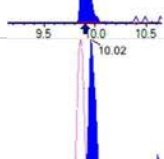
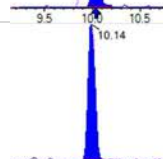
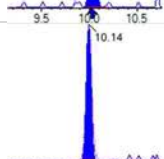
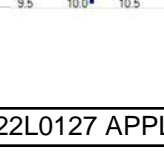
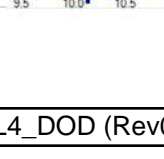
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 49903 (498.0 / 478.0) 619	(10.17, 1.00) (0.00, N/A, 0.9)	308.0 55462.2	0.0124 52.5 52.5	0.1011 [0.1000]	101.1%			
NMeFOSA	(511.9 / 219.0) 36977 (511.9 / 169.0) 25518	(10.61, 1.00) (0.00, N/A, 0.2)	276.3 319.1	0.6901 99.0 99.0	0.4203 [0.4000]	105.1%			
NEIFOSA	(526.0 / 219.0) 41770 (526.0 / 169.0) 41732	(10.70, 1.00) (0.00, N/A, 0.0)	528.0 379.3	0.9991 88.7 88.7	0.4502 [0.4000]	112.6%			
NMeFOSAA	(570.0 / 419.0) 5967 (570.0 / 483.0) 2187	(9.50, 1.00) (0.00, N/A, 0.4)	237539.6 67.4	0.3665 78.0 78.0	0.0904 [0.1000]	90.4%			
NEIFOSAA	(584.0 / 419.0) 8488 (584.0 / 526.0) 4249	(9.69, 1.00) (0.01, N/A, 0.6)	434.2 8600.2	0.5006 65.0 65.0	0.1133 [0.1000]	113.3%			
NMeFOSE	(616.1 / 59.0) 10652	(10.58, 1.00) (0.01, N/A, 0.0)	177.5	N/A 0.0 0.0	0.3682 [0.4000]	92.0%			
NEIFOSE	(630.0 / 59.0) 3054	(10.67, 1.00) (0.01, N/A, 0.0)	99.4	N/A 0.0 0.0	0.4362 [0.4000]	109.0%			
HFPO-DA	(285.0 / 169.0) 11751 (285.0 / 185.0) 34089	(6.49, 1.00) (0.00, N/A, 0.2)	193.0 305.0	2.9009 113.7 113.7	0.2048 [0.2000]	102.4%			
ADONA	(377.0 / 85.0) 47431 (377.0 / 251.0) 6004	(7.38, 1.14) (N/A, -0.03, 0.4)	368.7 23.4	0.1266 100.9 100.9	0.1994 [0.1885]	105.8%			
9CI-PI3ONS	(531.0 / 351.0) 145371 (533.0 / 353.0) 49653	(9.72, 1.50) (N/A, 0.00, 0.1)	394.3 126.1	0.3416 107.8 107.8	0.2155 [0.1867]	115.5%			
11CI-PF3OUDS	(631.0 / 451.0) 83924 (633.0 / 453.0) 28869	(10.01, 1.54) (N/A, 0.00, 0.0)	397.1 340.6	0.3440 117.6 117.6	0.1888 [0.1886]	100.1%			

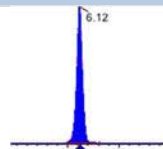
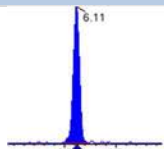
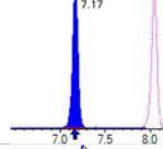
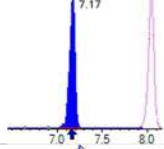
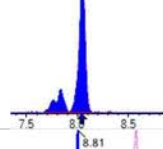
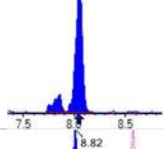
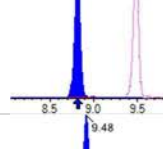
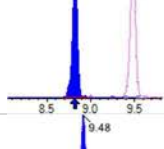
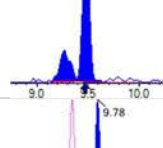
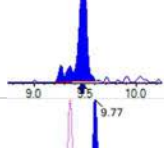
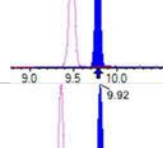
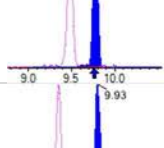
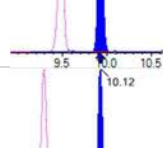
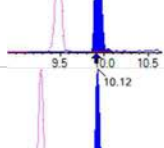
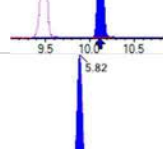
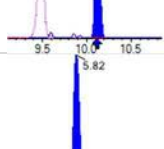
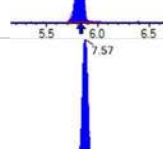
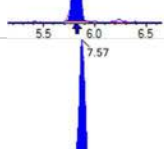
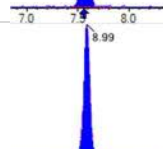
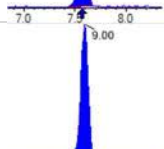


Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 1207 (241.0 / 117.0) 3221	(4.47, 0.90) (N/A, -0.02, 0.8)	576.8 51.4	2.6679 0.2 161.2	0.3072 [0.4000]	76.8%			IR1,IR2,
5:3FTCA	(341.0 / 236.7) 11316 (341.0 / 217.0) 17605	(6.76, 1.10) (N/A, -0.03, -0.5)	127.0 69.0	1.5557 98.5 98.5	0.3628 [0.4000]	90.7%			
7:3FTCA	(441.0 / 317.0) 13582 (441.0 / 337.0) 10341	(8.58, 1.40) (N/A, -0.03, 0.3)	40.4 1069.8	0.7614 93.6 93.6	0.3859 [0.4000]	96.5%			
PFEESA	(315.0 / 135.0) 26919 (315.0 / 83.0) 8686	(6.60, 1.08) (N/A, -0.03, -0.2)	273.9 76.5	0.3227 114.2 114.2	0.1711 [0.1785]	95.9%			
PFMPA	(229.0 / 85.0) 4993	(4.19, 0.84) (N/A, -0.03, 0.0)	281.2	N/A 0.0 0.0	0.2019 [0.2000]	100.9%			
PFMBA	(279.0 / 85.0) 16059	(5.37, 1.08) (N/A, -0.03, 0.0)	473.8	N/A 0.0 0.0	0.1989 [0.2000]	99.4%			
NFDHA	(201.0 / 85.0) 904 (295.0 / 201.0) 3250	(6.04, 0.99) (N/A, 0.00, 1.4)	473.6 86.3	3.5968 0.5 43.7	0.1832 [0.2000]	91.6%			IR1,
13C3_PFBA_IIS	(216.0 / 172.0) 95921	(3.68, N/A) (N/A, -0.03, N/A)	683.2	N/A	1.0971 [1.0000]	109.7% {103.9%}			
13C2_PFHxA_IIS	(315.1 / 270.0) 115566	(6.13, N/A) (N/A, -0.03, N/A)	682.1	N/A	0.8783 [1.0000]	87.8% {91.8%}			
13C4_PFOA_IIS	(417.0 / 372.0) 122944	(7.88, N/A) (N/A, -0.03, N/A)	810.6	N/A	0.9822 [1.0000]	98.2% {96.6%}			
13C5_PFNxA_IIS	(468.0 / 423.0) 100316	(8.63, N/A) (N/A, -0.02, N/A)	308.2	N/A	1.0050 [1.0000]	100.5% {91.3%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ 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	(515.1 / 470.1) 92290	(9.31, N/A) (N/A, -0.01, N/A)	224.1	N/A	0.8899 [1.0000]	89.0% {93.9%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 246307	(8.01, N/A) (N/A, -0.03, N/A)	713.6	N/A	1.0411 [1.0000]	104.1% {97.4%}			
13C4_PFOS_IIS	(502.8 / 79.9) 213167	(9.45, N/A) (N/A, -0.02, N/A)	516.3	N/A	1.0625 [1.0000]	106.3% {96.5%}			
13C4_PFBA_EIS	(217.0 / 172.0) 814007	(3.68, N/A) (N/A, -0.03, N/A)	900.6	N/A	8.1967 [8.0000]	102.5% {112.3%}			
13C5_PFPeA_EIS	(267.9 / 223.0) 404862	(4.98, N/A) (N/A, -0.03, N/A)	945.0	N/A	4.7585 [4.0000]	119.0% {107.3%}			
13C5_PFHxA_EIS	(318.0 / 273.0) 337635	(6.13, N/A) (N/A, -0.03, N/A)	683.6	N/A	2.4818 [2.0000]	124.1% {111.4%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 278644	(7.06, N/A) (N/A, -0.04, N/A)	609.2	N/A	2.3183 [2.0000]	115.9% {101.7%}			
13C8_PFOA_EIS	(421.0 / 376.0) 308557	(7.88, N/A) (N/A, -0.03, N/A)	683.9	N/A	2.2713 [2.0000]	113.6% {121.8%}			
13C9_PFNA_EIS	(472.0 / 427.0) 111370	(8.62, N/A) (N/A, -0.03, N/A)	437.3	N/A	1.0164 [1.0000]	101.6% {106.5%}			
13C6_PFDA_EIS	(519.0 / 474.0) 164122	(9.31, N/A) (N/A, -0.02, N/A)	310.9	N/A	1.3124 [1.0000]	131.2% {115.1%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 221111	(9.72, N/A) (N/A, 0.00, N/A)	288.8	N/A	1.2280 [1.0000]	122.8% {118.2%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ 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) 202842	(9.89, N/A) (N/A, 0.00, N/A)	463.1	N/A	0.9989 [1.0000]	99.9% {94.0%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 141467	(10.13, N/A) (N/A, 0.00, N/A)	332.4	N/A	1.1462 [1.0000]	114.6% {117.0%}			
13C3_PFBs_EIS	(302.0 / 80.0) 835308	(6.09, N/A) (N/A, -0.03, N/A)	911.2	N/A	2.0765 [2.0000]	103.8% {110.0%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 429028	(8.01, N/A) (N/A, -0.03, N/A)	1084.1	N/A	2.0565 [2.0000]	102.8% {111.3%}			
13C8_PFOS_EIS	(507.0 / 80.0) 744475	(9.46, N/A) (N/A, -0.02, N/A)	460.3	N/A	2.1261 [2.0000]	106.3% {111.4%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 89571	(5.80, N/A) (N/A, -0.03, N/A)	542.9	N/A	3.9488 [4.0000]	98.7% {101.6%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 135267	(7.53, N/A) (N/A, -0.04, N/A)	685.8	N/A	4.6533 [4.0000]	116.3% {126.6%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 97003	(8.96, N/A) (N/A, -0.03, N/A)	396.1	N/A	3.7222 [4.0000]	93.1% {102.7%}			
13C8_PFOsa_EIS	(506.0 / 78.0) 991681	(10.17, N/A) (N/A, -0.01, N/A)	1139.4	N/A	1.9460 [2.0000]	97.3% {101.9%}			
D3_NMeFOSA_EIS	(515.0 / 169.0) 220542	(10.61, N/A) (N/A, 0.00, N/A)	881.0	N/A	1.7371 [2.0000]	86.9% {91.9%}			
D5_NEiFOSA_EIS	(531.1 / 169.0) 203470	(10.70, N/A) (N/A, 0.00, N/A)	1035.3	N/A	1.7163 [2.0000]	85.8% {88.5%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ 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) 364127	(9.50, N/A) (N/A, -0.02, N/A)	305.6	N/A	4.4330 [4.0000]	110.8% {127.8%}			
D5_EtFOSAA_EIS	(589.0 / 419.0) 332493	(9.68, N/A) (N/A, -0.01, N/A)	393.7	N/A	4.8706 [4.0000]	121.8% {129.8%}			
D7_NMeFOSE_EIS	(623.2 / 58.9) 454423	(10.57, N/A) (N/A, 0.00, N/A)	991.8	N/A	18.6078 [20.0000]	93.0% {90.7%}			
D9_NEtFOSE_EIS	(639.2 / 58.9) 219374	(10.67, N/A) (N/A, 0.00, N/A)	808.9	N/A	16.6816 [20.0000]	83.4% {82.8%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 751271	(6.48, N/A) (N/A, -0.03, N/A)	846.5	N/A	9.0699 [8.0000]	113.4% {101.0%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(212.9 / 169.0) 125935	(3.70, 1.00) (0.00, N/A, 0.0)	60.6	N/A 0.0 0.0	2.0060 [2.0000]	100.3%			
PFPeA	(262.9 / 219.0) 83381 (262.9 / 69.0) 860	(5.01, 1.00) (0.00, N/A, -0.8)	466.4 41.6	0.0103 12088.7 101.0	0.8863 [1.0000]	88.6%			
PFHxA	(313.0 / 269.0) 67856 (313.0 / 119.0) 6616	(6.16, 1.00) (0.00, N/A, 0.2)	237.0 85.6	0.0975 99.4 99.4	0.5098 [0.5000]	102.0%			
PFHpA	(363.0 / 319.0) 59295 (363.0 / 169.0) 21534	(7.09, 1.00) (0.00, N/A, 0.1)	173.5 225.2	0.3632 116.2 116.2	0.4596 [0.5000]	91.9%			
PFOA	(413.0 / 369.0) 69518 (413.0 / 169.0) 24309	(7.92, 1.00) (0.00, N/A, 0.3)	218.4 295.0	0.3497 103.8 103.8	0.5224 [0.5000]	104.5%			
PFNA	(463.0 / 419.0) 49099 (463.0 / 169.0) 10673	(8.66, 1.00) (0.00, N/A, -0.1)	191.2 71.3	0.2174 108.3 108.3	0.5370 [0.5000]	107.4%			
PFDA	(513.0 / 469.0) 68516 (513.0 / 169.0) 6591	(9.35, 1.00) (0.01, N/A, 0.4)	136.0 554.4	0.0962 120.9 120.9	0.5079 [0.5000]	101.6%			
PFUnA	(563.0 / 519.0) 70748 (563.0 / 169.0) 8146	(9.72, 1.00) (-0.01, N/A, -0.5)	232.7 195.0	0.1151 102.8 102.8	0.4345 [0.5000]	86.9%			
PFDoA	(613.0 / 569.0) 80069 (613.0 / 169.0) 13933	(9.91, 1.00) (0.00, N/A, 0.3)	344.0 84.0	0.1740 138.5 138.5	0.4488 [0.5000]	89.8%			
PFTrDA	(663.0 / 619.0) 63205 (663.0 / 169.0) 14290	(10.03, 1.01) (N/A, 0.01, 0.4)	385.0 80.7	0.2261 108.2 108.2	0.4293 [0.5000]	85.9%			
PFTeDA	(713.0 / 669.0) 64304 (713.0 / 169.0) 10370	(10.14, 1.00) (-0.01, N/A, -0.2)	237.2 180.0	0.1613 71.0 71.0	0.4563 [0.5000]	91.3%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(298.9 / 80.0) 94901 (298.9 / 99.0) 64012	(6.12, 1.00) (0.00, N/A, 0.0)	449.9 323.0	0.6745 99.2 99.2	0.4106 [0.4424]	92.8%			
PFPeS	(349.0 / 80.0) 163811 (349.0 / 99.0) 65481	(7.17, 0.89) (N/A, 0.00, -0.3)	655.4 520.9	0.3997 107.1 107.1	0.4312 [0.4692]	91.9%			
PFHxS	(399.0 / 80.0) 146986 (399.0 / 99.0) 49536	(8.05, 1.00) (0.00, N/A, 0.0)	4139.7 177794.8	0.3370 98.3 98.3	0.4564 [0.4555]	100.2%			
PFHpS	(449.0 / 80.0) 141968 (449.0 / 99.0) 41741	(8.81, 0.93) (N/A, 0.01, -0.4)	579.2 247.2	0.2940 100.2 100.2	0.5119 [0.4757]	107.6%			
PFOS	(499.0 / 80.0) 152442 (499.0 / 99.0) 33844	(9.48, 1.00) (0.00, N/A, 0.0)	196.3 67.2	0.2220 97.1 97.1	0.4434 [0.4637]	95.6%			
PFNS	(549.0 / 80.0) 195844 (549.0 / 99.0) 42470	(9.78, 1.03) (N/A, 0.01, 0.2)	406.9 204.6	0.2169 86.9 86.9	0.4954 [0.4799]	103.2%			
PFDS	(599.0 / 80.0) 249653 (599.0 / 99.0) 56760	(9.92, 1.05) (N/A, 0.01, 0.0)	552.8 198.1	0.2274 89.2 89.2	0.5117 [0.4816]	106.3%			
PFDoS	(698.9 / 80.0) 133694 (698.9 / 99.0) 30985	(10.12, 1.07) (N/A, 0.01, -0.2)	473.6 304.5	0.2318 112.8 112.8	0.5250 [0.4848]	108.3%			
4:2FTS	(327.0 / 307.0) 142430 (327.0 / 81.0) 79086	(5.82, 1.00) (0.00, N/A, 0.1)	754.8 419.1	0.5553 111.1 111.1	1.9023 [1.8691]	101.8%			
6:2FTS	(427.0 / 407.0) 85076 (427.0 / 81.0) 61118	(7.57, 1.00) (0.00, N/A, 0.0)	336.6 342.7	0.7184 100.3 100.3	2.0699 [1.8981]	109.1%			
8:2FTS	(527.0 / 507.0) 70392 (527.0 / 81.0) 47293	(8.99, 1.00) (0.00, N/A, -0.4)	276.5 188.8	0.6719 95.5 95.5	1.8760 [1.9166]	97.9%			

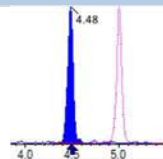
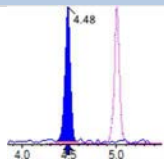
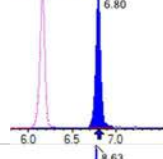
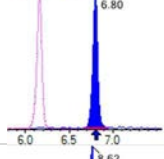
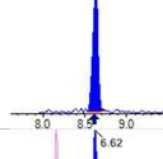
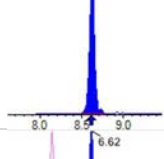
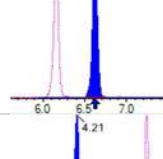
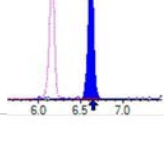
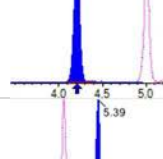
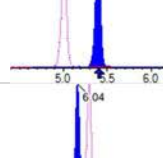
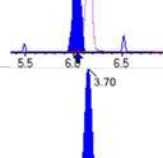
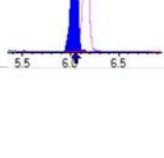
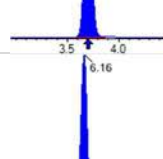
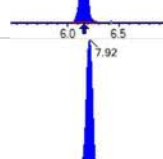
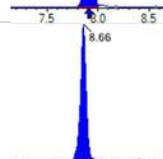



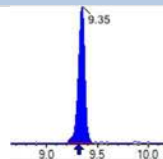
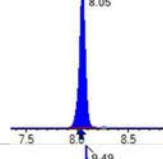
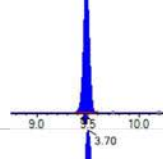
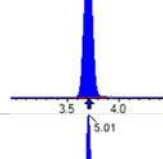
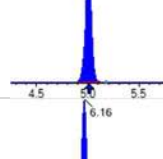
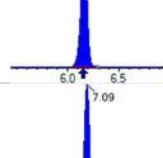
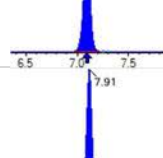
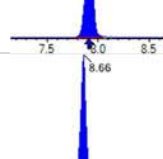
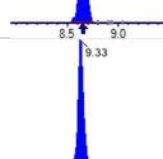
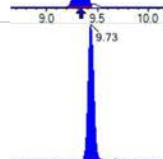
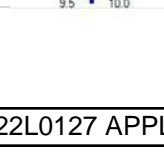
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 Instrument: Saphira
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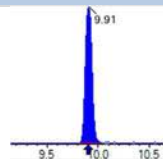
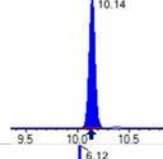
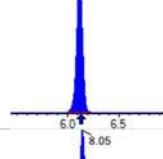
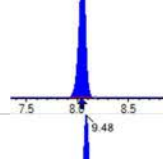
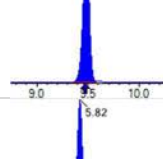
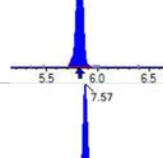
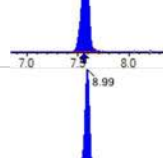
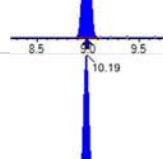
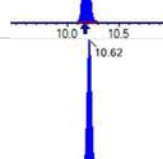
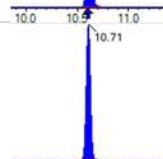
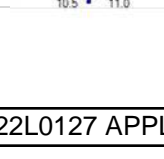
Sample I.D.: SB03856-CAL2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-15A
 Path: S2022-12-15A (2)
 Acquired: 2022/12/15 - 12:46

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) 246376 (498.0 / 478.0) 2721	(10.18 , 1.00) (0.00 , N/A , -0.2)	684.3 57.0	0.0110 46.7 46.7	0.4560 [0.5000]	91.2%			
NMeFOSA	(511.9 / 219.0) 195687 (511.9 / 169.0) 125345	(10.62 , 1.00) (0.00 , N/A , 0.1)	1138.4 1092.6	0.6405 91.9 91.9	2.2683 [2.0000]	113.4%			
NEIFOSA	(526.0 / 219.0) 195155 (526.0 / 169.0) 212089	(10.71 , 1.00) (0.00 , N/A , 0.1)	1386.3 975.7	1.0868 96.5 96.5	1.8947 [2.0000]	94.7%			
NMeFOSAA	(570.0 / 419.0) 23920 (570.0 / 483.0) 11463	(9.53 , 1.00) (0.01 , N/A , 0.9)	215.1 125.1	0.4792 102.0 102.0	0.4311 [0.5000]	86.2%			MI5 DG 2022-12-15
NEIFOSAA	(584.0 / 419.0) 26579 (584.0 / 526.0) 19365	(9.70 , 1.00) (0.00 , N/A , -0.2)	946.9 621744.1	0.7286 94.6 94.6	0.4487 [0.5000]	89.7%			
NMeFOSE	(616.1 / 59.0) 55696	(10.59 , 1.00) (0.01 , N/A , 0.0)	345.7	N/A 0.0 0.0	1.9707 [2.0000]	98.5%			
NEIFOSE	(630.0 / 59.0) 15539	(10.69 , 1.00) (0.01 , N/A , 0.0)	550.5	N/A 0.0 0.0	1.9603 [2.0000]	98.0%			
HFPO-DA	(285.0 / 169.0) 55056 (285.0 / 185.0) 186281	(6.51 , 1.00) (0.00 , N/A , -0.1)	404.6 872.5	3.3835 132.6 132.6	0.9060 [1.0000]	90.6%			
ADONA	(377.0 / 85.0) 219376 (377.0 / 251.0) 26210	(7.42 , 1.14) (N/A , 0.01 , 0.2)	719.5 105.0	0.1195 95.3 95.3	0.8708 [0.9427]	92.4%			
9CI-PI3ONS	(531.0 / 351.0) 677282 (533.0 / 353.0) 221740	(9.73 , 1.49) (N/A , 0.01 , 0.0)	505.8 340.2	0.3274 103.4 103.4	0.9480 [0.9333]	101.6%			
11CI-PF3OUDS	(631.0 / 451.0) 420764 (633.0 / 453.0) 137837	(10.02 , 1.54) (N/A , 0.01 , 0.1)	711.1 793.4	0.3276 112.0 112.0	0.8938 [0.9432]	94.8%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ 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) 8063 (241.0 / 117.0) 11957	(4.48, 0.90) (N/A, -0.01, 0.1)	267.6 159.9	1.4830 0.1 89.6	1.9982 [2.0000]	99.9%			IR1,
5:3FTCA	(341.0 / 236.7) 58587 (341.0 / 217.0) 98879	(6.80, 1.10) (N/A, 0.00, -0.1)	344.3 260.9	1.6877 106.8 106.8	2.1615 [2.0000]	108.1%			
7:3FTCA	(441.0 / 317.0) 62197 (441.0 / 337.0) 56220	(8.63, 1.40) (N/A, 0.01, 0.5)	146.7 253.8	0.9039 111.1 111.1	2.0333 [2.0000]	101.7%			
PFEESA	(315.0 / 135.0) 134371 (315.0 / 83.0) 38381	(6.62, 1.08) (N/A, 0.00, 0.1)	774.4 241.4	0.2856 101.1 101.1	0.9830 [0.8925]	110.1%			
PFMPA	(229.0 / 85.0) 23201	(4.21, 0.84) (N/A, 0.00, 0.0)	590.9	N/A 0.0 0.0	0.9137 [1.0000]	91.4%			
PFMBA	(279.0 / 85.0) 82301	(5.39, 1.08) (N/A, -0.01, 0.0)	837.9	N/A 0.0 0.0	0.9928 [1.0000]	99.3%			
NFDHA	(201.0 / 85.0) 3080 (295.0 / 201.0) 20638	(6.04, 0.98) (N/A, 0.00, 0.2)	526.3 304.5	6.7007 0.8 81.3	1.0583 [1.0000]	105.8%			IR1,
13C3_PFBA_IIS	(216.0 / 172.0) 92259	(3.70, N/A) (N/A, 0.00, N/A)	849.5	N/A	1.0552 [1.0000]	105.5% {100.0%}			
13C2_PFHxA_IIS	(315.1 / 270.0) 134985	(6.16, N/A) (N/A, 0.00, N/A)	615.4	N/A	1.0259 [1.0000]	102.6% {107.3%}			
13C4_PFOA_IIS	(417.0 / 372.0) 132157	(7.92, N/A) (N/A, 0.01, N/A)	465.6	N/A	1.0558 [1.0000]	105.6% {103.9%}			
13C5_PFNA_IIS	(468.0 / 423.0) 108681	(8.66, N/A) (N/A, 0.02, N/A)	569.6	N/A	1.0888 [1.0000]	108.9% {98.9%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(515.1 / 470.1) 95710	(9.35, N/A) (N/A, 0.02, N/A)	351.0	N/A	0.9229 [1.0000]	92.3% { 97.4% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 236997	(8.05, N/A) (N/A, 0.01, N/A)	617.5	N/A	1.0018 [1.0000]	100.2% { 93.7% }			
13C4_PFOS_IIS	(502.8 / 79.9) 200395	(9.49, N/A) (N/A, 0.01, N/A)	455.4	N/A	0.9989 [1.0000]	99.9% { 90.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 756165	(3.70, N/A) (N/A, -0.01, N/A)	916.8	N/A	7.9165 [8.0000]	99.0% { 104.3% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 415663	(5.01, N/A) (N/A, -0.01, N/A)	783.6	N/A	4.1826 [4.0000]	104.6% { 110.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 293436	(6.16, N/A) (N/A, 0.00, N/A)	543.5	N/A	1.8466 [2.0000]	92.3% { 96.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 285768	(7.09, N/A) (N/A, 0.00, N/A)	565.8	N/A	2.0355 [2.0000]	101.8% { 104.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 280809	(7.91, N/A) (N/A, 0.01, N/A)	622.0	N/A	1.9229 [2.0000]	96.1% { 110.8% }			
13C9_PFNA_EIS	(472.0 / 427.0) 108207	(8.66, N/A) (N/A, 0.01, N/A)	317.5	N/A	0.9115 [1.0000]	91.1% { 103.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 146319	(9.33, N/A) (N/A, 0.00, N/A)	283.1	N/A	1.1282 [1.0000]	112.8% { 102.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 218485	(9.73, N/A) (N/A, 0.01, N/A)	483.0	N/A	1.1700 [1.0000]	117.0% { 116.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 222714	(9.91, N/A) (N/A, 0.01, N/A)	333.1	N/A	1.0576 [1.0000]	105.8% { 103.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 147242	(10.14, N/A) (N/A, 0.01, N/A)	499.6	N/A	1.1504 [1.0000]	115.0% { 121.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 846308	(6.12, N/A) (N/A, -0.01, N/A)	852.5	N/A	2.1865 [2.0000]	109.3% { 111.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 404991	(8.05, N/A) (N/A, 0.01, N/A)	823.4	N/A	2.0176 [2.0000]	100.9% { 105.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 625646	(9.48, N/A) (N/A, 0.01, N/A)	504.3	N/A	1.9006 [2.0000]	95.0% { 93.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 93907	(5.82, N/A) (N/A, 0.00, N/A)	535.3	N/A	4.3026 [4.0000]	107.6% { 106.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 106480	(7.57, N/A) (N/A, 0.01, N/A)	575.8	N/A	3.8069 [4.0000]	95.2% { 99.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 102397	(8.99, N/A) (N/A, 0.01, N/A)	382.0	N/A	4.0835 [4.0000]	102.1% { 108.4% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1085721	(10.19, N/A) (N/A, 0.01, N/A)	847.3	N/A	2.2663 [2.0000]	113.3% { 111.6% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 216263	(10.62, N/A) (N/A, 0.01, N/A)	858.4	N/A	1.8120 [2.0000]	90.6% { 90.1% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 225897	(10.71, N/A) (N/A, 0.01, N/A)	1086.7	N/A	2.0269 [2.0000]	101.3% { 98.2% }			

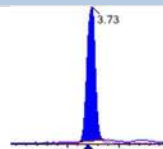
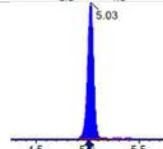
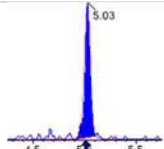
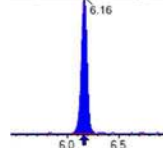
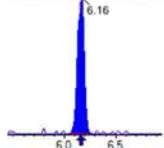
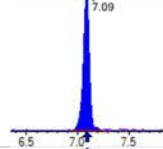
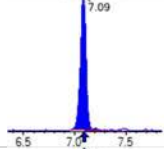
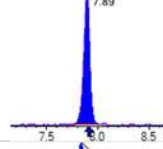
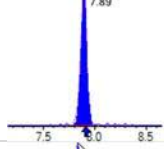
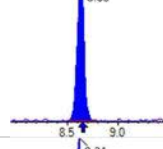
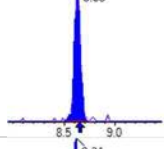
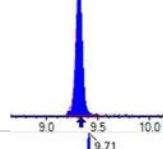
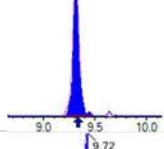
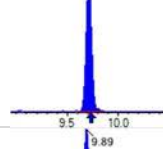
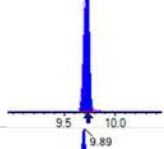
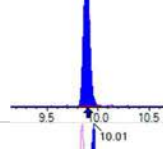
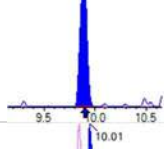
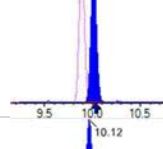
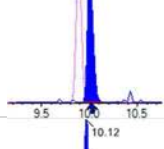
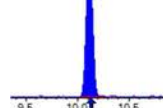
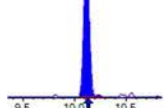


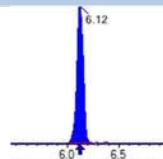
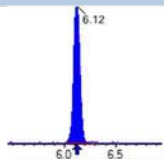
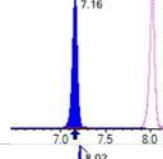
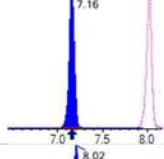
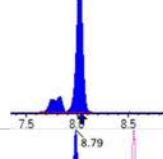
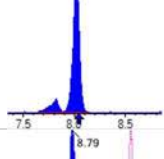
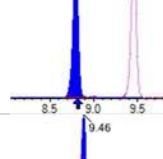
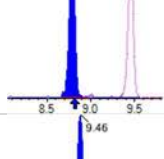
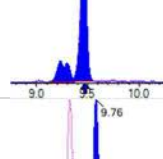
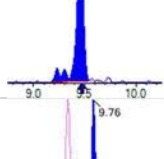
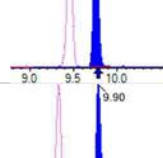
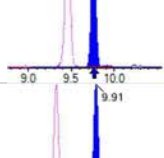
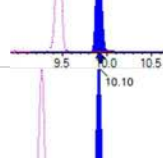
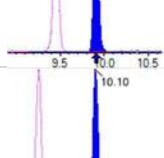
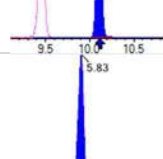
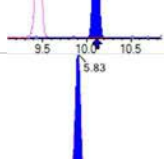
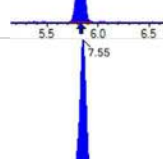
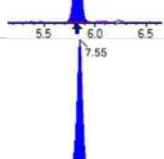
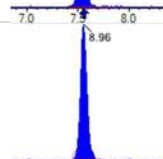
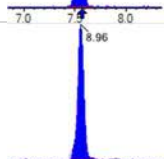
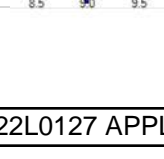
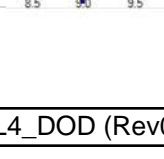
Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03856-CAL2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-15A
 Path: S2022-12-15A (2)
 Acquired: 2022/12/15 - 12:46

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) 306249	(9.52, N/A) (N/A, 0.01, N/A)	299.2	N/A	3.9660 [4.0000]	99.2% { 107.5% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 262860	(9.70, N/A) (N/A, 0.01, N/A)	374.8	N/A	4.0959 [4.0000]	102.4% { 102.6% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 443916	(10.58, N/A) (N/A, 0.01, N/A)	889.6	N/A	19.3361 [20.0000]	96.7% { 88.6% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 248348	(10.68, N/A) (N/A, 0.01, N/A)	1198.5	N/A	20.0883 [20.0000]	100.4% { 93.8% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 795642	(6.51, N/A) (N/A, 0.00, N/A)	779.9	N/A	8.2237 [8.0000]	102.8% { 107.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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	(212.9 / 169.0) 242781	(3.73, 1.00) (0.00, N/A, 0.0)	55.5	N/A 0.0 0.0	3.7127 [4.0000]	92.8%			
PFPeA	(262.9 / 219.0) 175499 (262.9 / 69.0) 1821	(5.03, 1.00) (0.00, N/A, 0.1)	627.6 95.3	0.0104 12160.2 101.6	1.8646 [2.0000]	93.2%			
PFHxA	(313.0 / 269.0) 141999 (313.0 / 119.0) 12558	(6.16, 1.00) (0.00, N/A, 0.3)	422.5 123.8	0.0884 90.2 90.2	1.0016 [1.0000]	100.2%			
PFHpA	(363.0 / 319.0) 118537 (363.0 / 169.0) 35723	(7.09, 1.00) (0.00, N/A, 0.0)	310.3 273.9	0.3014 96.4 96.4	0.9545 [1.0000]	95.4%			
PFOA	(413.0 / 369.0) 122924 (413.0 / 169.0) 45734	(7.89, 1.00) (0.00, N/A, 0.1)	358.9 253.7	0.3720 110.5 110.5	0.9149 [1.0000]	91.5%			
PFNA	(463.0 / 419.0) 98102 (463.0 / 169.0) 19342	(8.63, 1.00) (0.00, N/A, 0.3)	232.8 85.5	0.1972 98.3 98.3	1.0072 [1.0000]	100.7%			
PFDA	(513.0 / 469.0) 128169 (513.0 / 169.0) 15093	(9.31, 1.00) (0.00, N/A, 0.2)	316.1 510.7	0.1178 148.0 148.0	0.9853 [1.0000]	98.5%			
PFUnA	(563.0 / 519.0) 161610 (563.0 / 169.0) 16695	(9.71, 1.00) (0.00, N/A, -0.7)	396.2 496.2	0.1033 92.2 92.2	1.0293 [1.0000]	102.9%			
PFDoA	(613.0 / 569.0) 192579 (613.0 / 169.0) 29493	(9.89, 1.00) (0.00, N/A, 0.0)	497.6 125.3	0.1531 121.9 121.9	0.9661 [1.0000]	96.6%			
PFTTrDA	(663.0 / 619.0) 143079 (663.0 / 169.0) 26671	(10.01, 1.01) (N/A, -0.01, 0.4)	435.6 149.1	0.1864 89.2 89.2	0.8697 [1.0000]	87.0%			
PFTeDA	(713.0 / 669.0) 123213 (713.0 / 169.0) 25972	(10.12, 1.00) (0.00, N/A, -0.1)	334.4 147.5	0.2108 92.9 92.9	0.9785 [1.0000]	97.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(298.9 / 80.0) 186405 (298.9 / 99.0) 120206	(6.12, 1.00) (0.00, N/A, 0.3)	561.7 450.3	0.6449 94.8 94.8	0.8347 [0.8847]	94.3%			
PFPeS	(349.0 / 80.0) 351774 (349.0 / 99.0) 128918	(7.16, 0.89) (N/A, 0.00, 0.2)	771.0 812.1	0.3665 98.2 98.2	0.8695 [0.9384]	92.7%			
PFHxS	(399.0 / 80.0) 293699 (399.0 / 99.0) 99285	(8.02, 1.00) (0.00, N/A, 0.2)	2168.9 33504.3	0.3380 98.6 98.6	0.8563 [0.9110]	94.0%			
PFHpS	(449.0 / 80.0) 289945 (449.0 / 99.0) 75507	(8.79, 0.93) (N/A, -0.01, 0.3)	563.7 283.8	0.2604 88.8 88.8	0.9814 [0.9514]	103.1%			
PFOS	(499.0 / 80.0) 335940 (499.0 / 99.0) 71358	(9.46, 1.00) (0.00, N/A, 0.3)	115.7 95.1	0.2124 92.9 92.9	0.9171 [0.9275]	98.9%			
PFNS	(549.0 / 80.0) 406038 (549.0 / 99.0) 113321	(9.76, 1.03) (N/A, -0.01, 0.2)	640.6 330.1	0.2791 111.8 111.8	0.9640 [0.9599]	100.4%			
PFDS	(599.0 / 80.0) 459883 (599.0 / 99.0) 116836	(9.90, 1.05) (N/A, -0.01, -0.1)	394.2 329.2	0.2541 99.7 99.7	0.8848 [0.9631]	91.9%			
PFDoS	(698.9 / 80.0) 270336 (698.9 / 99.0) 59050	(10.10, 1.07) (N/A, -0.01, 0.2)	385.7 330.2	0.2184 106.3 106.3	0.9965 [0.9696]	102.8%			
4:2FTS	(327.0 / 307.0) 218825 (327.0 / 81.0) 135498	(5.83, 1.00) (0.00, N/A, 0.0)	843.6 544.1	0.6192 123.9 123.9	3.6753 [3.7381]	98.3%			
6:2FTS	(427.0 / 407.0) 151420 (427.0 / 81.0) 98295	(7.55, 1.00) (0.00, N/A, 0.2)	457.2 448.0	0.6492 90.6 90.6	3.6464 [3.7962]	96.1%			
8:2FTS	(527.0 / 507.0) 129977 (527.0 / 81.0) 81360	(8.96, 1.00) (0.00, N/A, -0.1)	436.3 337.4	0.6260 89.0 89.0	4.0635 [3.8332]	106.0%			

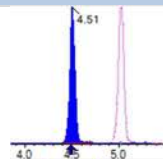
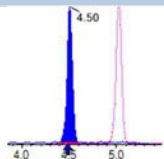
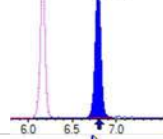
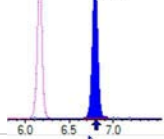
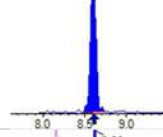
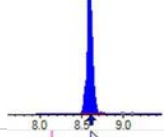
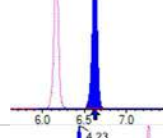
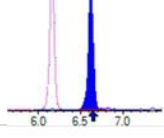
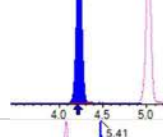
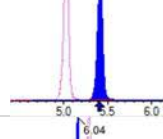
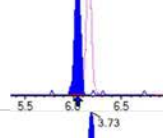
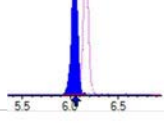
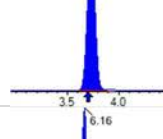
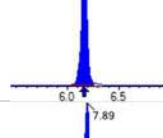
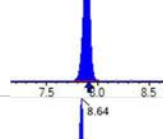
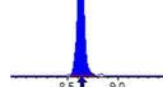


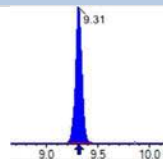
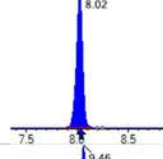
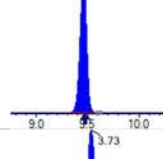
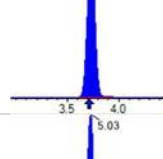
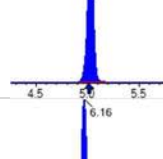
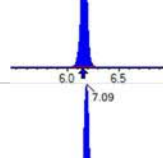
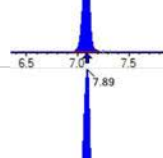
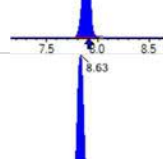
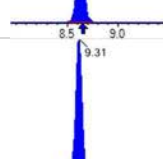
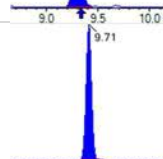
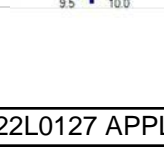
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 Instrument: Saphira
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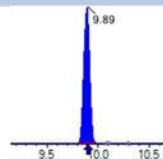
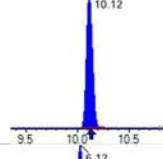
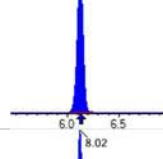
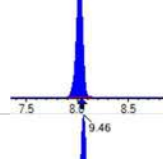
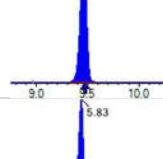
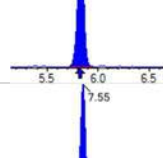
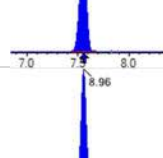
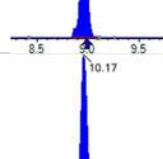
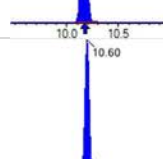
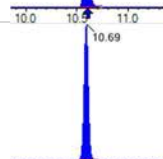
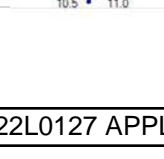
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 Acquisition Method: 1633 2022-12-13.dam

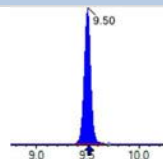
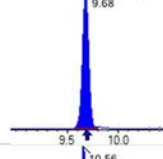
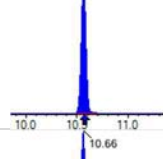
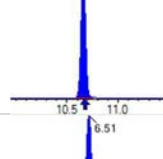
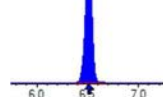
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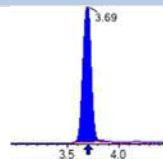
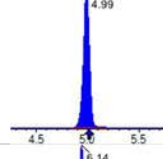
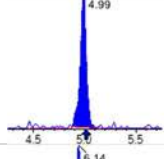
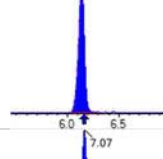
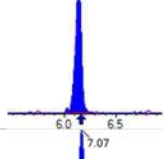
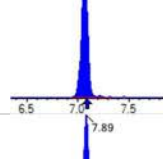
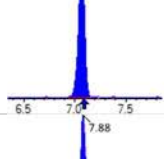
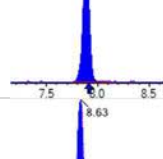
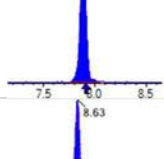
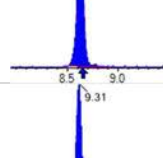
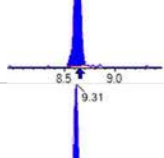
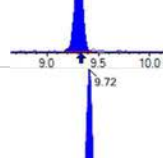
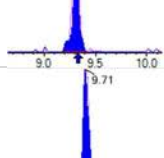
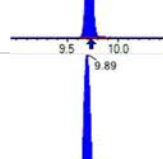
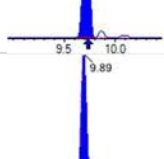
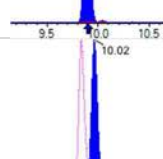
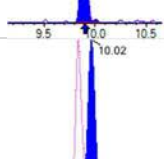
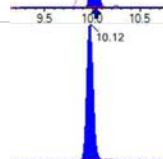
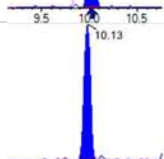
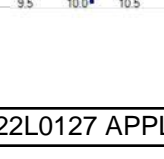
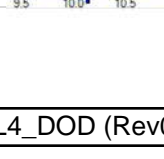
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 474763 (498.0 / 478.0) 10707	(10.17 , 1.00) (0.00 , N/A , -0.3)	586.8 187.2	0.0226 95.4 95.4	0.9163 [1.0000]	91.6%			
NMeFOSA	(511.9 / 219.0) 379988 (511.9 / 169.0) 259345	(10.60 , 1.00) (0.00 , N/A , 0.0)	797.8 732.5	0.6825 97.9 97.9	3.9031 [4.0000]	97.6%			
NEIFOSA	(526.0 / 219.0) 413880 (526.0 / 169.0) 443168	(10.69 , 1.00) (0.00 , N/A , 0.0)	1591.2 1283.7	1.0708 95.1 95.1	3.8021 [4.0000]	95.1%			
NMeFOSAA	(570.0 / 419.0) 53361 (570.0 / 483.0) 33655	(9.50 , 1.00) (0.00 , N/A , -0.1)	182.3 5064.0	0.6307 134.3 134.3	1.0921 [1.0000]	109.2%			
NEIFOSAA	(584.0 / 419.0) 52646 (584.0 / 526.0) 26638	(9.68 , 1.00) (0.00 , N/A , -0.1)	1519.9 109.5	0.5060 65.7 65.7	0.9761 [1.0000]	97.6%			
NMeFOSE	(616.1 / 59.0) 113948	(10.57 , 1.00) (0.01 , N/A , 0.0)	625.5	N/A 0.0 0.0	3.5172 [4.0000]	87.9%			
NEtFOSE	(630.0 / 59.0) 32510	(10.67 , 1.00) (0.01 , N/A , 0.0)	588.6	N/A 0.0 0.0	3.8660 [4.0000]	96.7%			
HFPO-DA	(285.0 / 169.0) 99125 (285.0 / 185.0) 320849	(6.51 , 1.00) (0.00 , N/A , -0.1)	651.9 732.3	3.2368 126.9 126.9	1.7889 [2.0000]	89.4%			
ADONA	(377.0 / 85.0) 483577 (377.0 / 251.0) 55664	(7.40 , 1.14) (N/A , -0.01 , 0.1)	839.4 223.8	0.1151 91.8 91.8	2.1052 [1.8854]	111.7%			
9CI-Pf3ONS	(531.0 / 351.0) 1367263 (533.0 / 353.0) 421697	(9.71 , 1.49) (N/A , -0.01 , -0.1)	931.3 551.8	0.3084 97.4 97.4	2.0990 [1.8665]	112.5%			
11CI-PF3OUDS	(631.0 / 451.0) 898698 (633.0 / 453.0) 262872	(10.00 , 1.54) (N/A , -0.01 , -0.1)	624.7 881.0	0.2925 100.0 100.0	2.0937 [1.8864]	111.0%			

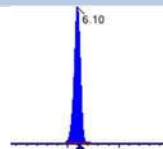
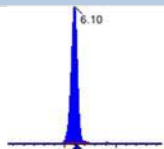
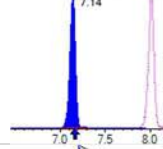
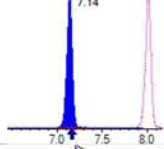
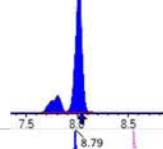
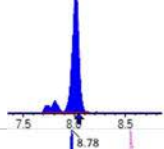
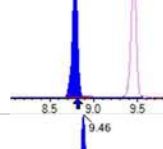
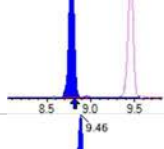
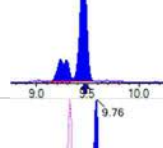
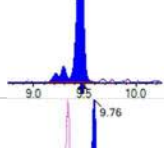
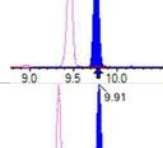
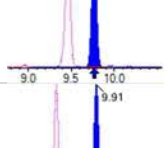
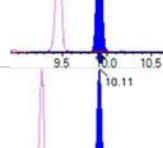
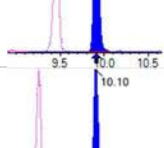
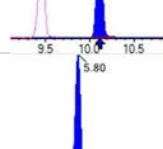
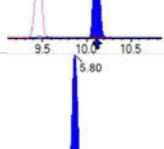
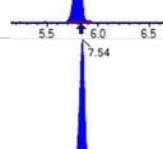
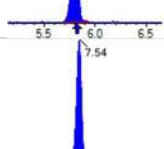
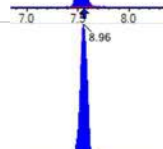
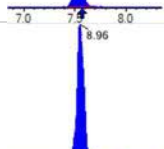


Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 14022 (241.0 / 117.0) 25990	(4.51, 0.90) (N/A, 0.01, 0.0)	451.2 359.3	1.8536 0.1 112.0	3.4734 [4.0000]	86.8%			IR1,
5:3FTCA	(341.0 / 236.7) 118339 (341.0 / 217.0) 191184	(6.79, 1.10) (N/A, -0.01, 0.0)	382.5 454.3	1.6156 102.3 102.3	4.0994 [4.0000]	102.5%			
7:3FTCA	(441.0 / 317.0) 125135 (441.0 / 337.0) 105902	(8.60, 1.40) (N/A, -0.02, 0.3)	251.8 289.5	0.8463 104.1 104.1	3.8411 [4.0000]	96.0%			
PFEESA	(315.0 / 135.0) 252682 (315.0 / 83.0) 67297	(6.62, 1.07) (N/A, 0.00, 0.2)	931.2 358.6	0.2663 94.2 94.2	1.7356 [1.7849]	97.2%			
PFMPA	(229.0 / 85.0) 50570	(4.23, 0.84) (N/A, 0.02, 0.0)	866.7	N/A 0.0 0.0	1.9906 [2.0000]	99.5%			
PFMBA	(279.0 / 85.0) 157043	(5.41, 1.08) (N/A, 0.01, 0.0)	856.4	N/A 0.0 0.0	1.8937 [2.0000]	94.7%			
NFDHA	(201.0 / 85.0) 5618 (295.0 / 201.0) 38932	(6.04, 0.98) (N/A, 0.00, 0.1)	240.1 546.2	6.9300 0.9 84.1	1.8955 [2.0000]	94.8%			IR1,
13C3_PFBa_IIS	(216.0 / 172.0) 85249	(3.73, N/A) (N/A, 0.02, N/A)	718.2	N/A	0.9751 [1.0000]	97.5% {92.4%}			
13C2_PFHxA_IIS	(315.1 / 270.0) 121139	(6.16, N/A) (N/A, 0.00, N/A)	475.7	N/A	0.9207 [1.0000]	92.1% {96.3%}			
13C4_PFOA_IIS	(417.0 / 372.0) 116431	(7.89, N/A) (N/A, -0.01, N/A)	611.0	N/A	0.9302 [1.0000]	93.0% {91.5%}			
13C5_PFNAl_IIS	(468.0 / 423.0) 102082	(8.64, N/A) (N/A, 0.00, N/A)	325.5	N/A	1.0227 [1.0000]	102.3% {92.9%}			

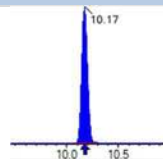
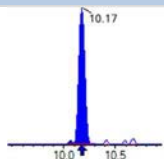
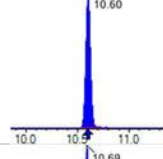
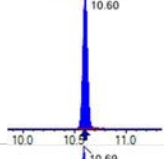
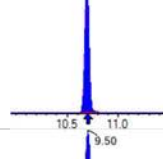
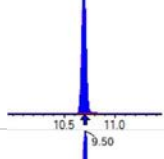
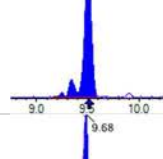
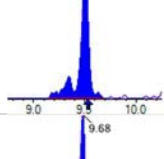
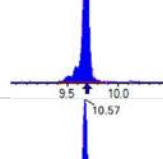
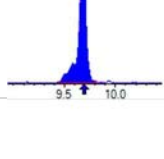
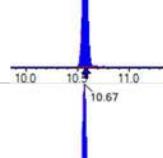
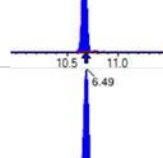
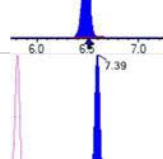
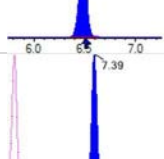
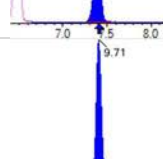
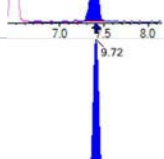
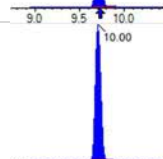
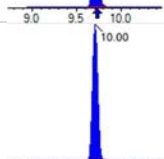
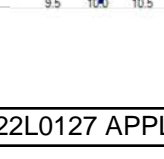
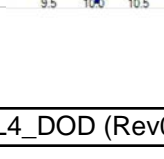
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 115476	(9.31, N/A) (N/A, -0.02, N/A)	752.6	N/A	1.1135 [1.0000]	111.4% { 117.5% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 226839	(8.02, N/A) (N/A, -0.02, N/A)	640.6	N/A	0.9588 [1.0000]	95.9% { 89.7% }			
13C4_PFOS_IIS	(502.8 / 79.9) 199105	(9.46, N/A) (N/A, -0.02, N/A)	383.4	N/A	0.9924 [1.0000]	99.2% { 90.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 787664	(3.73, N/A) (N/A, 0.02, N/A)	1068.8	N/A	8.9243 [8.0000]	111.6% { 108.6% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 415840	(5.03, N/A) (N/A, 0.01, N/A)	778.2	N/A	4.6627 [4.0000]	116.6% { 110.2% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 312517	(6.16, N/A) (N/A, 0.00, N/A)	753.4	N/A	2.1915 [2.0000]	109.6% { 103.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 275072	(7.09, N/A) (N/A, -0.01, N/A)	569.2	N/A	2.1833 [2.0000]	109.2% { 100.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 283507	(7.89, N/A) (N/A, -0.02, N/A)	571.7	N/A	2.2036 [2.0000]	110.2% { 111.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 115267	(8.63, N/A) (N/A, -0.02, N/A)	561.3	N/A	1.0337 [1.0000]	103.4% { 110.3% }			
13C6_PFDA_EIS	(519.0 / 474.0) 141096	(9.31, N/A) (N/A, -0.02, N/A)	339.0	N/A	0.9017 [1.0000]	90.2% { 98.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 210664	(9.71, N/A) (N/A, -0.01, N/A)	592.2	N/A	0.9350 [1.0000]	93.5% { 112.6% }			

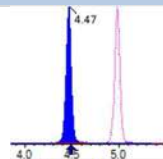
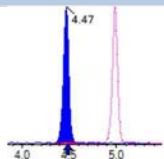
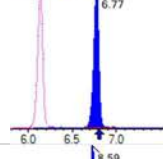
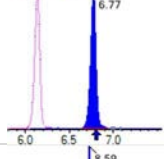
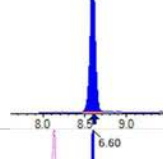
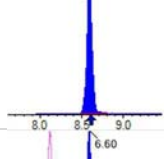
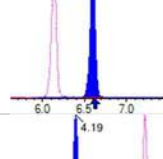
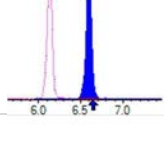
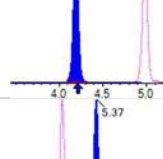
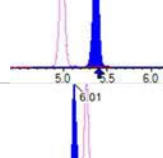
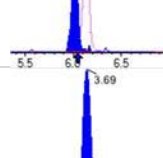
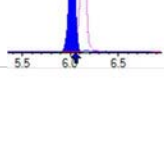
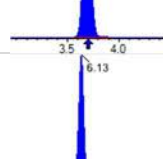
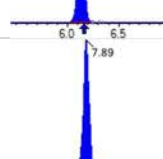
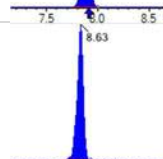

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 248859	(9.89, N/A) (N/A, -0.01, N/A)	452.6	N/A	0.9794 [1.0000]	97.9% { 115.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 131568	(10.12, N/A) (N/A, -0.01, N/A)	423.9	N/A	0.8520 [1.0000]	85.2% { 108.8% }			
13C3_PFBs_EIS	(302.0 / 80.0) 817623	(6.12, N/A) (N/A, 0.00, N/A)	1067.7	N/A	2.2070 [2.0000]	110.3% { 107.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 431333	(8.02, N/A) (N/A, -0.02, N/A)	917.9	N/A	2.2450 [2.0000]	112.3% { 111.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 666528	(9.46, N/A) (N/A, -0.01, N/A)	608.3	N/A	2.0379 [2.0000]	101.9% { 99.7% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 74678	(5.83, N/A) (N/A, 0.01, N/A)	502.0	N/A	3.5748 [4.0000]	89.4% { 84.7% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 107578	(7.55, N/A) (N/A, -0.01, N/A)	664.0	N/A	4.0184 [4.0000]	100.5% { 100.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 87292	(8.96, N/A) (N/A, -0.03, N/A)	319.9	N/A	3.6370 [4.0000]	90.9% { 92.4% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1041124	(10.17, N/A) (N/A, -0.01, N/A)	1023.0	N/A	2.1873 [2.0000]	109.4% { 107.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 244043	(10.60, N/A) (N/A, -0.01, N/A)	622.0	N/A	2.0580 [2.0000]	102.9% { 101.7% }			
D5_NeIFOSA_EIS	(531.1 / 169.0) 238745	(10.69, N/A) (N/A, -0.01, N/A)	1061.6	N/A	2.1561 [2.0000]	107.8% { 103.8% }			

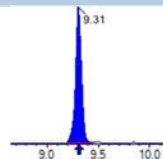
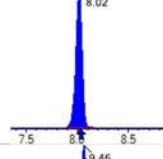
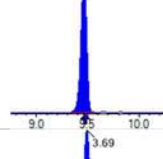
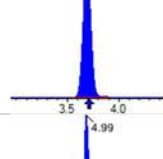
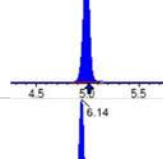
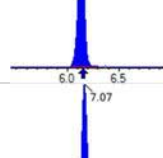
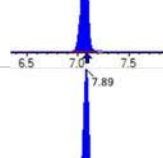
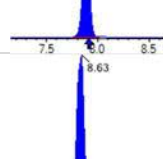
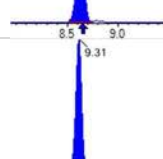
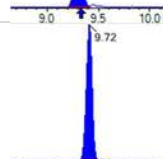
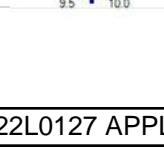
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 269684	(9.50 , N/A) (N/A , -0.02 , N/A)	363.7	N/A	3.5151 [4.0000]	87.9% { 94.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 239335	(9.68 , N/A) (N/A , -0.01 , N/A)	309.9	N/A	3.7535 [4.0000]	93.8% { 93.4% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 508851	(10.56 , N/A) (N/A , -0.01 , N/A)	963.1	N/A	22.3081 [20.0000]	111.5% { 101.6% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 263466	(10.66 , N/A) (N/A , -0.01 , N/A)	1380.8	N/A	21.4493 [20.0000]	107.2% { 99.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 725465	(6.51 , N/A) (N/A , 0.00 , N/A)	755.7	N/A	8.3555 [8.0000]	104.4% { 97.6% }			

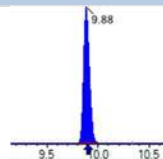
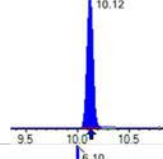
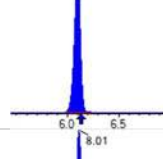
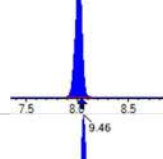
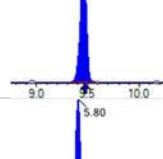
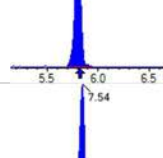
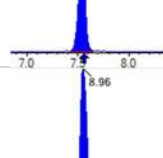
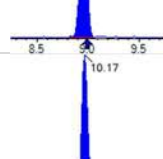
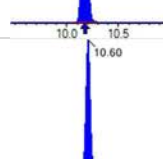
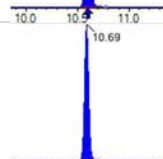
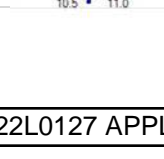
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 507523	(3.69, 1.00) (0.00, N/A, 0.0)	71.5	N/A 0.0 0.0	8.2406 [8.0000]	103.0%			
PFPeA	(262.9 / 219.0) 343558 (262.9 / 69.0) 3693	(4.99, 1.00) (0.00, N/A, 0.1)	804.9 115.5	0.0107 12593.6 105.2	4.0387 [4.0000]	101.0%			
PFHxA	(313.0 / 269.0) 280919 (313.0 / 119.0) 24927	(6.14, 1.00) (0.00, N/A, 0.0)	562.3 294.8	0.0887 90.5 90.5	1.9743 [2.0000]	98.7%			
PFHpA	(363.0 / 319.0) 253335 (363.0 / 169.0) 73465	(7.07, 1.00) (0.00, N/A, -0.1)	512.3 401.4	0.2900 92.8 92.8	2.0470 [2.0000]	102.3%			
PFOA	(413.0 / 369.0) 255405 (413.0 / 169.0) 83564	(7.89, 1.00) (0.00, N/A, 0.1)	466.1 436.2	0.3272 97.2 97.2	2.0090 [2.0000]	100.4%			
PFNA	(463.0 / 419.0) 182833 (463.0 / 169.0) 36188	(8.63, 1.00) (0.00, N/A, -0.1)	305.9 104.7	0.1979 98.6 98.6	1.9038 [2.0000]	95.2%			
PFDA	(513.0 / 469.0) 262475 (513.0 / 169.0) 22751	(9.31, 1.00) (0.00, N/A, -0.2)	305.0 165.9	0.0867 108.9 108.9	2.1573 [2.0000]	107.9%			
PFUnA	(563.0 / 519.0) 320880 (563.0 / 169.0) 29884	(9.72, 1.00) (0.00, N/A, 0.4)	603.0 154.2	0.0931 83.1 83.1	2.0656 [2.0000]	103.3%			
PFDoA	(613.0 / 569.0) 394907 (613.0 / 169.0) 50232	(9.89, 1.00) (0.01, N/A, 0.1)	479.7 183.1	0.1272 101.3 101.3	2.0156 [2.0000]	100.8%			
PFTrDA	(663.0 / 619.0) 312546 (663.0 / 169.0) 59075	(10.02, 1.01) (N/A, 0.00, -0.1)	585.1 268.1	0.1890 90.4 90.4	1.9330 [2.0000]	96.6%			
PFTeDA	(713.0 / 669.0) 263218 (713.0 / 169.0) 41014	(10.12, 1.00) (0.00, N/A, -0.3)	415.7 136.9	0.1558 68.6 68.6	1.7693 [2.0000]	88.5%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(298.9 / 80.0) 387869 (298.9 / 99.0) 263941	(6.10 , 1.00) (0.00 , N/A , 0.0)	811.9 625.6	0.6805 100.1 100.1	1.9481 [1.7695]	110.1%			
PFPeS	(349.0 / 80.0) 717526 (349.0 / 99.0) 241169	(7.14 , 0.89) (N/A , -0.02 , 0.0)	883.8 587.6	0.3361 90.0 90.0	1.9665 [1.8768]	104.8%			
PFHxS	(399.0 / 80.0) 606563 (399.0 / 99.0) 205320	(8.01 , 1.00) (0.00 , N/A , 0.0)	7059.3 9205.6	0.3385 98.7 98.7	1.9609 [1.8220]	107.6%			
PFHpS	(449.0 / 80.0) 566099 (449.0 / 99.0) 161220	(8.79 , 0.93) (N/A , -0.02 , 0.4)	565.5 563.4	0.2848 97.1 97.1	2.0631 [1.9028]	108.4%			
PFOS	(499.0 / 80.0) 678992 (499.0 / 99.0) 143039	(9.46 , 1.00) (0.00 , N/A , 0.0)	120.4 100.0	0.2107 92.2 92.2	1.9959 [1.8550]	107.6%			
PFNS	(549.0 / 80.0) 795749 (549.0 / 99.0) 200156	(9.76 , 1.03) (N/A , -0.01 , -0.1)	480.9 569.0	0.2515 100.8 100.8	2.0342 [1.9198]	106.0%			
PFDS	(599.0 / 80.0) 1013064 (599.0 / 99.0) 235031	(9.91 , 1.05) (N/A , -0.01 , 0.1)	904.5 657.1	0.2320 91.0 91.0	2.0988 [1.9262]	109.0%			
PFDoS	(698.9 / 80.0) 537827 (698.9 / 99.0) 125026	(10.11 , 1.07) (N/A , 0.00 , 0.3)	831.2 437.1	0.2325 113.1 113.1	2.1346 [1.9391]	110.1%			
4:2FTS	(327.0 / 307.0) 511163 (327.0 / 81.0) 282129	(5.80 , 1.00) (0.00 , N/A , 0.1)	911.2 701.5	0.5519 110.4 110.4	8.4974 [7.4762]	113.7%			
6:2FTS	(427.0 / 407.0) 309051 (427.0 / 81.0) 217287	(7.54 , 1.00) (0.00 , N/A , 0.1)	857.9 771.9	0.7031 98.1 98.1	7.8502 [7.5923]	103.4%			
8:2FTS	(527.0 / 507.0) 268464 (527.0 / 81.0) 150349	(8.96 , 1.00) (0.00 , N/A , 0.3)	351.0 377.4	0.5600 79.6 79.6	8.1579 [7.6663]	106.4%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 1043070 (498.0 / 478.0) 17408	(10.17, 1.00) (0.00, N/A, -0.2)	1089.6 213.3	0.0167 70.6 70.6	2.2171 [2.0000]	110.9%			
NMeFOSA	(511.9 / 219.0) 797988 (511.9 / 169.0) 561632	(10.60, 1.00) (0.00, N/A, 0.0)	1263.3 1318.1	0.7038 100.9 100.9	8.8872 [8.0000]	111.1%			
NEIFOSA	(526.0 / 219.0) 884913 (526.0 / 169.0) 915802	(10.69, 1.00) (0.00, N/A, 0.0)	1133.4 1280.9	1.0349 91.9 91.9	8.5402 [8.0000]	106.8%			
NMeFOSAA	(570.0 / 419.0) 114866 (570.0 / 483.0) 55837	(9.50, 1.00) (0.00, N/A, -0.2)	292.2 166.1	0.4861 103.5 103.5	2.2031 [2.0000]	110.2%			
NEIFOSAA	(584.0 / 419.0) 116426 (584.0 / 526.0) 77441	(9.68, 1.00) (0.00, N/A, 0.1)	768.2 364.2	0.6652 86.3 86.3	2.0164 [2.0000]	100.8%			
NMeFOSE	(616.1 / 59.0) 249979	(10.57, 1.00) (0.01, N/A, 0.0)	663.7	N/A 0.0 0.0	8.3254 [8.0000]	104.1%			
NEIFOSE	(630.0 / 59.0) 74529	(10.67, 1.00) (0.01, N/A, 0.0)	1235.3	N/A 0.0 0.0	8.9015 [8.0000]	111.3%			
HFPO-DA	(285.0 / 169.0) 240350 (285.0 / 185.0) 620940	(6.49, 1.00) (0.00, N/A, 0.2)	496.5 845.2	2.5835 101.3 101.3	4.1698 [4.0000]	104.2%			
ADONA	(377.0 / 85.0) 910558 (377.0 / 251.0) 114469	(7.39, 1.14) (N/A, -0.02, 0.1)	1009.9 310.9	0.1257 100.2 100.2	3.8107 [3.7708]	101.1%			
9CI-Pf3ONS	(531.0 / 351.0) 2453494 (533.0 / 353.0) 794217	(9.71, 1.50) (N/A, -0.01, -0.2)	748.6 840.4	0.3237 102.2 102.2	3.6207 [3.7330]	97.0%			
11CI-Pf3OUDS	(631.0 / 451.0) 1531795 (633.0 / 453.0) 528327	(10.00, 1.54) (N/A, -0.01, 0.0)	780.6 921.4	0.3449 117.9 117.9	3.4306 [3.7728]	90.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 32190 (241.0 / 117.0) 51962	(4.47, 0.90) (N/A, -0.02, -0.1)	598.7 480.7	1.6142 0.1 97.5	8.8229 [8.0000]	110.3%			IR1,
5:3FTCA	(341.0 / 236.7) 225487 (341.0 / 217.0) 362449	(6.77, 1.10) (N/A, -0.03, 0.0)	507.4 574.4	1.6074 101.7 101.7	7.7824 [8.0000]	97.3%			
7:3FTCA	(441.0 / 317.0) 245106 (441.0 / 337.0) 227732	(8.59, 1.40) (N/A, -0.02, 0.2)	452.6 367.7	0.9291 114.2 114.2	7.4960 [8.0000]	93.7%			
PFEESA	(315.0 / 135.0) 538330 (315.0 / 83.0) 160480	(6.60, 1.08) (N/A, -0.03, 0.0)	874.3 551.7	0.2981 105.5 105.5	3.6841 [3.5698]	103.2%			
PFMPA	(229.0 / 85.0) 100086	(4.19, 0.84) (N/A, -0.02, 0.0)	1269.5	N/A 0.0 0.0	4.3591 [4.0000]	109.0%			
PFMBA	(279.0 / 85.0) 312739	(5.37, 1.08) (N/A, -0.03, 0.0)	909.1	N/A 0.0 0.0	4.1725 [4.0000]	104.3%			
NFDHA	(201.0 / 85.0) 11598 (295.0 / 201.0) 84450	(6.01, 0.98) (N/A, -0.03, -0.4)	238.5 728.8	7.2812 0.9 88.4	4.0218 [4.0000]	100.5%			IR1,
13C3_PFBA_IIS	(216.0 / 172.0) 86775	(3.69, N/A) (N/A, -0.02, N/A)	815.1	N/A	0.9925 [1.0000]	99.3% { 94.0% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 140097	(6.13, N/A) (N/A, -0.03, N/A)	656.2	N/A	1.0648 [1.0000]	106.5% { 111.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 122142	(7.89, N/A) (N/A, -0.02, N/A)	729.6	N/A	0.9758 [1.0000]	97.6% { 96.0% }			
13C5_PFNA_IIS	(468.0 / 423.0) 89059	(8.63, N/A) (N/A, -0.01, N/A)	390.2	N/A	0.8922 [1.0000]	89.2% { 81.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ 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	(515.1 / 470.1) 99726	(9.31, N/A) (N/A, -0.02, N/A)	264.5	N/A	0.9616 [1.0000]	96.2% { 101.5% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 222942	(8.02, N/A) (N/A, -0.02, N/A)	840.3	N/A	0.9423 [1.0000]	94.2% { 88.2% }			
13C4_PFOS_IIS	(502.8 / 79.9) 173042	(9.46, N/A) (N/A, -0.01, N/A)	299.4	N/A	0.8625 [1.0000]	86.3% { 78.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 741836	(3.69, N/A) (N/A, -0.02, N/A)	828.2	N/A	8.2573 [8.0000]	103.2% { 102.3% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 375839	(4.99, N/A) (N/A, -0.03, N/A)	868.0	N/A	3.6439 [4.0000]	91.1% { 99.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 313669	(6.14, N/A) (N/A, -0.03, N/A)	658.5	N/A	1.9019 [2.0000]	95.1% { 103.5% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 274112	(7.07, N/A) (N/A, -0.03, N/A)	551.8	N/A	1.8812 [2.0000]	94.1% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 268268	(7.89, N/A) (N/A, -0.02, N/A)	585.3	N/A	1.9877 [2.0000]	99.4% { 105.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 113651	(8.63, N/A) (N/A, -0.02, N/A)	336.1	N/A	1.1683 [1.0000]	116.8% { 108.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 131969	(9.31, N/A) (N/A, -0.02, N/A)	329.5	N/A	0.9766 [1.0000]	97.7% { 92.5% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 208438	(9.72, N/A) (N/A, -0.01, N/A)	295.6	N/A	1.0713 [1.0000]	107.1% { 111.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 244597	(9.88, N/A) (N/A, -0.01, N/A)	439.4	N/A	1.1147 [1.0000]	111.5% { 113.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 155445	(10.12, N/A) (N/A, -0.01, N/A)	302.9	N/A	1.1656 [1.0000]	116.6% { 128.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 728982	(6.10, N/A) (N/A, -0.03, N/A)	970.8	N/A	2.0021 [2.0000]	100.1% { 96.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 389000	(8.01, N/A) (N/A, -0.02, N/A)	957.8	N/A	2.0601 [2.0000]	103.0% { 101.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 619035	(9.46, N/A) (N/A, -0.01, N/A)	449.9	N/A	2.1778 [2.0000]	108.9% { 92.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 75450	(5.80, N/A) (N/A, -0.02, N/A)	500.7	N/A	3.6749 [4.0000]	91.9% { 85.6% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 101990	(7.54, N/A) (N/A, -0.02, N/A)	527.7	N/A	3.8763 [4.0000]	96.9% { 95.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 89806	(8.96, N/A) (N/A, -0.03, N/A)	362.4	N/A	3.8072 [4.0000]	95.2% { 95.1% }			
13C8_PFOA_EIS	(506.0 / 78.0) 945362	(10.17, N/A) (N/A, -0.01, N/A)	944.6	N/A	2.2852 [2.0000]	114.3% { 97.2% }			
D3_NMeFOA_EIS	(515.0 / 169.0) 225082	(10.60, N/A) (N/A, -0.01, N/A)	736.5	N/A	2.1840 [2.0000]	109.2% { 93.8% }			
D5_NEiFOA_EIS	(531.1 / 169.0) 227254	(10.69, N/A) (N/A, -0.01, N/A)	1478.9	N/A	2.3614 [2.0000]	118.1% { 98.8% }			

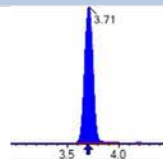
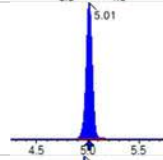
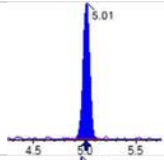
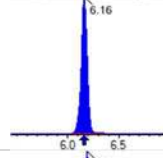
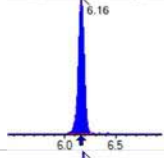
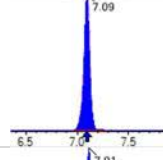
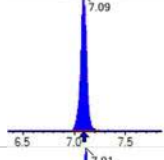
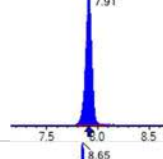
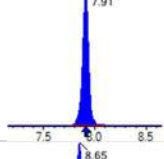
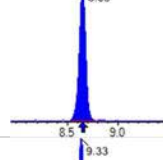
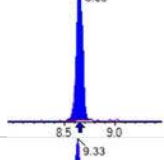
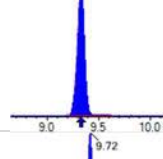
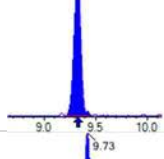
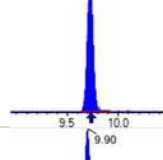
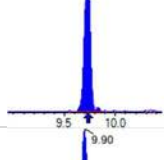
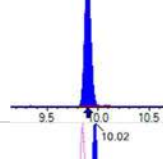
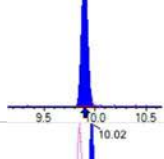
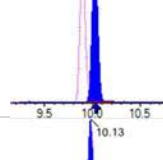
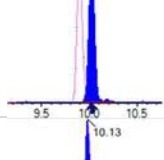
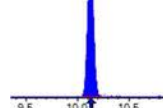
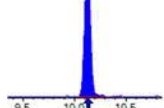


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03856-CAL4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-15A
 Path: S2022-12-15A (4)
 Acquired: 2022/12/15 - 13:11

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) 287769	(9.50 , N/A) (N/A , -0.02 , N/A)	338.0	N/A	4.3157 [4.0000]	107.9% { 101.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 256207	(9.68 , N/A) (N/A , -0.01 , N/A)	368.0	N/A	4.6233 [4.0000]	115.6% { 100.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 471611	(10.57 , N/A) (N/A , -0.01 , N/A)	1398.0	N/A	23.7895 [20.0000]	118.9% { 94.2% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 262321	(10.67 , N/A) (N/A , -0.01 , N/A)	1277.6	N/A	24.5727 [20.0000]	122.9% { 99.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 754664	(6.48 , N/A) (N/A , -0.03 , N/A)	889.9	N/A	7.5156 [8.0000]	93.9% { 101.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(212.9 / 169.0) 1230017	(3.71, 1.00) (0.00, N/A, 0.0)	72.4	N/A 0.0 0.0	20.4366 [20.0000]	102.2%			
PFPeA	(262.9 / 219.0) 888500 (262.9 / 69.0) 9078	(5.01, 1.00) (0.00, N/A, -0.1)	807.5 226.0	0.0102 11970.9 100.0	10.4010 [10.0000]	104.0%			
PFHxA	(313.0 / 269.0) 671202 (313.0 / 119.0) 65842	(6.16, 1.00) (0.00, N/A, 0.0)	708.2 575.7	0.0981 100.0 100.0	4.8818 [5.0000]	97.6%			
PFHpA	(363.0 / 319.0) 619830 (363.0 / 169.0) 193707	(7.09, 1.00) (0.00, N/A, 0.1)	753.7 757.4	0.3125 100.0 100.0	5.0084 [5.0000]	100.2%			
PFOA	(413.0 / 369.0) 641256 (413.0 / 169.0) 215954	(7.91, 1.00) (0.00, N/A, 0.1)	666.1 738.3	0.3368 100.0 100.0	5.3414 [5.0000]	106.8%			
PFNA	(463.0 / 419.0) 473767 (463.0 / 169.0) 95071	(8.65, 1.00) (0.00, N/A, 0.0)	529.3 105.2	0.2007 100.0 100.0	5.3632 [5.0000]	107.3%			
PFDA	(513.0 / 469.0) 657458 (513.0 / 169.0) 52315	(9.33, 1.00) (0.00, N/A, 0.4)	398.9 223.9	0.0796 100.0 100.0	5.0007 [5.0000]	100.0%			
PFUnA	(563.0 / 519.0) 753398 (563.0 / 169.0) 84389	(9.72, 1.00) (0.00, N/A, -0.2)	563.5 251.5	0.1120 100.0 100.0	5.4025 [5.0000]	108.1%			
PFDoA	(613.0 / 569.0) 891272 (613.0 / 169.0) 111939	(9.90, 1.00) (0.00, N/A, 0.1)	667.1 408.2	0.1256 100.0 100.0	5.1588 [5.0000]	103.2%			
PFTrDA	(663.0 / 619.0) 817708 (663.0 / 169.0) 170939	(10.02, 1.01) (N/A, 0.00, 0.1)	588.5 305.3	0.2090 100.0 100.0	5.7352 [5.0000]	114.7%			
PFTeDA	(713.0 / 669.0) 698601 (713.0 / 169.0) 158581	(10.13, 1.00) (0.00, N/A, 0.1)	833.0 446.7	0.2270 100.0 100.0	6.0353 [5.0000]	120.7%			

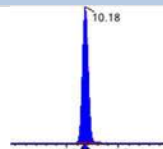
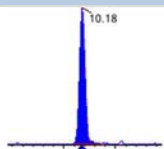
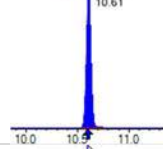
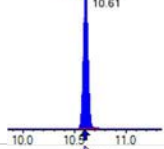
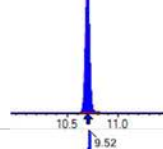
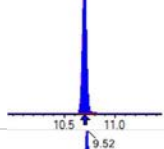
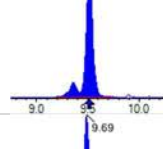
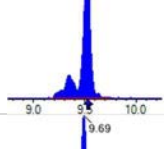
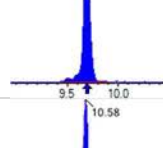
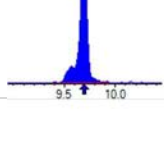
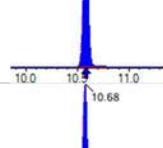
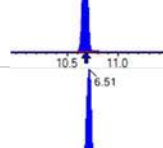
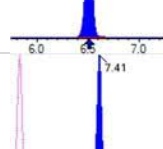
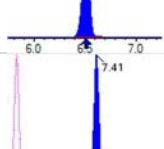
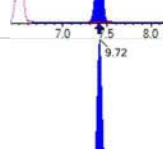
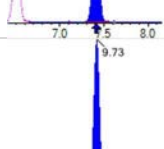
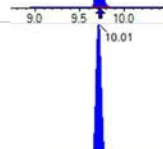
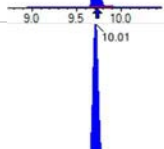

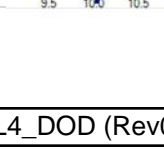


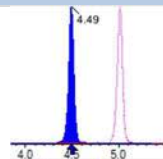
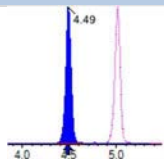
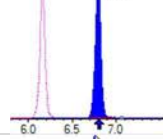
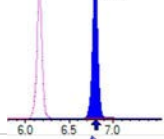
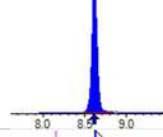
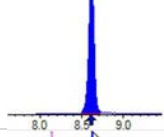
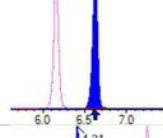
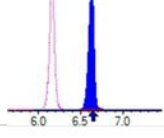
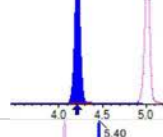
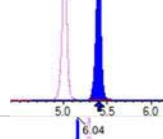
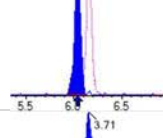
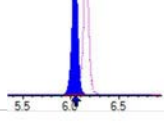
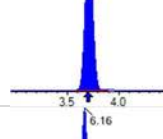
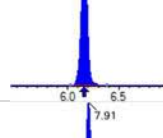
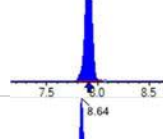
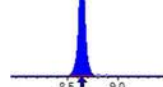
Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

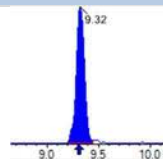
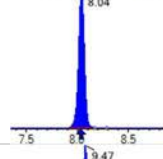
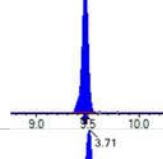
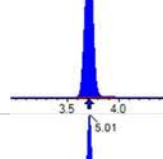
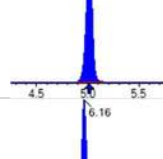
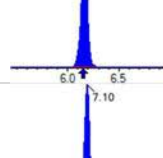
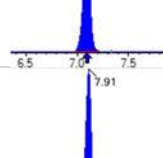
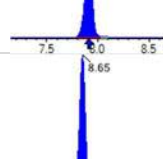
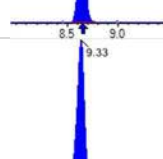
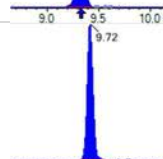
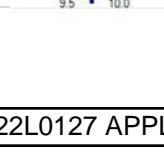
Sample I.D.: SB03856-CAL5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

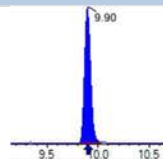
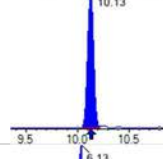
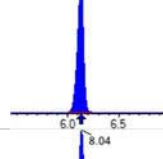
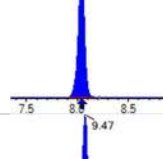
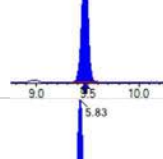
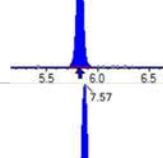
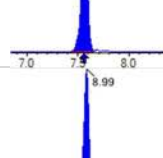
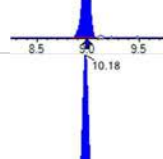
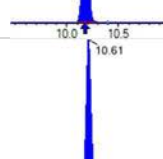
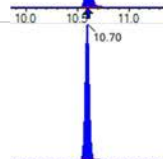
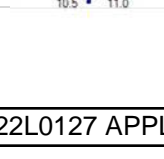
Quant Method: 1633 - 2022-12-15A
 Path: S2022-12-15A (5)
 Acquired: 2022/12/15 - 13:24

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	(298.9 / 80.0) 931163 (298.9 / 99.0) 633248	(6.12 , 1.00) (0.00 , N/A , 0.1)	966.2 806.1	0.6801 100.0 100.0	4.4911 [4.4237]	101.5%			
PFPeS	(349.0 / 80.0) 1750797 (349.0 / 99.0) 653718	(7.16 , 0.89) (N/A , 0.00 , -0.1)	746.1 722.8	0.3734 100.0 100.0	4.8441 [4.6919]	103.2%			
PFHxS	(399.0 / 80.0) 1394257 (399.0 / 99.0) 478003	(8.04 , 1.00) (0.00 , N/A , 0.1)	6526.9 5562.7	0.3428 100.0 100.0	4.5505 [4.5549]	99.9%			
PFHpS	(449.0 / 80.0) 1242809 (449.0 / 99.0) 364660	(8.81 , 0.93) (N/A , 0.00 , 0.0)	476.6 605.7	0.2934 100.0 100.0	4.1959 [4.7570]	88.2%			
PFOS	(499.0 / 80.0) 1656633 (499.0 / 99.0) 378656	(9.47 , 1.00) (0.00 , N/A , 0.0)	122.2 155.3	0.2286 100.0 100.0	4.5114 [4.6375]	97.3%			
PFNS	(549.0 / 80.0) 2040483 (549.0 / 99.0) 509199	(9.77 , 1.03) (N/A , 0.00 , 0.0)	609.0 966.1	0.2495 100.0 100.0	4.8324 [4.7994]	100.7%			
PFDS	(599.0 / 80.0) 2546429 (599.0 / 99.0) 649153	(9.92 , 1.05) (N/A , 0.00 , 0.0)	1194.6 872.7	0.2549 100.0 100.0	4.8872 [4.8155]	101.5%			
PFDoS	(698.9 / 80.0) 1369518 (698.9 / 99.0) 281386	(10.11 , 1.07) (N/A , 0.00 , -0.1)	1084.6 664.5	0.2055 100.0 100.0	5.0355 [4.8478]	103.9%			
4:2FTS	(327.0 / 307.0) 1264897 (327.0 / 81.0) 632375	(5.83 , 1.00) (0.00 , N/A , 0.0)	876.8 759.5	0.4999 100.0 100.0	17.9914 [18.6906]	96.3%			
6:2FTS	(427.0 / 407.0) 786270 (427.0 / 81.0) 563284	(7.57 , 1.00) (0.00 , N/A , -0.1)	750.0 820.9	0.7164 100.0 100.0	19.0686 [18.9808]	100.5%			
8:2FTS	(527.0 / 507.0) 674253 (527.0 / 81.0) 474343	(8.98 , 1.00) (0.00 , N/A , 0.1)	546.0 566.0	0.7035 100.0 100.0	19.4791 [19.1658]	101.6%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ 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) 2386396 (498.0 / 478.0) 56409	(10.18, 1.00) (0.00, N/A, 0.1)	745.6 325.2	0.0236 100.0 100.0	4.9289 [5.0000]	98.6%			
NMeFOSA	(511.9 / 219.0) 2030396 (511.9 / 169.0) 1415713	(10.61, 1.00) (0.00, N/A, 0.0)	863.0 1298.1	0.6973 100.0 100.0	21.2085 [20.0000]	106.0%			
NEIFOSA	(526.0 / 219.0) 2078903 (526.0 / 169.0) 2341467	(10.70, 1.00) (0.00, N/A, 0.0)	1496.6 1573.2	1.1263 100.0 100.0	19.8229 [20.0000]	99.1%			
NMeFOSAA	(570.0 / 419.0) 267573 (570.0 / 483.0) 125681	(9.52, 1.00) (0.00, N/A, -0.2)	425.4 384.0	0.4697 100.0 100.0	5.1828 [5.0000]	103.7%			
NEIFOSAA	(584.0 / 419.0) 251609 (584.0 / 526.0) 193821	(9.69, 1.00) (0.00, N/A, 0.0)	687.0 16407.9	0.7703 100.0 100.0	4.3585 [5.0000]	87.2%			
NMeFOSE	(616.1 / 59.0) 626728	(10.58, 1.00) (0.01, N/A, 0.0)	1110.5	N/A 0.0 0.0	19.6539 [20.0000]	98.3%			
NEtFOSE	(630.0 / 59.0) 162411	(10.68, 1.00) (0.01, N/A, 0.0)	635.4	N/A 0.0 0.0	19.2101 [20.0000]	96.1%			
HFPO-DA	(285.0 / 169.0) 615685 (285.0 / 185.0) 1570527	(6.51, 1.00) (0.00, N/A, 0.0)	848.4 784.5	2.5509 100.0 100.0	10.8409 [10.0000]	108.4%			
ADONA	(377.0 / 85.0) 2368722 (377.0 / 251.0) 297052	(7.41, 1.14) (N/A, 0.00, -0.1)	872.6 630.6	0.1254 100.0 100.0	10.0610 [9.4270]	106.7%			
9CI-Pf3ONS	(531.0 / 351.0) 6344280 (533.0 / 353.0) 2009503	(9.72, 1.49) (N/A, 0.00, -0.2)	673.9 735.2	0.3167 100.0 100.0	9.5023 [9.3325]	101.8%			
11CI-PF3OUDS	(631.0 / 451.0) 4558447 (633.0 / 453.0) 1333674	(10.01, 1.54) (N/A, 0.00, 0.0)	897.7 615.8	0.2926 100.0 100.0	10.3614 [9.4321]	109.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ 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) 76488 (241.0 / 117.0) 126603	(4.49, 0.90) (N/A, 0.00, 0.1)	595.3 737.4	1.6552 0.1 100.0	20.8762 [20.0000]	104.4%			IR1,
5:3FTCA	(341.0 / 236.7) 567673 (341.0 / 217.0) 896894	(6.80, 1.10) (N/A, 0.00, 0.0)	641.6 611.0	1.5799 100.0 100.0	20.2763 [20.0000]	101.4%			
7:3FTCA	(441.0 / 317.0) 640142 (441.0 / 337.0) 520585	(8.61, 1.40) (N/A, 0.00, 0.0)	508.9 519.5	0.8132 100.0 100.0	20.2604 [20.0000]	101.3%			
PFEESA	(315.0 / 135.0) 1272818 (315.0 / 83.0) 359740	(6.63, 1.08) (N/A, 0.00, -0.1)	792.9 757.0	0.2826 100.0 100.0	9.0145 [8.9246]	101.0%			
PFMPA	(229.0 / 85.0) 233654	(4.21, 0.84) (N/A, 0.00, 0.0)	963.4	N/A 0.0 0.0	10.1338 [10.0000]	101.3%			
PFMBA	(279.0 / 85.0) 752713	(5.40, 1.08) (N/A, 0.00, 0.0)	1153.2	N/A 0.0 0.0	10.0005 [10.0000]	100.0%			
NFDHA	(201.0 / 85.0) 25433 (295.0 / 201.0) 209572	(6.04, 0.98) (N/A, 0.00, -0.3)	326.6 675.8	8.2401 1.0 100.0	9.2745 [10.0000]	92.7%			IR1,
13C3_PFBA_IIS	(216.0 / 172.0) 92277	(3.71, N/A) (N/A, 0.00, N/A)	689.1	N/A	1.0554 [1.0000]	105.5% { 100.0% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 125835	(6.16, N/A) (N/A, 0.00, N/A)	505.5	N/A	0.9564 [1.0000]	95.6% { 100.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 127226	(7.91, N/A) (N/A, 0.00, N/A)	620.2	N/A	1.0164 [1.0000]	101.6% { 100.0% }			
13C5_PFNA_IIS	(468.0 / 423.0) 109934	(8.64, N/A) (N/A, 0.00, N/A)	325.6	N/A	1.1013 [1.0000]	110.1% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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	(515.1 / 470.1) 98265	(9.32, N/A) (N/A, 0.00, N/A)	259.4	N/A	0.9476 [1.0000]	94.8% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 252897	(8.04, N/A) (N/A, 0.00, N/A)	712.4	N/A	1.0690 [1.0000]	106.9% { 100.0% }			
13C4_PFOS_IIS	(502.8 / 79.9) 220792	(9.47, N/A) (N/A, 0.00, N/A)	458.4	N/A	1.1005 [1.0000]	110.1% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 724958	(3.71, N/A) (N/A, 0.00, N/A)	802.1	N/A	7.5883 [8.0000]	94.9% { 100.0% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 377420	(5.01, N/A) (N/A, 0.00, N/A)	894.5	N/A	4.0740 [4.0000]	101.8% { 100.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 303094	(6.16, N/A) (N/A, 0.00, N/A)	769.8	N/A	2.0461 [2.0000]	102.3% { 100.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 274111	(7.10, N/A) (N/A, 0.00, N/A)	732.2	N/A	2.0945 [2.0000]	104.7% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 253333	(7.91, N/A) (N/A, 0.00, N/A)	487.6	N/A	1.8020 [2.0000]	90.1% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 104539	(8.65, N/A) (N/A, 0.00, N/A)	398.6	N/A	0.8706 [1.0000]	87.1% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 142605	(9.33, N/A) (N/A, 0.00, N/A)	368.5	N/A	1.0710 [1.0000]	107.1% { 100.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 187115	(9.72, N/A) (N/A, 0.00, N/A)	305.1	N/A	0.9760 [1.0000]	97.6% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 215682	(9.90, N/A) (N/A, 0.00, N/A)	633.3	N/A	0.9975 [1.0000]	99.8% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 120947	(10.13, N/A) (N/A, 0.00, N/A)	334.0	N/A	0.9204 [1.0000]	92.0% { 100.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 759125	(6.13, N/A) (N/A, 0.00, N/A)	720.9	N/A	1.8379 [2.0000]	91.9% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 385319	(8.04, N/A) (N/A, 0.00, N/A)	816.0	N/A	1.7989 [2.0000]	89.9% { 100.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 668208	(9.47, N/A) (N/A, 0.00, N/A)	316.9	N/A	1.8424 [2.0000]	92.1% { 100.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 88181	(5.83, N/A) (N/A, 0.00, N/A)	514.3	N/A	3.7862 [4.0000]	94.7% { 100.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 106822	(7.57, N/A) (N/A, 0.00, N/A)	555.3	N/A	3.5790 [4.0000]	89.5% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 94461	(8.99, N/A) (N/A, 0.00, N/A)	419.1	N/A	3.5302 [4.0000]	88.3% { 100.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 972879	(10.18, N/A) (N/A, 0.00, N/A)	741.4	N/A	1.8431 [2.0000]	92.2% { 100.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 239983	(10.61, N/A) (N/A, 0.00, N/A)	1007.5	N/A	1.8250 [2.0000]	91.2% { 100.0% }			
D5_NeIFOSA_EIS	(531.1 / 169.0) 230010	(10.70, N/A) (N/A, 0.00, N/A)	1302.1	N/A	1.8732 [2.0000]	93.7% { 100.0% }			

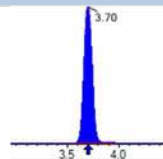
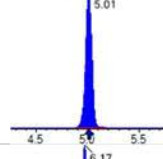
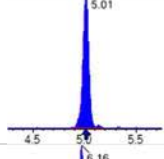
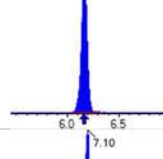
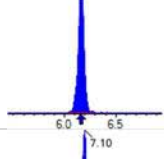
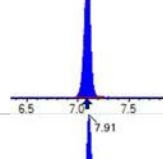
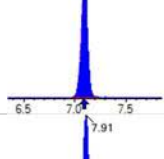
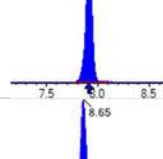
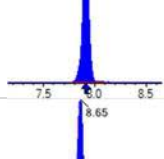
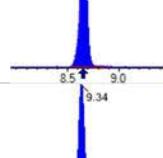
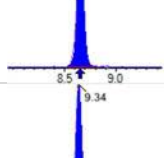
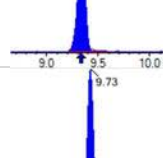
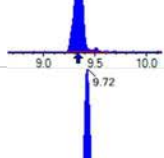
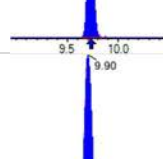
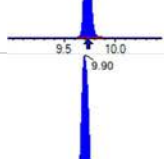
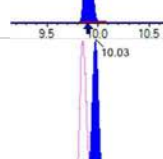
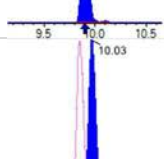
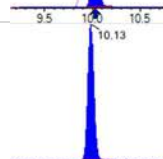
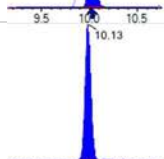

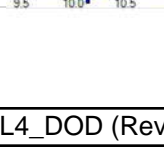


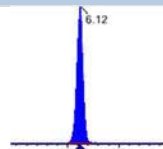
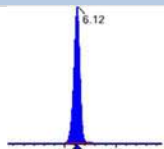
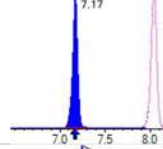
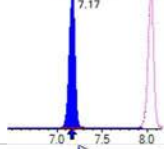
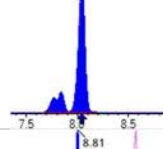
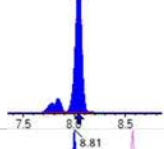
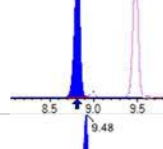
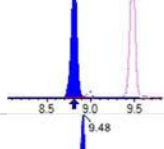
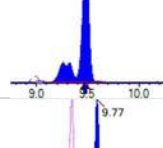
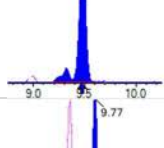
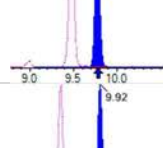
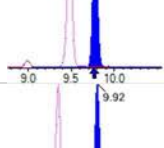
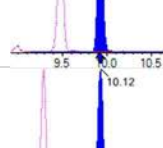
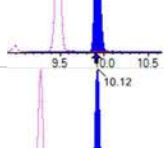
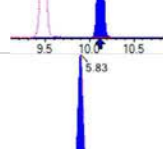
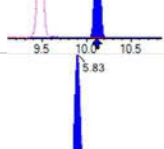
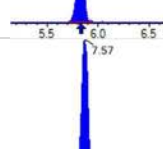
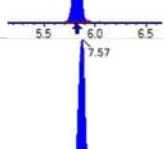
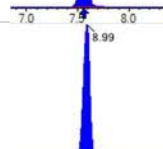
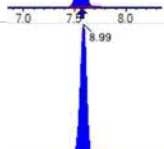

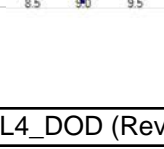
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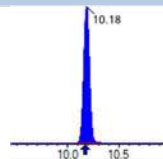
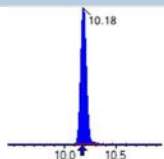
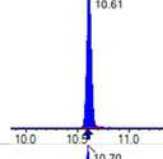
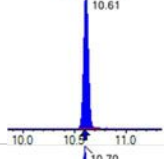
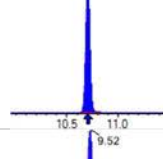
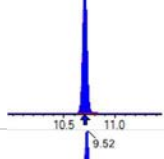
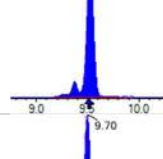
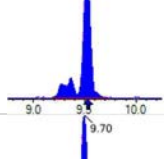
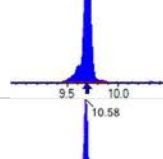
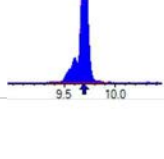
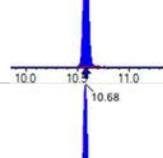
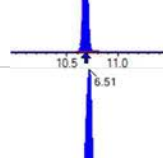
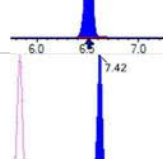
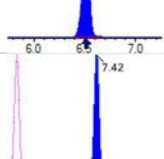
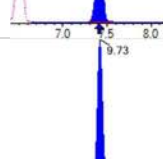
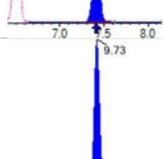
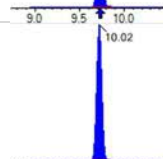
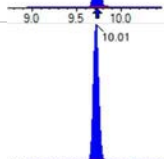

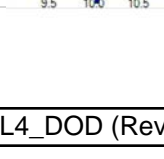
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 Acquisition Method: 1633 2022-12-13.dam

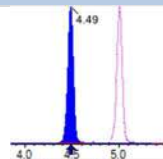
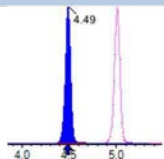
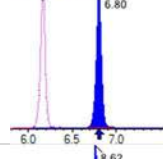
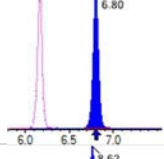
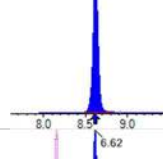
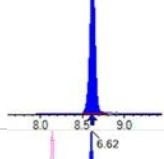
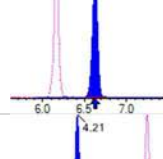
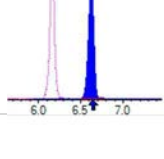
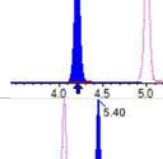
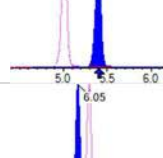
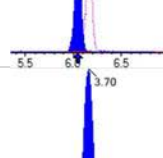
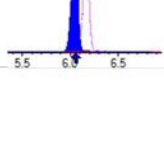
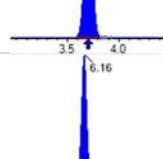
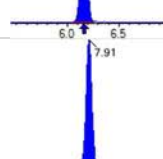
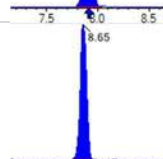

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 Path: S2022-12-15A (5)
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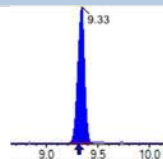
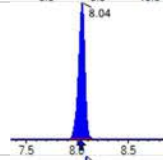
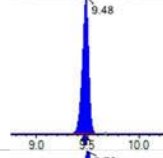
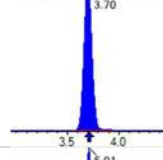
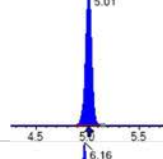
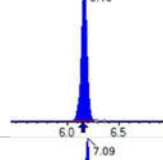
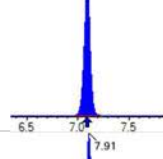
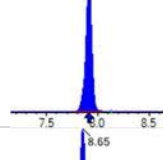
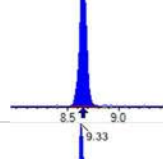
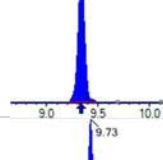
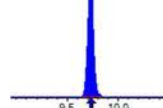
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 284942	(9.52, N/A) (N/A, 0.00, N/A)	266.4	N/A	3.3492 [4.0000]	83.7% { 100.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 256164	(9.69, N/A) (N/A, 0.00, N/A)	410.2	N/A	3.6229 [4.0000]	90.6% { 100.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 500857	(10.58, N/A) (N/A, 0.00, N/A)	945.2	N/A	19.8009 [20.0000]	99.0% { 100.0% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 264883	(10.67, N/A) (N/A, 0.00, N/A)	948.4	N/A	19.4465 [20.0000]	97.2% { 100.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 743568	(6.51, N/A) (N/A, 0.00, N/A)	960.8	N/A	8.2443 [8.0000]	103.1% { 100.0% }			

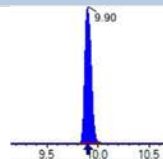
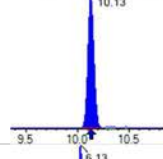
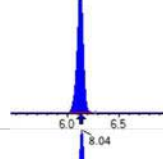
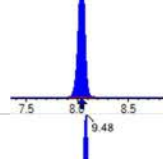
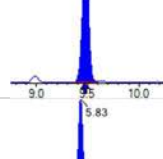
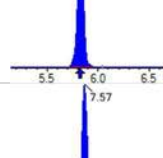
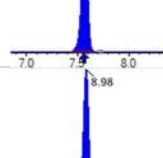
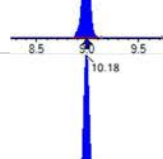
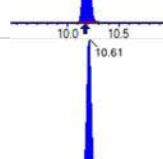
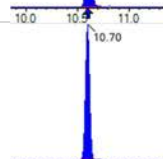

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 2473553	(3.70, 1.00) (0.00, N/A, 0.0)	63.3	N/A 0.0 0.0	41.7905 [40.0000]	104.5%			
PFPeA	(262.9 / 219.0) 1826970 (262.9 / 69.0) 20972	(5.01, 1.00) (0.00, N/A, -0.2)	787.5 517.2	0.0115 13449.8 112.4	20.6581 [20.0000]	103.3%			
PFHxA	(313.0 / 269.0) 1400727 (313.0 / 119.0) 130525	(6.17, 1.00) (0.00, N/A, 0.1)	793.7 542.8	0.0932 95.0 95.0	9.8261 [10.0000]	98.3%			
PFHpA	(363.0 / 319.0) 1381598 (363.0 / 169.0) 387158	(7.10, 1.00) (0.00, N/A, 0.0)	739.5 758.5	0.2802 89.7 89.7	11.3557 [10.0000]	113.6%			
PFOA	(413.0 / 369.0) 1279298 (413.0 / 169.0) 408618	(7.91, 1.00) (0.00, N/A, 0.1)	680.7 708.8	0.3194 94.8 94.8	9.7211 [10.0000]	97.2%			
PFNA	(463.0 / 419.0) 950315 (463.0 / 169.0) 220614	(8.65, 1.00) (0.00, N/A, 0.0)	574.5 145.9	0.2321 115.7 115.7	10.2092 [10.0000]	102.1%			
PFDA	(513.0 / 469.0) 1303580 (513.0 / 169.0) 128952	(9.34, 1.00) (0.00, N/A, -0.1)	472.4 297.2	0.0989 124.3 124.3	10.6710 [10.0000]	106.7%			
PFUnA	(563.0 / 519.0) 1478554 (563.0 / 169.0) 137019	(9.73, 1.00) (0.00, N/A, 0.1)	692.9 1538.6	0.0927 82.7 82.7	10.1484 [10.0000]	101.5%			
PFDoA	(613.0 / 569.0) 1967099 (613.0 / 169.0) 259105	(9.90, 1.00) (0.00, N/A, 0.2)	1601.9 513.2	0.1317 104.9 104.9	10.5665 [10.0000]	105.7%			
PFTrDA	(663.0 / 619.0) 1795477 (663.0 / 169.0) 330817	(10.03, 1.01) (N/A, 0.01, 0.2)	1258.5 509.4	0.1843 88.1 88.1	11.6868 [10.0000]	116.9%			
PFTeDA	(713.0 / 669.0) 1445140 (713.0 / 169.0) 246046	(10.13, 1.00) (0.00, N/A, -0.1)	682.6 556.2	0.1703 75.0 75.0	8.8128 [10.0000]	88.1%			

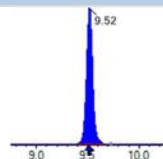
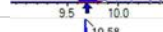



Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 1957666 (298.9 / 99.0) 1215189	(6.12, 1.00) (0.00, N/A, -0.1)	1141.5 761.2	0.6207 91.3 91.3	8.9834 [8.8473]	101.5%			
PFPeS	(349.0 / 80.0) 3833912 (349.0 / 99.0) 1305229	(7.17, 0.89) (N/A, 0.01, 0.1)	889.1 876.6	0.3404 91.2 91.2	10.2061 [9.3838]	108.8%			
PFHxS	(399.0 / 80.0) 2726279 (399.0 / 99.0) 950721	(8.04, 1.00) (0.00, N/A, 0.2)	2847.5 3480.3	0.3487 101.7 101.7	8.5609 [9.1098]	94.0%			
PFHpS	(449.0 / 80.0) 2866495 (449.0 / 99.0) 775679	(8.81, 0.93) (N/A, 0.01, 0.1)	869.2 711.1	0.2706 92.2 92.2	9.9295 [9.5141]	104.4%			
PFOS	(499.0 / 80.0) 3349843 (499.0 / 99.0) 747472	(9.48, 1.00) (0.00, N/A, 0.0)	165.8 177.9	0.2231 97.6 97.6	9.3597 [9.2749]	100.9%			
PFNS	(549.0 / 80.0) 3972744 (549.0 / 99.0) 1014742	(9.77, 1.03) (N/A, 0.00, -0.1)	718.6 683.1	0.2554 102.4 102.4	9.6532 [9.5989]	100.6%			
PFDS	(599.0 / 80.0) 4844974 (599.0 / 99.0) 1295975	(9.92, 1.05) (N/A, 0.00, 0.0)	689.2 927.5	0.2675 104.9 104.9	9.5406 [9.6311]	99.1%			
PFDoS	(698.9 / 80.0) 2774144 (698.9 / 99.0) 625888	(10.12, 1.07) (N/A, 0.01, 0.0)	879.2 849.9	0.2256 109.8 109.8	10.4655 [9.6956]	107.9%			
4:2FTS	(327.0 / 307.0) 2716095 (327.0 / 81.0) 1479536	(5.83, 1.00) (0.00, N/A, 0.0)	943.5 964.5	0.5447 109.0 109.0	38.7521 [37.3811]	103.7%			
6:2FTS	(427.0 / 407.0) 1693098 (427.0 / 81.0) 1169620	(7.57, 1.00) (0.00, N/A, 0.0)	875.1 923.0	0.6908 96.4 96.4	38.1195 [37.9617]	100.4%			
8:2FTS	(527.0 / 507.0) 1479732 (527.0 / 81.0) 898218	(8.99, 1.00) (0.01, N/A, 0.1)	777.3 440.9	0.6070 86.3 86.3	42.3415 [38.3315]	110.5%			

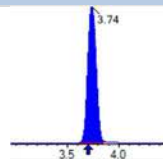
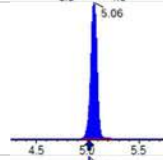
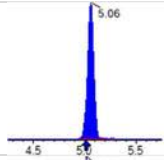
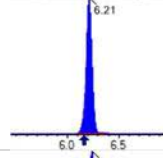
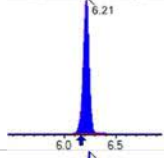
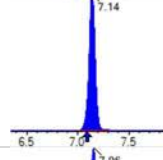
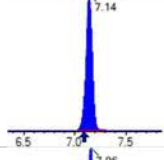
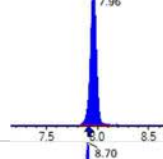
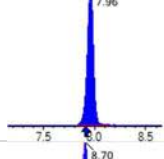
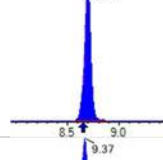
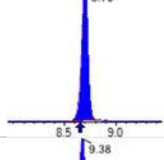
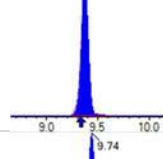
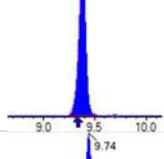
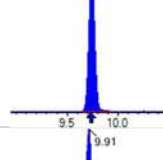
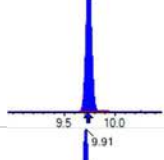
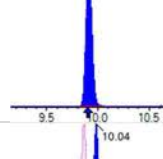
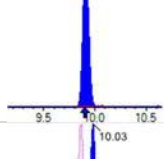
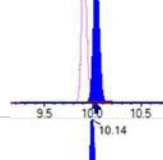
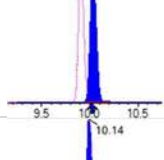
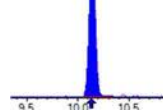
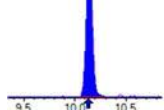
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[min], Δ RT-CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFOSA	(498.0 / 78.0) 4887000 (498.0 / 478.0) 111398	(10.18 , 1.00) (0.00 , N/A , 0.1)	972.0 305.6	0.0228 96.4 96.4	10.2920 [10.0000]	102.9%			
NMeFOSA	(511.9 / 219.0) 4072979 (511.9 / 169.0) 2619505	(10.61 , 1.00) (0.00 , N/A , 0.0)	943.8 1001.2	0.6431 92.2 92.2	40.8060 [40.0000]	102.0%			
NEIFOSA	(526.0 / 219.0) 4241681 (526.0 / 169.0) 4520678	(10.70 , 1.00) (0.00 , N/A , 0.0)	1521.4 1283.2	1.0658 94.6 94.6	41.6272 [40.0000]	104.1%			
NMeFOSAA	(570.0 / 419.0) 549483 (570.0 / 483.0) 278477	(9.52 , 1.00) (0.01 , N/A , 0.2)	359.3 348.3	0.5068 107.9 107.9	10.0643 [10.0000]	100.6%			
NEIFOSAA	(584.0 / 419.0) 574086 (584.0 / 526.0) 330066	(9.70 , 1.00) (0.01 , N/A , 0.1)	1020.8 253287.6	0.5749 74.6 74.6	10.0002 [10.0000]	100.0%			
NMeFOSE	(616.1 / 59.0) 1281909	(10.58 , 1.00) (0.01 , N/A , 0.0)	988.9	N/A 0.0 0.0	42.9202 [40.0000]	107.3%			
NEtFOSE	(630.0 / 59.0) 321577	(10.68 , 1.00) (0.01 , N/A , 0.0)	1562.9	N/A 0.0 0.0	38.8273 [40.0000]	97.1%			
HFPO-DA	(285.0 / 169.0) 1218037 (285.0 / 185.0) 3186706	(6.51 , 1.00) (0.00 , N/A , 0.1)	777.8 832.6	2.6163 102.6 102.6	20.8267 [20.0000]	104.1%			
ADONA	(377.0 / 85.0) 4439291 (377.0 / 251.0) 555702	(7.42 , 1.14) (N/A , 0.01 , 0.1)	905.6 656.4	0.1252 99.8 99.8	18.3103 [18.8540]	97.1%			
9CI-Pf3ONS	(531.0 / 351.0) 13396931 (533.0 / 353.0) 4040625	(9.73 , 1.49) (N/A , 0.01 , 0.1)	854.2 873.7	0.3016 95.2 95.2	19.4852 [18.6651]	104.4%			
11CI-PF3OUDS	(631.0 / 451.0) 8895076 (633.0 / 453.0) 2551133	(10.02 , 1.54) (N/A , 0.01 , 0.2)	1095.5 1102.8	0.2868 98.0 98.0	19.6337 [18.8642]	104.1%			

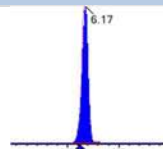
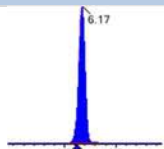
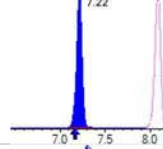
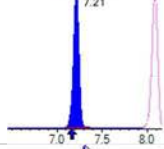
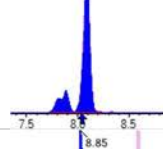
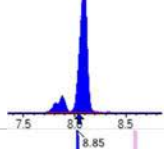
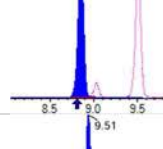
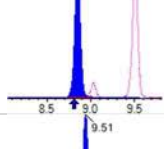
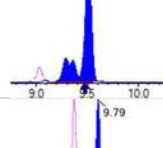
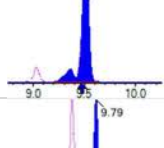
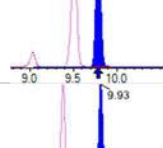
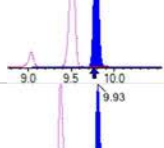
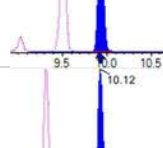
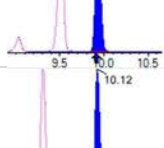
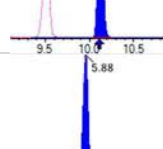
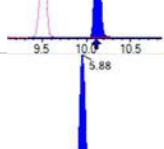
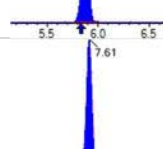
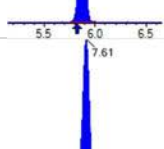
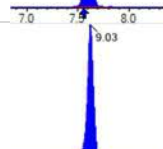
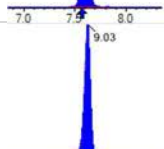

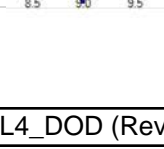
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
3:3FTCA	(241.0 / 177.0) 158571 (241.0 / 117.0) 264255	(4.49, 0.90) (N/A, 0.00, 0.0)	775.1 775.1	1.6665 0.1 100.7	41.8046 [40.0000]	104.5%			IR1,
5:3FTCA	(341.0 / 236.7) 1161224 (341.0 / 217.0) 1823387	(6.80, 1.10) (N/A, 0.00, 0.0)	698.6 785.3	1.5702 99.4 99.4	40.0047 [40.0000]	100.0%			
7:3FTCA	(441.0 / 317.0) 1352352 (441.0 / 337.0) 1111110	(8.62, 1.40) (N/A, 0.01, 0.1)	540.1 522.9	0.8216 101.0 101.0	41.2825 [40.0000]	103.2%			
PFEESA	(315.0 / 135.0) 2631622 (315.0 / 83.0) 755392	(6.62, 1.07) (N/A, 0.00, 0.0)	873.5 905.5	0.2870 101.6 101.6	17.9765 [17.8492]	100.7%			
PFMPA	(229.0 / 85.0) 484789	(4.21, 0.84) (N/A, 0.00, 0.0)	1336.6	N/A 0.0 0.0	20.3092 [20.0000]	101.5%			
PFMBA	(279.0 / 85.0) 1598827	(5.40, 1.08) (N/A, 0.00, 0.0)	952.1	N/A 0.0 0.0	20.5179 [20.0000]	102.6%			
NFDHA	(201.0 / 85.0) 64179 (295.0 / 201.0) 442492	(6.05, 0.98) (N/A, 0.01, 0.0)	562.5 668.7	6.8947 0.9 83.7	22.7396 [20.0000]	113.7%			IR1,
13C3_PFBA_IIS	(216.0 / 172.0) 89314	(3.70, N/A) (N/A, 0.00, N/A)	731.0	N/A	1.0216 [1.0000]	102.2% { 96.8% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 145545	(6.16, N/A) (N/A, 0.00, N/A)	789.6	N/A	1.1062 [1.0000]	110.6% { 115.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 128009	(7.91, N/A) (N/A, 0.01, N/A)	534.2	N/A	1.0227 [1.0000]	102.3% { 100.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 104958	(8.65, N/A) (N/A, 0.01, N/A)	456.0	N/A	1.0515 [1.0000]	105.1% { 95.5% }			

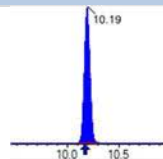
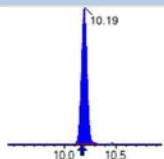
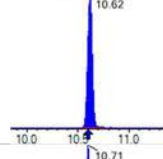
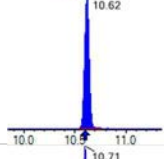
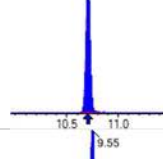
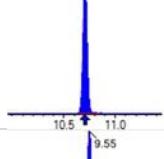
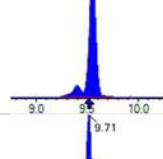
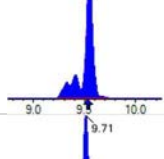
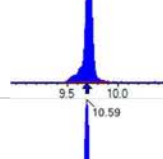
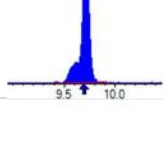
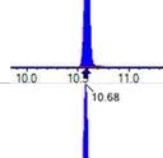
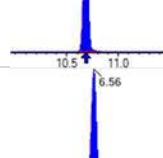
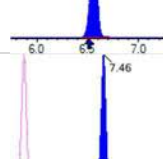
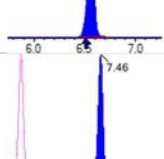
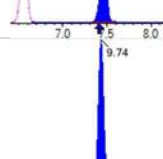
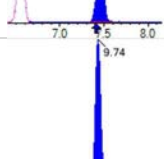
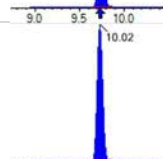
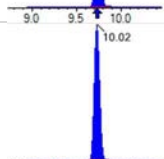
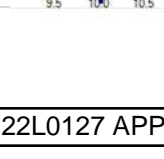
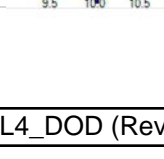
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 108132	(9.33, N/A) (N/A, 0.01, N/A)	387.5	N/A	1.0427 [1.0000]	104.3% { 110.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 255747	(8.04, N/A) (N/A, 0.01, N/A)	675.0	N/A	1.0810 [1.0000]	108.1% { 101.1% }			
13C4_PFOS_IIS	(502.8 / 79.9) 225377	(9.48, N/A) (N/A, 0.01, N/A)	555.8	N/A	1.1234 [1.0000]	112.3% { 102.1% }			
13C4_PFBA_EIS	(217.0 / 172.0) 712942	(3.70, N/A) (N/A, -0.01, N/A)	842.4	N/A	7.7101 [8.0000]	96.4% { 98.3% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 390737	(5.01, N/A) (N/A, 0.00, N/A)	718.8	N/A	3.6465 [4.0000]	91.2% { 103.5% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 314247	(6.16, N/A) (N/A, 0.00, N/A)	681.5	N/A	1.8341 [2.0000]	91.7% { 103.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 269474	(7.09, N/A) (N/A, 0.00, N/A)	667.5	N/A	1.7802 [2.0000]	89.0% { 98.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 277696	(7.91, N/A) (N/A, 0.00, N/A)	581.5	N/A	1.9632 [2.0000]	98.2% { 109.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 110159	(8.65, N/A) (N/A, 0.00, N/A)	303.2	N/A	0.9609 [1.0000]	96.1% { 105.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 132503	(9.33, N/A) (N/A, 0.00, N/A)	411.2	N/A	0.9043 [1.0000]	90.4% { 92.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 195488	(9.73, N/A) (N/A, 0.01, N/A)	470.2	N/A	0.9266 [1.0000]	92.7% { 104.5% }			

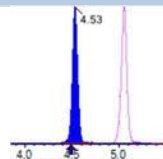
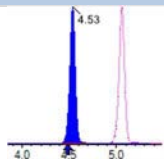
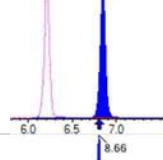
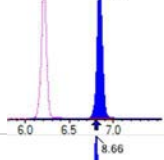
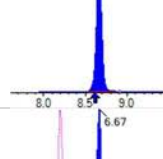
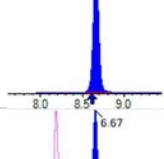
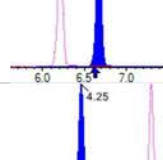
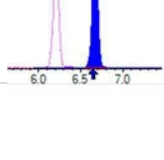
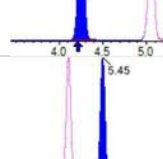
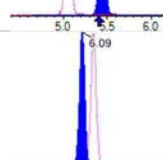
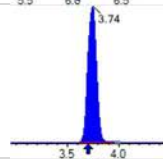

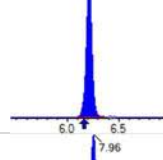
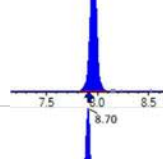
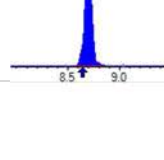
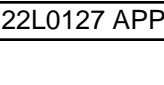
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[min], Δ RT-CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 232409	(9.90, N/A) (N/A, 0.01, N/A)	875.5	N/A	0.9768 [1.0000]	97.7% { 107.8% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 171341	(10.13, N/A) (N/A, 0.00, N/A)	361.1	N/A	1.1849 [1.0000]	118.5% { 141.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 797888	(6.13, N/A) (N/A, 0.00, N/A)	707.4	N/A	1.9102 [2.0000]	95.5% { 105.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 400481	(8.04, N/A) (N/A, 0.00, N/A)	704.9	N/A	1.8488 [2.0000]	92.4% { 103.9% }			
13C8_PFOS_EIS	(507.0 / 80.0) 651265	(9.48, N/A) (N/A, 0.01, N/A)	285.0	N/A	1.7591 [2.0000]	88.0% { 97.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 87909	(5.83, N/A) (N/A, 0.00, N/A)	707.6	N/A	3.7325 [4.0000]	93.3% { 99.7% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 115065	(7.57, N/A) (N/A, 0.00, N/A)	664.2	N/A	3.8122 [4.0000]	95.3% { 107.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 95371	(8.98, N/A) (N/A, 0.00, N/A)	399.9	N/A	3.5245 [4.0000]	88.1% { 101.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 954124	(10.18, N/A) (N/A, 0.00, N/A)	826.3	N/A	1.7708 [2.0000]	88.5% { 98.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 250206	(10.61, N/A) (N/A, 0.00, N/A)	736.3	N/A	1.8640 [2.0000]	93.2% { 104.3% }			
D5_NeIFOSA_EIS	(531.1 / 169.0) 223481	(10.70, N/A) (N/A, 0.00, N/A)	1349.8	N/A	1.7830 [2.0000]	89.1% { 97.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 301337	(9.52, N/A) (N/A, 0.00, N/A)	337.2	N/A	3.4698 [4.0000]	86.7% { 105.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 254738	(9.69, N/A) (N/A, 0.00, N/A)	388.0	N/A	3.5294 [4.0000]	88.2% { 99.4% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 469116	(10.58, N/A) (N/A, 0.00, N/A)	787.1	N/A	18.1687 [20.0000]	90.8% { 93.7% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 259487	(10.67, N/A) (N/A, 0.00, N/A)	1188.7	N/A	18.6628 [20.0000]	93.3% { 98.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 765717	(6.51, N/A) (N/A, 0.00, N/A)	1009.4	N/A	7.3402 [8.0000]	91.8% { 103.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(212.9 / 169.0) 4511487	(3.74, 1.00) (0.00, N/A, 0.0)	62.1	N/A 0.0 0.0	79.1944 [80.0000]	99.0%			
PFPeA	(262.9 / 219.0) 3473618 (262.9 / 69.0) 38380	(5.06, 1.00) (0.00, N/A, 0.1)	961.4 533.5	0.0110 12945.6 108.1	42.6267 [40.0000]	106.6%			
PFHxA	(313.0 / 269.0) 2745514 (313.0 / 119.0) 266696	(6.21, 1.00) (0.00, N/A, -0.1)	945.8 555.3	0.0971 99.0 99.0	20.6603 [20.0000]	103.3%			
PFHpA	(363.0 / 319.0) 2377511 (363.0 / 169.0) 688725	(7.14, 1.00) (0.00, N/A, -0.1)	856.6 677.1	0.2897 92.7 92.7	19.4007 [20.0000]	97.0%			
PFOA	(413.0 / 369.0) 2750616 (413.0 / 169.0) 865497	(7.96, 1.00) (0.00, N/A, 0.0)	821.7 690.1	0.3147 93.4 93.4	20.3703 [20.0000]	101.9%			
PFNA	(463.0 / 419.0) 1798628 (463.0 / 169.0) 393871	(8.70, 1.00) (0.00, N/A, -0.1)	589.0 135.4	0.2190 109.1 109.1	19.1968 [20.0000]	96.0%			
PFDA	(513.0 / 469.0) 2454366 (513.0 / 169.0) 259918	(9.37, 1.00) (0.00, N/A, -0.4)	641.4 511.6	0.1059 133.1 133.1	20.7308 [20.0000]	103.7%			
PFUnA	(563.0 / 519.0) 2592927 (563.0 / 169.0) 280694	(9.74, 1.00) (0.00, N/A, 0.0)	517.7 427.5	0.1083 96.6 96.6	17.8070 [20.0000]	89.0%			
PFDoA	(613.0 / 569.0) 3556759 (613.0 / 169.0) 474664	(9.91, 1.00) (0.00, N/A, 0.1)	773.0 485.9	0.1335 106.3 106.3	18.3654 [20.0000]	91.8%			
PFTrDA	(663.0 / 619.0) 2628350 (663.0 / 169.0) 624857	(10.04, 1.01) (N/A, 0.01, 0.1)	942.9 413.5	0.2377 113.7 113.7	16.4453 [20.0000]	82.2%			
PFTeDA	(713.0 / 669.0) 2217979 (713.0 / 169.0) 497239	(10.14, 1.00) (0.00, N/A, 0.1)	686.2 714.8	0.2242 98.8 98.8	19.3782 [20.0000]	96.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(298.9 / 80.0) 3712453 (298.9 / 99.0) 2315898	(6.17, 1.00) (0.01, N/A, 0.1)	761.3 823.3	0.6238 91.7 91.7	19.0434 [17.6947]	107.6%			
PFPeS	(349.0 / 80.0) 6610001 (349.0 / 99.0) 2412115	(7.22, 0.89) (N/A, 0.05, 0.1)	901.8 788.9	0.3649 97.7 97.7	18.8632 [18.7676]	100.5%			
PFHxS	(399.0 / 80.0) 5597788 (399.0 / 99.0) 1964254	(8.09, 1.00) (0.00, N/A, 0.0)	3562.0 3298.2	0.3509 102.4 102.4	18.8436 [18.2197]	103.4%			
PFHpS	(449.0 / 80.0) 5167348 (449.0 / 99.0) 1387584	(8.85, 0.93) (N/A, 0.05, 0.3)	573.3 663.2	0.2685 91.5 91.5	18.0603 [19.0281]	94.9%			
PFOS	(499.0 / 80.0) 6675271 (499.0 / 99.0) 1465732	(9.51, 1.00) (0.00, N/A, -0.1)	134.0 261.1	0.2196 96.1 96.1	18.8185 [18.5499]	101.4%			
PFNS	(549.0 / 80.0) 8147719 (549.0 / 99.0) 2096049	(9.79, 1.03) (N/A, 0.01, -0.1)	955.0 861.6	0.2573 103.1 103.1	19.9755 [19.1977]	104.1%			
PFDS	(599.0 / 80.0) 9469190 (599.0 / 99.0) 2380224	(9.93, 1.04) (N/A, 0.02, 0.2)	983.5 1441.6	0.2514 98.6 98.6	18.8138 [19.2621]	97.7%			
PFDoS	(698.9 / 80.0) 5085058 (698.9 / 99.0) 1057564	(10.12, 1.06) (N/A, 0.01, 0.0)	1146.1 1190.6	0.2080 101.2 101.2	19.3557 [19.3913]	99.8%			
4:2FTS	(327.0 / 307.0) 5239823 (327.0 / 81.0) 2989212	(5.88, 1.00) (0.00, N/A, 0.1)	941.0 890.3	0.5705 114.1 114.1	65.7114 [74.7622]	87.9%			
6:2FTS	(427.0 / 407.0) 3034232 (427.0 / 81.0) 2154514	(7.61, 1.00) (0.00, N/A, 0.0)	988.8 1091.1	0.7101 99.1 99.1	74.4095 [75.9234]	98.0%			
8:2FTS	(527.0 / 507.0) 2851246 (527.0 / 81.0) 1877965	(9.03, 1.00) (0.00, N/A, -0.1)	682.5 712.6	0.6586 93.6 93.6	67.2867 [76.6631]	87.8%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ 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) 9311493 (498.0 / 478.0) 214634	(10.19, 1.00) (0.00, N/A, -0.1)	1354.1 935.8	0.0231 97.5 97.5	19.6481 [20.0000]	98.2%			
NMeFOSA	(511.9 / 219.0) 6996515 (511.9 / 169.0) 4904697	(10.62, 1.00) (0.00, N/A, 0.1)	1475.4 1354.5	0.7010 100.5 100.5	69.4520 [80.0000]	86.8%			
NEIFOSA	(526.0 / 219.0) 7868329 (526.0 / 169.0) 8190292	(10.71, 1.00) (0.00, N/A, 0.0)	1307.7 1217.9	1.0409 92.4 92.4	75.2924 [80.0000]	94.1%			
NMeFOSAA	(570.0 / 419.0) 1214931 (570.0 / 483.0) 566427	(9.55, 1.00) (0.00, N/A, 0.1)	456.9 614.4	0.4662 99.3 99.3	19.2144 [20.0000]	96.1%			
NEIFOSAA	(584.0 / 419.0) 1150074 (584.0 / 526.0) 682283	(9.71, 1.00) (0.00, N/A, 0.0)	1014.7 8278.9	0.5933 77.0 77.0	24.0630 [20.0000]	120.3%			
NMeFOSE	(616.1 / 59.0) 2326736	(10.59, 1.00) (0.01, N/A, 0.0)	871.5	N/A 0.0 0.0	84.3517 [80.0000]	105.4%			
NEtFOSE	(630.0 / 59.0) 621358	(10.68, 1.00) (0.01, N/A, 0.0)	1110.1	N/A 0.0 0.0	79.5354 [80.0000]	99.4%			
HFPO-DA	(285.0 / 169.0) 2424724 (285.0 / 185.0) 6755443	(6.56, 1.00) (0.00, N/A, 0.0)	868.1 1056.8	2.7861 109.2 109.2	42.2552 [40.0000]	105.6%			
ADONA	(377.0 / 85.0) 8852350 (377.0 / 251.0) 1018733	(7.46, 1.14) (N/A, 0.05, 0.0)	1160.3 747.1	0.1151 91.8 91.8	37.2133 [37.7080]	98.7%			
9CI-Pr3ONS	(531.0 / 351.0) 23009665 (533.0 / 353.0) 7280282	(9.74, 1.49) (N/A, 0.02, 0.0)	717.7 586.6	0.3164 99.9 99.9	34.1089 [37.3302]	91.4%			
11Cl-PF3OUDS	(631.0 / 451.0) 17065113 (633.0 / 453.0) 5067254	(10.02, 1.53) (N/A, 0.01, 0.0)	1003.4 701.7	0.2969 101.5 101.5	38.3902 [37.7283]	101.8%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ 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) 300869 (241.0 / 117.0) 497887	(4.53, 0.90) (N/A, 0.04, -0.1)	820.2 887.5	1.6548 0.1 100.0	86.0833 [80.0000]	107.6%			IR1,
5:3FTCA	(341.0 / 236.7) 2259608 (341.0 / 217.0) 3850070	(6.85, 1.10) (N/A, 0.05, 0.2)	677.7 832.0	1.7039 107.8 107.8	83.5049 [80.0000]	104.4%			
7:3FTCA	(441.0 / 317.0) 2688883 (441.0 / 337.0) 2147482	(8.66, 1.40) (N/A, 0.05, 0.0)	674.0 607.6	0.7987 98.2 98.2	88.0507 [80.0000]	110.1%			
PFEESA	(315.0 / 135.0) 5046110 (315.0 / 83.0) 1418283	(6.67, 1.07) (N/A, 0.05, 0.1)	755.3 1102.8	0.2811 99.4 99.4	36.9763 [35.6984]	103.6%			
PFMPA	(229.0 / 85.0) 899149	(4.25, 0.84) (N/A, 0.04, 0.0)	1065.7	N/A 0.0 0.0	40.8802 [40.0000]	102.2%			
PFMBA	(279.0 / 85.0) 3081463	(5.45, 1.08) (N/A, 0.05, 0.0)	1003.1	N/A 0.0 0.0	42.9170 [40.0000]	107.3%			
NFDHA	(201.0 / 85.0) 109882 (295.0 / 201.0) 811415	(6.09, 0.98) (N/A, 0.05, 0.0)	696.0 497.4	7.3844 0.9 89.6	41.8613 [40.0000]	104.7%			IR1,
13C3_PFBA_IIS	(216.0 / 172.0) 85842	(3.74, N/A) (N/A, 0.03, N/A)	660.4	N/A	0.9818 [1.0000]	98.2% { 93.0% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 142839	(6.21, N/A) (N/A, 0.05, N/A)	569.6	N/A	1.0856 [1.0000]	108.6% { 113.5% }			
13C4_PFOA_IIS	(417.0 / 372.0) 136659	(7.96, N/A) (N/A, 0.05, N/A)	579.1	N/A	1.0918 [1.0000]	109.2% { 107.4% }			
13C5_PFNA_IIS	(468.0 / 423.0) 86144	(8.70, N/A) (N/A, 0.06, N/A)	408.5	N/A	0.8630 [1.0000]	86.3% { 78.4% }			

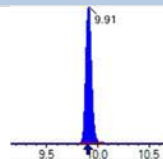
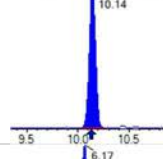
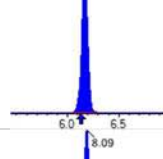
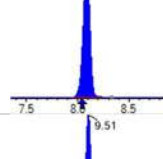
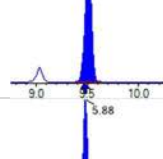
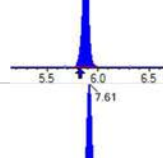
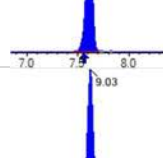
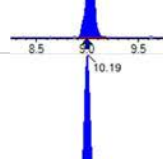
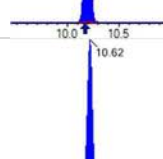
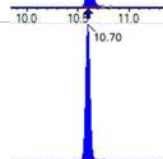



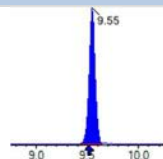
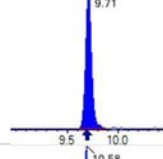
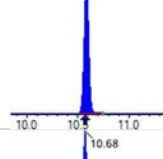
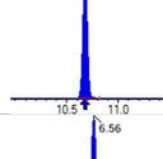
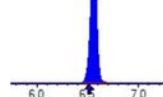
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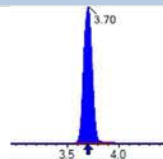
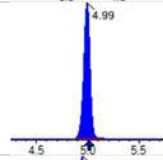
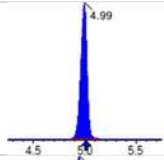
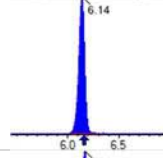
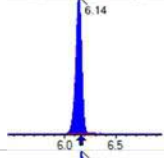
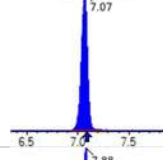
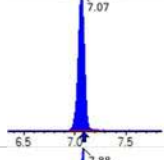
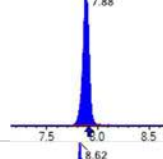
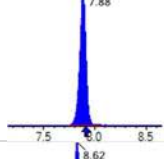
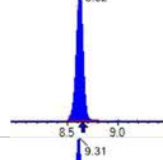
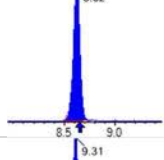
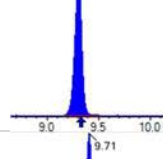
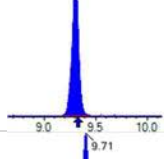
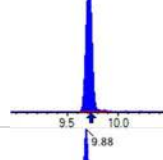
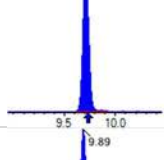
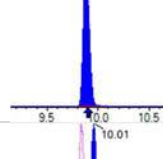
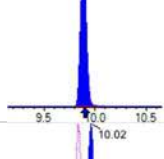
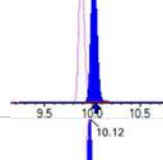
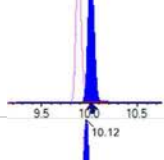
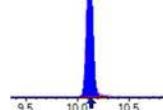
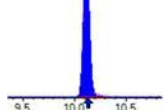
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 Acquisition Method: 1633 2022-12-13.dam

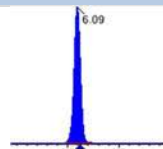
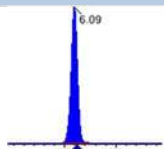
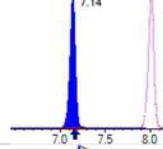
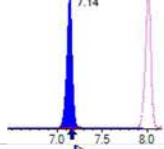
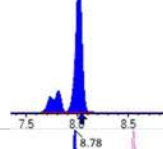
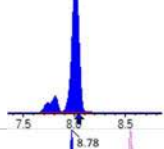
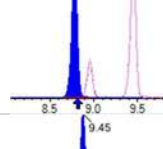
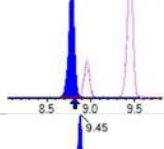
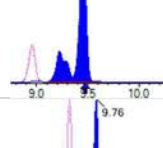
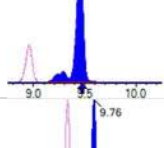
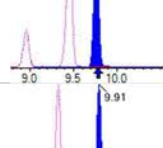
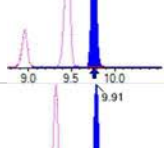
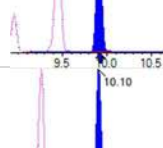
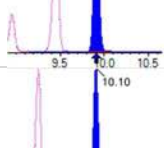
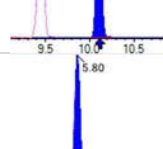
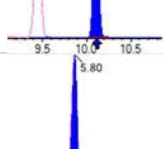
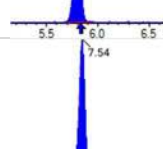
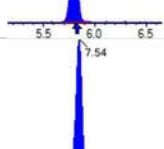
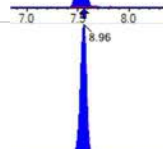
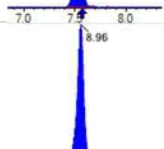

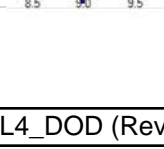
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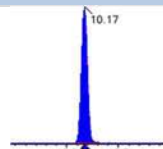
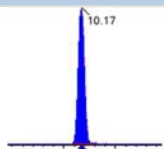
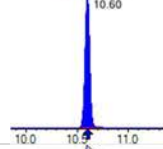
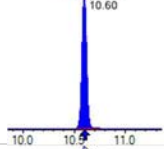
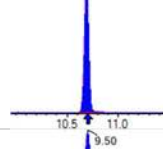
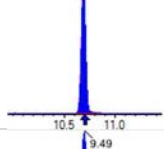
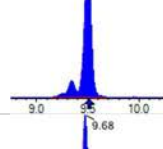
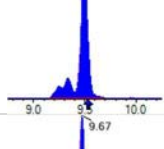
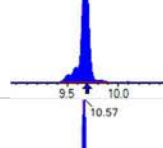
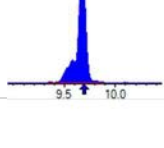
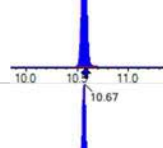
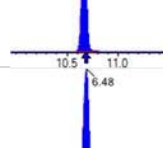
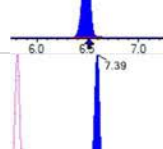
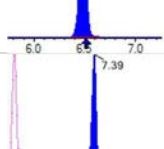
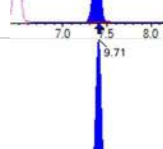
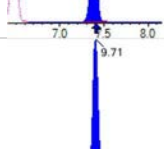
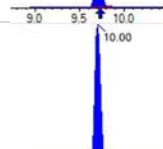
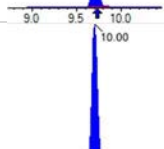

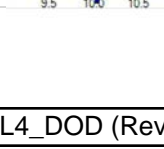
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-I[min], ΔRT-CV[min], ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDA_IIS	(515.1 / 470.1) 114170	(9.37, N/A) (N/A, 0.04, N/A)	546.9	N/A	1.1009 [1.0000]	110.1% { 116.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 238204	(8.08, N/A) (N/A, 0.05, N/A)	656.5	N/A	1.0069 [1.0000]	100.7% { 94.2% }			
13C4_PFOS_IIS	(502.8 / 79.9) 213057	(9.51, N/A) (N/A, 0.04, N/A)	490.2	N/A	1.0620 [1.0000]	106.2% { 96.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 686177	(3.74, N/A) (N/A, 0.03, N/A)	769.9	N/A	7.7208 [8.0000]	96.5% { 94.7% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 360033	(5.06, N/A) (N/A, 0.05, N/A)	743.8	N/A	3.4237 [4.0000]	85.6% { 95.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 292946	(6.21, N/A) (N/A, 0.05, N/A)	582.8	N/A	1.7422 [2.0000]	87.1% { 96.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 271429	(7.14, N/A) (N/A, 0.04, N/A)	634.6	N/A	1.8271 [2.0000]	91.4% { 99.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 284935	(7.96, N/A) (N/A, 0.05, N/A)	803.7	N/A	1.8869 [2.0000]	94.3% { 112.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 110881	(8.69, N/A) (N/A, 0.04, N/A)	482.2	N/A	1.1784 [1.0000]	117.8% { 106.1% }			
13C6_PFDA_EIS	(519.0 / 474.0) 128415	(9.37, N/A) (N/A, 0.04, N/A)	372.9	N/A	0.8301 [1.0000]	83.0% { 90.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 195380	(9.74, N/A) (N/A, 0.02, N/A)	331.4	N/A	0.8771 [1.0000]	87.7% { 104.4% }			

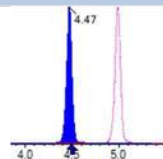
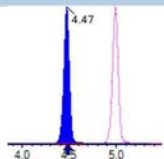
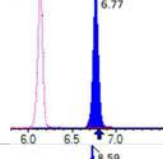
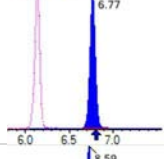
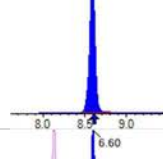
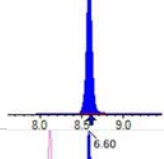
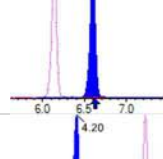
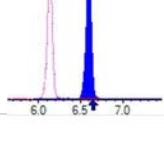
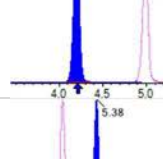
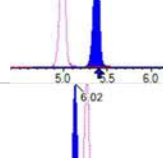
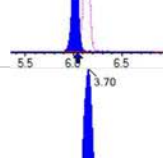
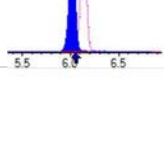
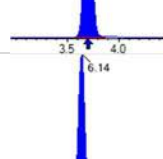
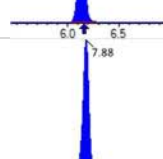
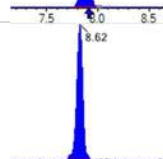

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
13C2_PFDa_EIS	(615.0 / 570.0) 241774	(9.91, N/A) (N/A, 0.01, N/A)	393.1	N/A	0.9624 [1.0000]	96.2% { 112.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 119594	(10.14, N/A) (N/A, 0.01, N/A)	319.8	N/A	0.7833 [1.0000]	78.3% { 98.9% }			
13C3_PFBs_EIS	(302.0 / 80.0) 713776	(6.17, N/A) (N/A, 0.04, N/A)	566.1	N/A	1.8347 [2.0000]	91.7% { 94.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 373582	(8.09, N/A) (N/A, 0.05, N/A)	770.6	N/A	1.8517 [2.0000]	92.6% { 97.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 645470	(9.51, N/A) (N/A, 0.04, N/A)	222.7	N/A	1.8443 [2.0000]	92.2% { 96.6% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 100014	(5.88, N/A) (N/A, 0.05, N/A)	686.2	N/A	4.5592 [4.0000]	114.0% { 113.4% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 105640	(7.61, N/A) (N/A, 0.05, N/A)	527.4	N/A	3.7577 [4.0000]	93.9% { 98.9% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 115639	(9.03, N/A) (N/A, 0.04, N/A)	381.0	N/A	4.5883 [4.0000]	114.7% { 122.4% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 952275	(10.19, N/A) (N/A, 0.01, N/A)	1335.0	N/A	1.8696 [2.0000]	93.5% { 97.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 252527	(10.62, N/A) (N/A, 0.01, N/A)	744.5	N/A	1.9901 [2.0000]	99.5% { 105.2% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 229198	(10.70, N/A) (N/A, 0.01, N/A)	1031.7	N/A	1.9343 [2.0000]	96.7% { 99.6% }			

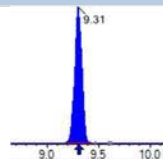
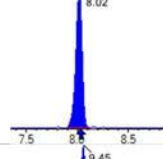
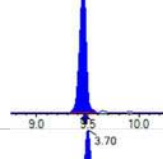
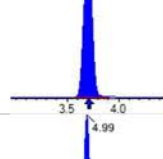
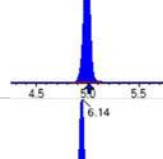
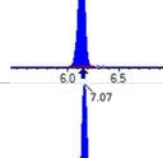
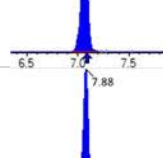
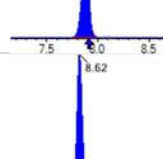
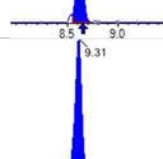
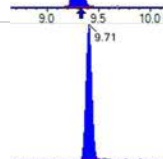

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
D3_MeFOSAA_EIS	(573.0 / 419.0) 348983	(9.55, N/A) (N/A, 0.03, N/A)	395.8	N/A	4.2508 [4.0000]	106.3% { 122.5% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 212081	(9.71, N/A) (N/A, 0.02, N/A)	476.6	N/A	3.1083 [4.0000]	77.7% { 82.8% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 433249	(10.58, N/A) (N/A, 0.01, N/A)	841.6	N/A	17.7499 [20.0000]	88.7% { 86.5% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 244765	(10.68, N/A) (N/A, 0.01, N/A)	1487.2	N/A	18.6220 [20.0000]	93.1% { 92.4% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 751293	(6.56, N/A) (N/A, 0.05, N/A)	924.5	N/A	7.3384 [8.0000]	91.7% { 101.0% }			

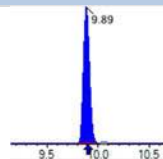
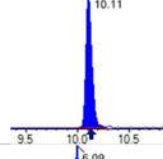
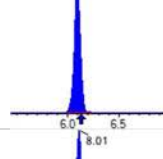
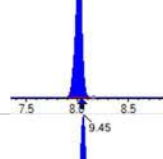
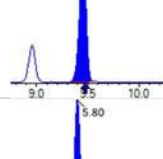
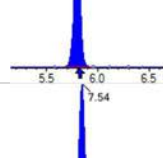
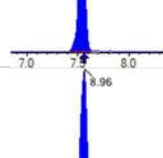
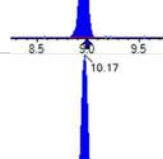
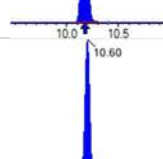
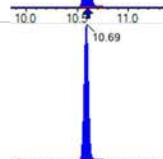

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 9609446	(3.70, 1.00) (0.00, N/A, 0.0)	54.0	N/A 0.0 0.0	202.5833 [200.0000]	101.3%			
PFPeA	(262.9 / 219.0) 7078628 (262.9 / 69.0) 83513	(4.99, 1.00) (0.00, N/A, -0.1)	861.1 905.9	0.0118 13823.1 115.5	93.0005 [100.0000]	93.0%			
PFHxA	(313.0 / 269.0) 6339830 (313.0 / 119.0) 545663	(6.14, 1.00) (0.00, N/A, 0.0)	962.8 574.8	0.0861 87.7 87.7	47.9477 [50.0000]	95.9%			
PFHpA	(363.0 / 319.0) 5659079 (363.0 / 169.0) 1604956	(7.07, 1.00) (0.00, N/A, 0.1)	760.2 856.3	0.2836 90.7 90.7	50.6362 [50.0000]	101.3%			
PFOA	(413.0 / 369.0) 6099444 (413.0 / 169.0) 1877338	(7.88, 1.00) (0.00, N/A, 0.0)	960.6 809.9	0.3078 91.4 91.4	51.2627 [50.0000]	102.5%			
PFNA	(463.0 / 419.0) 3970833 (463.0 / 169.0) 865576	(8.62, 1.00) (0.00, N/A, 0.0)	685.6 107.1	0.2180 108.6 108.6	51.3559 [50.0000]	102.7%			
PFDA	(513.0 / 469.0) 5597687 (513.0 / 169.0) 551426	(9.31, 1.00) (0.00, N/A, -0.1)	599.7 515.5	0.0985 123.8 123.8	48.3365 [50.0000]	96.7%			
PFUnA	(563.0 / 519.0) 5814203 (563.0 / 169.0) 561805	(9.71, 1.00) (0.00, N/A, 0.1)	688.3 452.2	0.0966 86.3 86.3	46.2875 [50.0000]	92.6%			
PFDoA	(613.0 / 569.0) 8365635 (613.0 / 169.0) 1078202	(9.88, 1.00) (0.00, N/A, -0.1)	929.1 785.3	0.1289 102.6 102.6	49.1347 [50.0000]	98.3%			
PFTrDA	(663.0 / 619.0) 6480793 (663.0 / 169.0) 1252181	(10.01, 1.01) (N/A, -0.01, -0.1)	802.7 971.6	0.1932 92.4 92.4	46.1243 [50.0000]	92.2%			
PFTeDA	(713.0 / 669.0) 5397130 (713.0 / 169.0) 1072435	(10.12, 1.00) (0.01, N/A, 0.2)	1039.2 724.7	0.1987 87.5 87.5	49.9710 [50.0000]	99.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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	(298.9 / 80.0) 7713819 (298.9 / 99.0) 5488643	(6.09, 1.00) (0.00, N/A, 0.0)	829.2 892.2	0.7115 104.6 104.6	41.7930 [44.2367]	94.5%			
PFPeS	(349.0 / 80.0) 16215765 (349.0 / 99.0) 5859987	(7.14, 0.89) (N/A, -0.02, 0.1)	949.3 761.9	0.3614 96.8 96.8	45.2308 [46.9191]	96.4%			
PFHxS	(399.0 / 80.0) 13373568 (399.0 / 99.0) 4392758	(8.01, 1.00) (0.00, N/A, 0.2)	3340.4 4400.7	0.3285 95.8 95.8	44.0026 [45.5491]	96.6%			
PFHpS	(449.0 / 80.0) 12162174 (449.0 / 99.0) 3390972	(8.78, 0.93) (N/A, -0.03, -0.1)	752.4 699.6	0.2788 95.0 95.0	45.1460 [47.5703]	94.9%			
PFOS	(499.0 / 80.0) 13960172 (499.0 / 99.0) 3328999	(9.45, 1.00) (0.00, N/A, 0.0)	116.8 242.7	0.2385 104.3 104.3	41.7982 [46.3746]	90.1%			
PFNS	(549.0 / 80.0) 16618068 (549.0 / 99.0) 4229781	(9.76, 1.03) (N/A, -0.01, 0.0)	871.4 578.9	0.2545 102.0 102.0	43.2705 [47.9943]	90.2%			
PFDS	(599.0 / 80.0) 21537462 (599.0 / 99.0) 4943361	(9.91, 1.05) (N/A, -0.01, 0.1)	1005.7 891.9	0.2295 90.0 90.0	45.4473 [48.1553]	94.4%			
PFDoS	(698.9 / 80.0) 11052439 (698.9 / 99.0) 2632006	(10.10, 1.07) (N/A, -0.01, -0.1)	944.1 1062.8	0.2381 115.9 115.9	44.6808 [48.4781]	92.2%			
4:2FTS	(327.0 / 307.0) 11918066 (327.0 / 81.0) 7340607	(5.80, 1.00) (0.00, N/A, -0.1)	1034.9 952.6	0.6159 123.2 123.2	172.5992 [186.9055]	92.3%			
6:2FTS	(427.0 / 407.0) 7406066 (427.0 / 81.0) 5335631	(7.54, 1.00) (0.00, N/A, 0.1)	912.1 989.7	0.7204 100.6 100.6	169.9758 [189.8085]	89.6%			
8:2FTS	(527.0 / 507.0) 6556412 (527.0 / 81.0) 4053724	(8.96, 1.00) (0.00, N/A, -0.1)	665.0 641.3	0.6183 87.9 87.9	155.6544 [191.6577]	81.2%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 18391253 (498.0 / 478.0) 395988	(10.17 , 1.00) (0.00 , N/A , 0.1)	929.9 709.9	0.0215 91.1 91.1	52.7335 [50.0000]	105.5%			
NMeFOSA	(511.9 / 219.0) 14999502 (511.9 / 169.0) 10323613	(10.60 , 1.00) (0.00 , N/A , 0.1)	1120.8 966.5	0.6883 98.7 98.7	155.9464 [200.0000]	78.0%			
NEIFOSA	(526.0 / 219.0) 16323004 (526.0 / 169.0) 17127846	(10.69 , 1.00) (0.00 , N/A , 0.1)	1579.4 1507.7	1.0493 93.2 93.2	187.1992 [200.0000]	93.6%			
NMeFOSAA	(570.0 / 419.0) 2720368 (570.0 / 483.0) 1388089	(9.50 , 1.00) (0.01 , N/A , 0.3)	576.8 663.2	0.5103 108.6 108.6	51.8028 [50.0000]	103.6%			
NEIFOSAA	(584.0 / 419.0) 2311771 (584.0 / 526.0) 1466573	(9.68 , 1.00) (0.01 , N/A , 0.0)	926.7 1382.2	0.6344 82.4 82.4	45.5331 [50.0000]	91.1%			
NMeFOSE	(616.1 / 59.0) 5027635	(10.57 , 1.00) (0.01 , N/A , 0.0)	1239.4	N/A 0.0 0.0	212.8227 [200.0000]	106.4%			
NEIFOSE	(630.0 / 59.0) 1193472	(10.67 , 1.00) (0.01 , N/A , 0.0)	1261.2	N/A 0.0 0.0	184.9681 [200.0000]	92.5%			
HFPO-DA	(285.0 / 169.0) 5216858 (285.0 / 185.0) 14918772	(6.48 , 1.00) (0.00 , N/A , 0.2)	880.6 1000.9	2.8597 112.1 112.1	95.1339 [100.0000]	95.1%			
ADONA	(377.0 / 85.0) 18563535 (377.0 / 251.0) 2591926	(7.39 , 1.14) (N/A , -0.03 , 0.0)	820.1 828.2	0.1396 111.3 111.3	81.6598 [94.2700]	86.6%			
9CI-Pf3ONS	(531.0 / 351.0) 45682625 (533.0 / 353.0) 14729723	(9.71 , 1.50) (N/A , -0.01 , 0.1)	609.1 656.4	0.3224 101.8 101.8	70.8626 [93.3254]	75.9%			
11CI-PF3OUDS	(631.0 / 451.0) 35077720 (633.0 / 453.0) 11700919	(10.00 , 1.54) (N/A , -0.01 , 0.0)	993.9 1153.0	0.3336 114.0 114.0	82.5755 [94.3208]	87.5%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ 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) 716110 (241.0 / 117.0) 1183247	(4.47, 0.90) (N/A, -0.02, 0.0)	789.5 804.8	1.6523 0.1 99.8	219.3603 [200.0000]	109.7%			IR1,
5:3FTCA	(341.0 / 236.7) 5151839 (341.0 / 217.0) 9108691	(6.77, 1.10) (N/A, -0.03, 0.0)	837.9 884.4	1.7680 111.9 111.9	191.3456 [200.0000]	95.7%			
7:3FTCA	(441.0 / 317.0) 5929127 (441.0 / 337.0) 5039168	(8.59, 1.40) (N/A, -0.03, 0.2)	543.1 529.6	0.8499 104.5 104.5	195.1321 [200.0000]	97.6%			
PFEESA	(315.0 / 135.0) 10692268 (315.0 / 83.0) 3247766	(6.60, 1.08) (N/A, -0.03, 0.1)	849.9 1046.7	0.3037 107.5 107.5	78.7433 [89.2459]	88.2%			
PFMPA	(229.0 / 85.0) 1933344	(4.20, 0.84) (N/A, -0.01, 0.0)	1193.5	N/A 0.0 0.0	94.1081 [100.0000]	94.1%			
PFMBA	(279.0 / 85.0) 6195918	(5.38, 1.08) (N/A, -0.02, 0.0)	1029.1	N/A 0.0 0.0	92.3879 [100.0000]	92.4%			
NFDHA	(201.0 / 85.0) 250772 (295.0 / 201.0) 1708275	(6.02, 0.98) (N/A, -0.02, -0.2)	811.6 698.3	6.8121 0.9 82.7	96.1658 [100.0000]	96.2%			IR1,
13C3_PFBA_IIS	(216.0 / 172.0) 71800	(3.70, N/A) (N/A, -0.01, N/A)	711.9	N/A	0.8212 [1.0000]	82.1% { 77.8% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 126599	(6.14, N/A) (N/A, -0.03, N/A)	559.1	N/A	0.9622 [1.0000]	96.2% { 100.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 115787	(7.88, N/A) (N/A, -0.02, N/A)	604.1	N/A	0.9250 [1.0000]	92.5% { 91.0% }			
13C5_PFNxA_IIS	(468.0 / 423.0) 97367	(8.62, N/A) (N/A, -0.02, N/A)	343.3	N/A	0.9754 [1.0000]	97.5% { 88.6% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ 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	(515.1 / 470.1) 105855	(9.31, N/A) (N/A, -0.02, N/A)	333.2	N/A	1.0208 [1.0000]	102.1% { 107.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 212729	(8.02, N/A) (N/A, -0.02, N/A)	563.9	N/A	0.8992 [1.0000]	89.9% { 84.1% }			
13C4_PFOS_IIS	(502.8 / 79.9) 160027	(9.45, N/A) (N/A, -0.02, N/A)	279.8	N/A	0.7977 [1.0000]	79.8% { 72.5% }			
13C4_PFBA_EIS	(217.0 / 172.0) 571354	(3.70, N/A) (N/A, -0.01, N/A)	648.6	N/A	7.6861 [8.0000]	96.1% { 78.8% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 336284	(4.99, N/A) (N/A, -0.02, N/A)	943.0	N/A	3.6080 [4.0000]	90.2% { 89.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 291481	(6.14, N/A) (N/A, -0.02, N/A)	620.0	N/A	1.9558 [2.0000]	97.8% { 96.2% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 247534	(7.07, N/A) (N/A, -0.03, N/A)	596.9	N/A	1.8800 [2.0000]	94.0% { 90.3% }			
13C8_PFOA_EIS	(421.0 / 376.0) 251075	(7.88, N/A) (N/A, -0.03, N/A)	618.2	N/A	1.9624 [2.0000]	98.1% { 99.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 91503	(8.62, N/A) (N/A, -0.03, N/A)	366.9	N/A	0.8603 [1.0000]	86.0% { 87.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 125611	(9.31, N/A) (N/A, -0.02, N/A)	522.8	N/A	0.8757 [1.0000]	87.6% { 88.1% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 168542	(9.71, N/A) (N/A, -0.01, N/A)	261.9	N/A	0.8161 [1.0000]	81.6% { 90.1% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 212553	(9.89, N/A) (N/A, -0.01, N/A)	358.6	N/A	0.9126 [1.0000]	91.3% { 98.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 112852	(10.11, N/A) (N/A, -0.02, N/A)	282.6	N/A	0.7972 [1.0000]	79.7% { 93.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 675788	(6.09, N/A) (N/A, -0.03, N/A)	896.0	N/A	1.9451 [2.0000]	97.3% { 89.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 382210	(8.01, N/A) (N/A, -0.02, N/A)	823.7	N/A	2.1213 [2.0000]	106.1% { 99.2% }			
13C8_PFOS_EIS	(507.0 / 80.0) 607753	(9.45, N/A) (N/A, -0.02, N/A)	123.5	N/A	2.3119 [2.0000]	115.6% { 91.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 86607	(5.80, N/A) (N/A, -0.03, N/A)	475.2	N/A	4.4208 [4.0000]	110.5% { 98.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 112877	(7.54, N/A) (N/A, -0.03, N/A)	577.9	N/A	4.4960 [4.0000]	112.4% { 105.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 114949	(8.96, N/A) (N/A, -0.03, N/A)	487.0	N/A	5.1071 [4.0000]	127.7% { 121.7% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 700791	(10.17, N/A) (N/A, -0.01, N/A)	649.2	N/A	1.8318 [2.0000]	91.6% { 72.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 241108	(10.60, N/A) (N/A, -0.01, N/A)	940.4	N/A	2.5298 [2.0000]	126.5% { 100.5% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 191239	(10.69, N/A) (N/A, -0.01, N/A)	577.8	N/A	2.1488 [2.0000]	107.4% { 83.1% }			



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03856-CAL8
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-15A
 Path: S2022-12-15A (8)
 Acquired: 2022/12/15 - 14:02

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
D3_MeFOSAA_EIS	(573.0 / 419.0) 289837	(9.49 , N/A) (N/A , -0.02 , N/A)	515.7	N/A	4.7003 [4.0000]	117.5% { 101.7% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 225291	(9.67 , N/A) (N/A , -0.02 , N/A)	384.0	N/A	4.3961 [4.0000]	109.9% { 87.9% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 371048	(10.56 , N/A) (N/A , -0.01 , N/A)	1090.7	N/A	20.2390 [20.0000]	101.2% { 74.1% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 202155	(10.66 , N/A) (N/A , -0.01 , N/A)	967.8	N/A	20.4767 [20.0000]	102.4% { 76.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 717962	(6.48 , N/A) (N/A , -0.03 , N/A)	863.8	N/A	7.9124 [8.0000]	98.9% { 96.6% }			

SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2251019**Laboratory ID:** SB03856-SCV1**Sequence:** SB03856**Standard ID:** 22L0308

ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	8.00	7.88	-1.5	30.00
PFPEA	4.00	3.80	-5.1	30.00
PFHXA	2.00	1.82	-9.1	30.00
PFHPA	2.00	1.92	-4.2	30.00
PFOA	2.00	1.84	-7.9	30.00
PFNA	2.00	2.02	1.2	30.00
PFDA	2.00	1.72	-14.2	30.00
PFUnA	2.00	2.12	6.0	30.00
PFDOA	2.00	2.06	2.9	30.00
PFTRDA	2.00	2.07	3.5	30.00
PFTEDA	2.00	1.78	-11.1	30.00
PFBS	1.77	1.67	-5.6	30.00
PFPEs	1.88	1.79	-4.6	30.00
PFHXS	1.83	1.67	-9.0	30.00
PFHPS	1.91	1.76	-7.6	30.00
PFOS	1.86	1.62	-13.0	30.00
PFNS	1.92	2.09	8.7	30.00
PFDS	1.93	1.89	-2.0	30.00
PFDOS	1.94	1.95	0.3	30.00
4:2FTS	7.50	6.94	-7.4	30.00
6:2FTS	7.60	7.48	-1.6	30.00
8:2FTS	7.68	8.62	12.2	30.00
PFOSA	2.00	1.81	-9.7	30.00
NMeFOSA	8.00	7.95	-0.6	30.00
NEtFOSA	8.00	7.36	-8.0	30.00
NMeFOSAA	2.00	2.53	26.7	30.00
NEtFOSAA	2.00	2.09	4.6	30.00

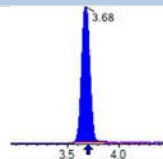
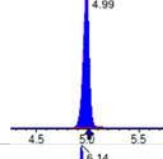
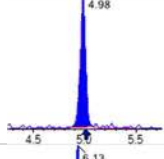
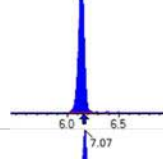
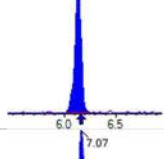
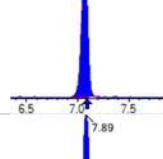
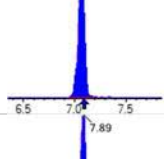
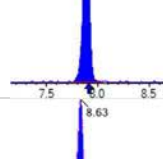
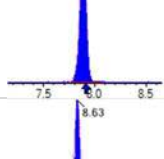
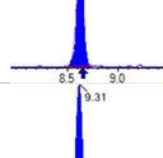
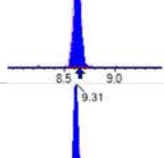
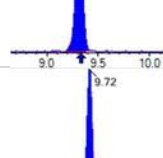
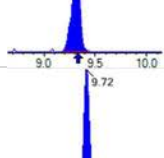
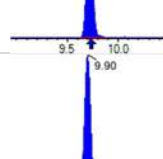
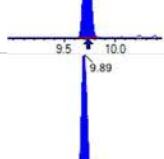
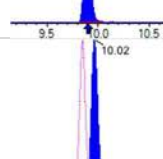
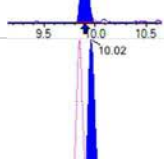
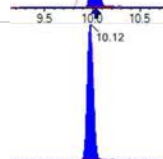
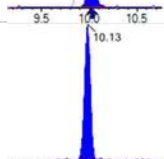

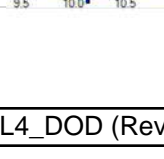
SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2251019**Laboratory ID:** SB03856-SCV1**Sequence:** SB03856**Standard ID:** 22L0308

NMeFOSE	8.00	7.33	-8.4	30.00
NEtFOSE	8.00	7.52	-6.0	30.00
HFPO-DA	4.00	3.45	-13.7	30.00
ADONA	3.78	3.63	-4.1	30.00
PFEESA	3.56	3.15	-11.6	30.00
PFMPA	4.00	3.61	-9.7	30.00
PFMBA	4.00	3.88	-3.0	30.00
NFDHA	4.00	3.64	-9.1	30.00
9CL-PF3ONS	3.74	3.82	2.1	30.00
11CL-PF3OUDS	3.78	3.93	3.9	30.00
3:3FTCA	8.00	7.51	-6.1	30.00
5:3FTCA	8.00	6.84	-14.5	30.00
7:3FTCA	8.00	7.08	-11.4	30.00
13C4-PFBA	8.00	9.34	16.8	30.00
13C5-PFPEA	4.00	4.10	2.4	30.00
13C5-PFHXA	2.00	2.19	9.5	30.00
13C4-PFHPA	2.00	2.11	5.5	30.00
13C8-PFOA	2.00	2.10	4.8	30.00
13C9-PFNA	1.00	1.11	10.9	30.00
13C6-PFDA	1.00	1.18	17.8	30.00
13C7-PFUnA	1.00	1.17	16.8	30.00
13C2-PFDOA	1.00	1.16	16.0	30.00
13C2-PFTEDA	1.00	1.32	31.8 *	30.00
13C3-PFBS	2.00	2.23	11.4	30.00
13C3-PFHXS	2.00	2.17	8.3	30.00
13C8-PFOS	2.00	2.36	17.8	30.00
13C2-4:2FTS	4.00	4.46	11.4	30.00
13C2-6:2FTS	4.00	4.07	1.6	30.00
13C2-8:2FTS	4.00	3.66	-8.6	30.00

SECOND-SOURCE CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2251019**Laboratory ID:** SB03856-SCV1**Sequence:** SB03856**Standard ID:** 22L0308

13C8-PFOSA	2.00	2.43	21.6	30.00
D5-NETFOSA	2.00	2.61	30.5 *	30.00
D3-NMEFOSA	2.00	2.43	21.5	30.00
D3-NMEFOSAA	4.00	4.57	14.2	30.00
D5-NETFOSAA	4.00	5.23	30.7 *	30.00
D7-NMEFOSE	20.0	24.6	22.9	30.00
D9-NETFOSE	20.0	23.8	19.2	30.00
13C3-HFPO-DA	8.00	8.72	9.0	30.00

* Values outside of QC limits

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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	(212.9 / 169.0) 496947	(3.68, 1.00) (0.00, N/A, 0.0)	62.7	N/A 0.0 0.0	7.8833 [8.0000]	98.5%			
PFPeA	(262.9 / 219.0) 340989 (262.9 / 69.0) 3950	(4.99, 1.00) (0.01, N/A, 0.2)	669.3 135.5	0.0116 13573.7 113.4	3.7961 [4.0000]	94.9%			
PFHxA	(313.0 / 269.0) 279897 (313.0 / 119.0) 23319	(6.14, 1.00) (0.00, N/A, 0.3)	545.2 250.9	0.0833 84.9 84.9	1.8188 [2.0000]	90.9%			
PFHpA	(363.0 / 319.0) 249866 (363.0 / 169.0) 77070	(7.07, 1.00) (0.00, N/A, 0.1)	512.8 629.7	0.3084 98.7 98.7	1.9162 [2.0000]	95.8%			
PFOA	(413.0 / 369.0) 242431 (413.0 / 169.0) 80946	(7.89, 1.00) (0.00, N/A, 0.0)	429.7 522.0	0.3339 99.1 99.1	1.8411 [2.0000]	92.1%			
PFNA	(463.0 / 419.0) 190762 (463.0 / 169.0) 40439	(8.63, 1.00) (0.00, N/A, 0.0)	325.2 83.7	0.2120 105.6 105.6	2.0235 [2.0000]	101.2%			
PFDA	(513.0 / 469.0) 237687 (513.0 / 169.0) 26243	(9.31, 1.00) (0.00, N/A, 0.2)	354.4 347.3	0.1104 138.8 138.8	1.7169 [2.0000]	85.8%			
PFUnA	(563.0 / 519.0) 338756 (563.0 / 169.0) 34827	(9.72, 1.00) (0.00, N/A, 0.0)	614.7 373.7	0.1028 91.8 91.8	2.1196 [2.0000]	106.0%			
PFDoA	(613.0 / 569.0) 396052 (613.0 / 169.0) 57414	(9.90, 1.00) (0.00, N/A, 0.4)	459.3 243.9	0.1450 115.4 115.4	2.0590 [2.0000]	102.9%			
PFTrDA	(663.0 / 619.0) 328703 (663.0 / 169.0) 72666	(10.02, 1.01) (N/A, 0.00, 0.1)	448.8 412.2	0.2211 105.8 105.8	2.0707 [2.0000]	103.5%			
PFTeDA	(713.0 / 669.0) 282000 (713.0 / 169.0) 44360	(10.12, 1.00) (0.00, N/A, -0.2)	672.9 246.1	0.1573 69.3 69.3	1.7770 [2.0000]	88.9%			

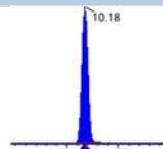
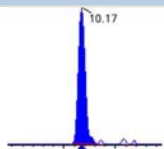
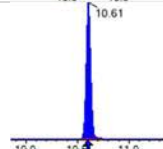
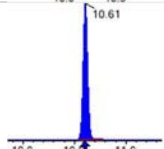
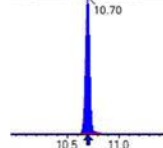
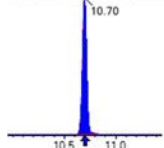
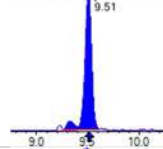
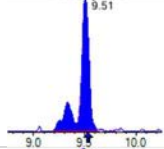
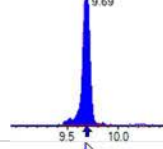
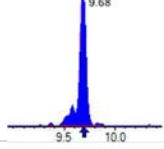
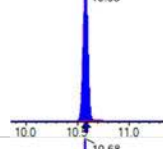
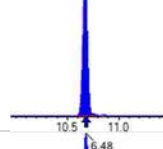
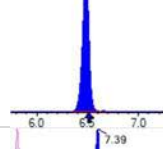
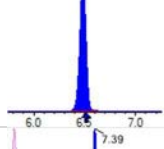
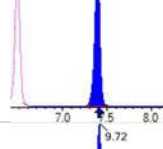
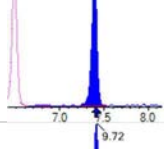
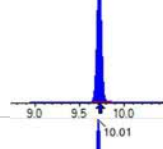
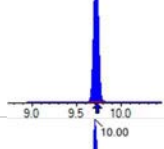
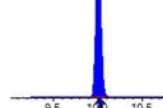
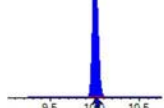


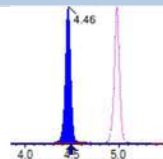
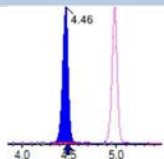
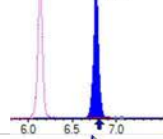
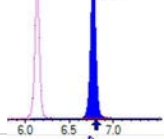
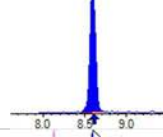
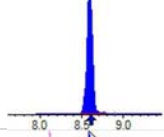
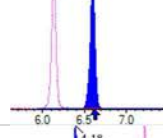
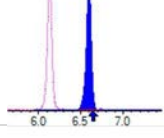
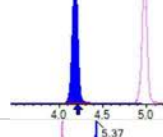
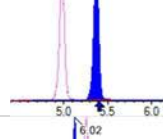
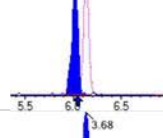
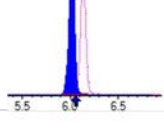
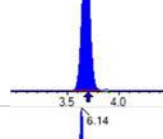
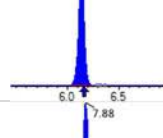
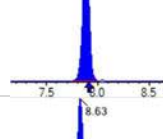
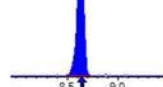
Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

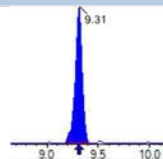
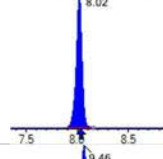
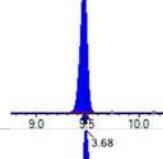
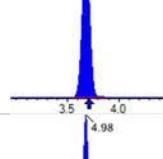
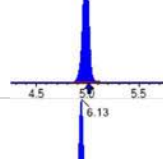
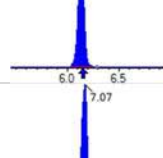
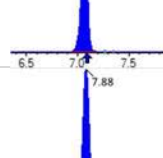
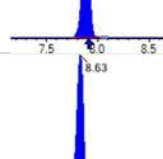
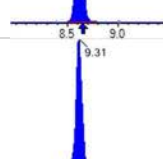
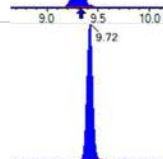

Sample I.D.: SB03856-SCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-15A
 Path: S2022-12-15A (10)
 Acquired: 2022/12/15 - 14:28

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(298.9 / 80.0) 383094 (298.9 / 99.0) 230885	(6.10 , 1.00) (0.00 , N/A , 0.0)	1143.7 681.8	0.6027 88.6 88.6	1.6715 [1.7695]	94.5%			
PFPeS	(349.0 / 80.0) 711562 (349.0 / 99.0) 257400	(7.14 , 0.89) (N/A , -0.02 , -0.1)	901.4 718.3	0.3617 96.9 96.9	1.7932 [1.8768]	95.5%			
PFHxS	(399.0 / 80.0) 560373 (399.0 / 99.0) 190166	(8.02 , 1.00) (0.00 , N/A , 0.4)	3864.8 8095.6	0.3394 99.0 99.0	1.6658 [1.8220]	91.4%			
PFHpS	(449.0 / 80.0) 521331 (449.0 / 99.0) 137216	(8.79 , 0.93) (N/A , -0.02 , 0.1)	550.7 339.3	0.2632 89.7 89.7	1.7642 [1.9028]	92.7%			
PFOS	(499.0 / 80.0) 592867 (499.0 / 99.0) 144768	(9.46 , 1.00) (0.00 , N/A , 0.0)	113.1 153.6	0.2442 106.8 106.8	1.6183 [1.8550]	87.2%			
PFNS	(549.0 / 80.0) 878938 (549.0 / 99.0) 243545	(9.77 , 1.03) (N/A , 0.00 , 0.0)	771.5 552.6	0.2771 111.0 111.0	2.0864 [1.9198]	108.7%			
PFDS	(599.0 / 80.0) 983659 (599.0 / 99.0) 219204	(9.91 , 1.05) (N/A , 0.00 , -0.1)	917.3 498.8	0.2228 87.4 87.4	1.8923 [1.9262]	98.2%			
PFDoS	(698.9 / 80.0) 527876 (698.9 / 99.0) 142206	(10.11 , 1.07) (N/A , 0.00 , 0.0)	688.0 492.6	0.2694 131.1 131.1	1.9455 [1.9391]	100.3%			
4:2FTS	(327.0 / 307.0) 523943 (327.0 / 81.0) 307103	(5.80 , 1.00) (0.00 , N/A , -0.3)	773.1 769.4	0.5861 117.2 117.2	6.9435 [7.4762]	92.9%			
6:2FTS	(427.0 / 407.0) 319439 (427.0 / 81.0) 236186	(7.54 , 1.00) (0.00 , N/A , 0.4)	772.8 539.7	0.7394 103.2 103.2	7.4815 [7.5923]	98.5%			
8:2FTS	(527.0 / 507.0) 281651 (527.0 / 81.0) 195401	(8.96 , 1.00) (0.00 , N/A , 0.0)	410.9 335.4	0.6938 98.6 98.6	8.6205 [7.6663]	112.4%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 900097 (498.0 / 478.0) 20099	(10.18 , 1.00) (0.00 , N/A , 0.2)	629.5 164.2	0.0223 94.5 94.5	1.8061 [2.0000]	90.3%			
NMeFOSA	(511.9 / 219.0) 790105 (511.9 / 169.0) 495567	(10.61 , 1.00) (0.00 , N/A , 0.0)	1198.6 965.2	0.6272 90.0 90.0	7.9490 [8.0000]	99.4%			
NEIFOSA	(526.0 / 219.0) 838886 (526.0 / 169.0) 866754	(10.70 , 1.00) (0.00 , N/A , 0.1)	1089.2 756.0	1.0332 91.7 91.7	7.3594 [8.0000]	92.0%			
NMeFOSAA	(570.0 / 419.0) 139191 (570.0 / 483.0) 65677	(9.51 , 1.00) (0.00 , N/A , -0.1)	131.5 225.9	0.4718 100.5 100.5	2.5335 [2.0000]	126.7%			
NEIFOSAA	(584.0 / 419.0) 135998 (584.0 / 526.0) 79600	(9.69 , 1.00) (0.01 , N/A , 0.2)	447.7 1284480.7	0.5853 76.0 76.0	2.0928 [2.0000]	104.6%			
NMeFOSE	(616.1 / 59.0) 226373	(10.58 , 1.00) (0.01 , N/A , 0.0)	685.9	N/A 0.0 0.0	7.3307 [8.0000]	91.6%			
NEtFOSE	(630.0 / 59.0) 60757	(10.68 , 1.00) (0.01 , N/A , 0.0)	857.3	N/A 0.0 0.0	7.5190 [8.0000]	94.0%			
HFPO-DA	(285.0 / 169.0) 217120 (285.0 / 185.0) 661671	(6.48 , 1.00) (0.00 , N/A , 0.0)	711.4 1261.6	3.0475 119.5 119.5	3.4537 [4.0000]	86.3%			
ADONA	(377.0 / 85.0) 944805 (377.0 / 251.0) 113587	(7.39 , 1.14) (N/A , -0.02 , -0.1)	894.2 338.3	0.1202 95.9 95.9	3.6253 [3.7708]	96.1%			
9CI-Pf3ONS	(531.0 / 351.0) 2822359 (533.0 / 353.0) 926029	(9.72 , 1.50) (N/A , 0.00 , 0.0)	793.6 992.0	0.3281 103.6 103.6	3.8189 [3.7330]	102.3%			
11CI-PF3OUDS	(631.0 / 451.0) 1911812 (633.0 / 453.0) 644388	(10.01 , 1.54) (N/A , 0.00 , 0.2)	934.0 668.4	0.3371 115.2 115.2	3.9258 [3.7728]	104.1%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 28936 (241.0 / 117.0) 48469	(4.46, 0.90) (N/A, -0.03, -0.1)	620.6 500.5	1.6750 0.1 101.2	7.5106 [8.0000]	93.9%			IR1,
5:3FTCA	(341.0 / 236.7) 214375 (341.0 / 217.0) 365909	(6.77, 1.10) (N/A, -0.03, 0.1)	440.6 640.7	1.7069 108.0 108.0	6.8413 [8.0000]	85.5%			
7:3FTCA	(441.0 / 317.0) 250535 (441.0 / 337.0) 198792	(8.59, 1.40) (N/A, -0.02, 0.0)	305.9 449.5	0.7935 97.6 97.6	7.0846 [8.0000]	88.6%			
PFEESA	(315.0 / 135.0) 497564 (315.0 / 83.0) 153458	(6.60, 1.08) (N/A, -0.03, 0.0)	859.2 634.5	0.3084 109.1 109.1	3.1485 [3.5698]	88.2%			
PFMPA	(229.0 / 85.0) 87603	(4.18, 0.84) (N/A, -0.03, 0.0)	885.8	N/A 0.0 0.0	3.6132 [4.0000]	90.3%			
PFMBA	(279.0 / 85.0) 307173	(5.37, 1.08) (N/A, -0.03, 0.0)	995.4	N/A 0.0 0.0	3.8810 [4.0000]	97.0%			
NFDHA	(201.0 / 85.0) 11374 (295.0 / 201.0) 84927	(6.02, 0.98) (N/A, -0.02, 0.1)	221.0 586.5	7.4668 0.9 90.6	3.6359 [4.0000]	90.9%			IR1,
13C3_PFBa_IIS	(216.0 / 172.0) 78497	(3.68, N/A) (N/A, -0.03, N/A)	917.8	N/A	0.8978 [1.0000]	89.8% { 85.1% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 131635	(6.14, N/A) (N/A, -0.03, N/A)	393.0	N/A	1.0005 [1.0000]	100.0% { 104.6% }			
13C4_PFOA_IIS	(417.0 / 372.0) 120005	(7.88, N/A) (N/A, -0.02, N/A)	715.8	N/A	0.9587 [1.0000]	95.9% { 94.3% }			
13C5_PFNAl_IIS	(468.0 / 423.0) 92103	(8.63, N/A) (N/A, -0.01, N/A)	401.4	N/A	0.9227 [1.0000]	92.3% { 83.8% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(515.1 / 470.1) 94070	(9.31, N/A) (N/A, -0.01, N/A)	400.7	N/A	0.9071 [1.0000]	90.7% { 95.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 230548	(8.02, N/A) (N/A, -0.02, N/A)	724.1	N/A	0.9745 [1.0000]	97.4% { 91.2% }			
13C4_PFOS_IIS	(502.8 / 79.9) 172200	(9.46, N/A) (N/A, -0.01, N/A)	423.7	N/A	0.8583 [1.0000]	85.8% { 78.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 759298	(3.68, N/A) (N/A, -0.03, N/A)	962.5	N/A	9.3430 [8.0000]	116.8% { 104.7% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 396871	(4.98, N/A) (N/A, -0.03, N/A)	925.9	N/A	4.0952 [4.0000]	102.4% { 105.2% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 339237	(6.13, N/A) (N/A, -0.03, N/A)	788.2	N/A	2.1892 [2.0000]	109.5% { 111.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 288817	(7.07, N/A) (N/A, -0.03, N/A)	717.3	N/A	2.1096 [2.0000]	105.5% { 105.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 277862	(7.88, N/A) (N/A, -0.02, N/A)	461.2	N/A	2.0954 [2.0000]	104.8% { 109.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 111568	(8.63, N/A) (N/A, -0.02, N/A)	379.1	N/A	1.1090 [1.0000]	110.9% { 106.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 150163	(9.31, N/A) (N/A, -0.02, N/A)	453.7	N/A	1.1780 [1.0000]	117.8% { 105.3% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 214447	(9.72, N/A) (N/A, 0.00, N/A)	313.2	N/A	1.1684 [1.0000]	116.8% { 114.6% }			

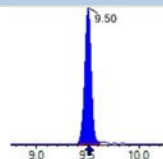
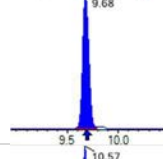
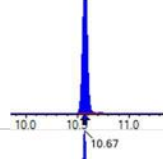
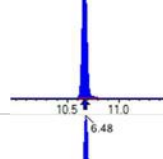
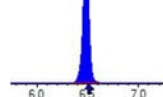


Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03856-SCV1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-15A
 Path: S2022-12-15A (10)
 Acquired: 2022/12/15 - 14:28

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
13C2_PFDa_EIS	(615.0 / 570.0) 240138	(9.90, N/A) (N/A, 0.00, N/A)	469.9	N/A	1.1602 [1.0000]	116.0% { 111.3% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 165812	(10.13, N/A) (N/A, 0.00, N/A)	438.8	N/A	1.3181 [1.0000]	131.8% { 137.1% }			
13C3_PFBs_EIS	(302.0 / 80.0) 839167	(6.09, N/A) (N/A, -0.03, N/A)	803.0	N/A	2.2287 [2.0000]	111.4% { 110.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 423038	(8.02, N/A) (N/A, -0.02, N/A)	945.7	N/A	2.1664 [2.0000]	108.3% { 109.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 666640	(9.46, N/A) (N/A, -0.01, N/A)	385.6	N/A	2.3567 [2.0000]	117.8% { 99.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 94644	(5.80, N/A) (N/A, -0.03, N/A)	613.8	N/A	4.4577 [4.0000]	111.4% { 107.3% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 110613	(7.54, N/A) (N/A, -0.02, N/A)	792.5	N/A	4.0653 [4.0000]	101.6% { 103.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 89162	(8.96, N/A) (N/A, -0.02, N/A)	319.2	N/A	3.6552 [4.0000]	91.4% { 94.4% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 1001427	(10.17, N/A) (N/A, 0.00, N/A)	701.0	N/A	2.4326 [2.0000]	121.6% { 102.9% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 249162	(10.61, N/A) (N/A, 0.00, N/A)	1282.0	N/A	2.4295 [2.0000]	121.5% { 103.8% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 250001	(10.70, N/A) (N/A, 0.00, N/A)	1064.9	N/A	2.6105 [2.0000]	130.5% { 108.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ 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) 303229	(9.50 , N/A) (N/A , -0.01 , N/A)	346.8	N/A	4.5699 [4.0000]	114.2% { 106.4% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 288361	(9.68 , N/A) (N/A , -0.01 , N/A)	414.5	N/A	5.2290 [4.0000]	130.7% { 112.6% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 485026	(10.57 , N/A) (N/A , 0.00 , N/A)	905.0	N/A	24.5859 [20.0000]	122.9% { 96.8% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 253167	(10.67 , N/A) (N/A , 0.00 , N/A)	990.4	N/A	23.8312 [20.0000]	119.2% { 95.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 823081	(6.48 , N/A) (N/A , -0.03 , N/A)	981.0	N/A	8.7238 [8.0000]	109.0% { 110.7% }			

LOW-CONCENTRATION CALIBRATION VERIFICATION

EPA 1633

Laboratory: APPL, LLC

SDG:

Client: AECOM

Project: Red Hill AFFF Assessment Sampling

Calibration: 2251019

Laboratory ID: SB03903-LCV1

Sequence: SB03903

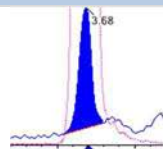
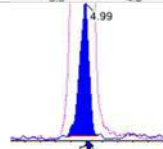
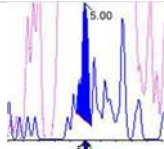
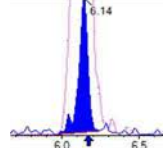
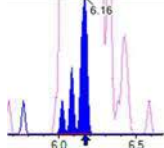
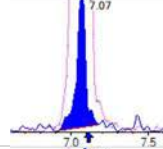
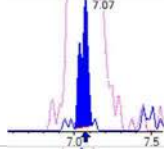
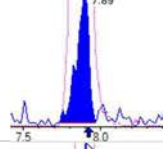
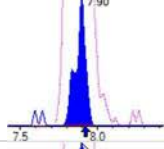
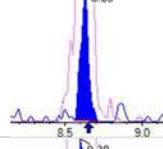
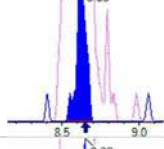
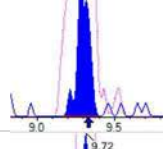
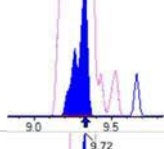
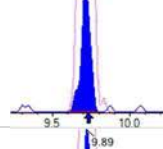
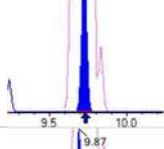
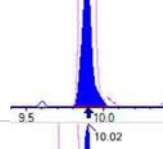
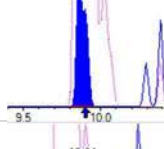
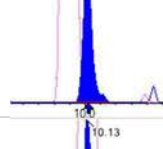
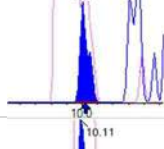
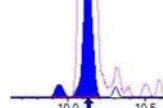
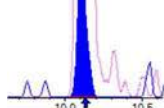
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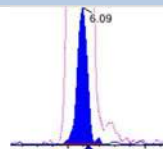
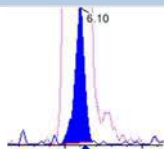
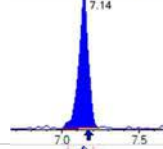
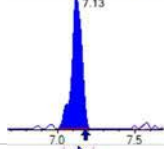
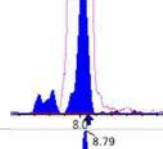
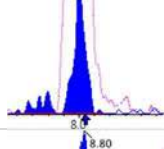
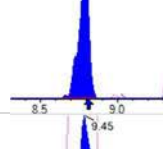
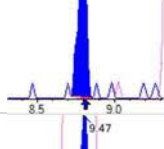
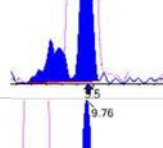
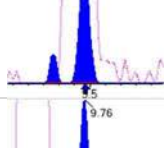
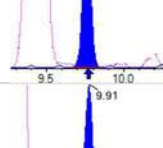
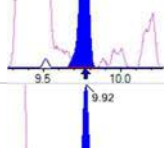
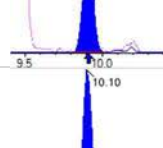

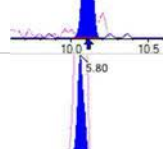
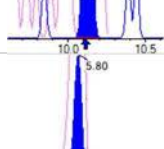
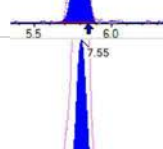
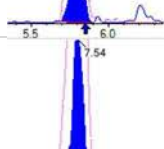
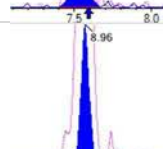
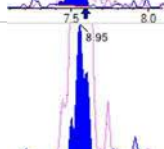

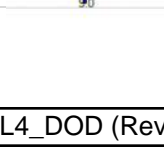
ANALYTE	EXPECTED (ng/mL)	FOUND (ng/mL)	% DRIFT	QC LIMIT
PFBA	0.400	0.409	2.2	30.00
PFPEA	0.200	0.186	-7.2	30.00
PFHXA	0.100	0.116	16.2	30.00
PFHPA	0.100	0.128	27.8	30.00
PFOA	0.100	0.108	7.8	30.00
PFNA	0.100	0.115	14.6	30.00
PFDA	0.100	0.0719	-28.1	30.00
PFUnA	0.100	0.0814	-18.6	30.00
PFDOA	0.100	0.169	69.2 *	30.00
PFTRDA	0.100	0.0797	-20.3	30.00
PFTEDA	0.100	0.0709	-29.1	30.00
PFBS	0.0885	0.0935	5.7	30.00
PFPEs	0.0940	0.0886	-5.7	30.00
PFHXS	0.0915	0.0893	-2.4	30.00
PFHPS	0.0955	0.0920	-3.7	30.00
PFOS	0.0930	0.0940	1.0	30.00
PFNS	0.0960	0.0926	-3.6	30.00
PFDS	0.0965	0.0922	-4.5	30.00
PFDOS	0.0970	0.0750	-22.6	30.00
4:2FTS	0.375	0.363	-3.1	30.00
6:2FTS	0.380	0.412	8.5	30.00
8:2FTS	0.384	0.363	-5.4	30.00
PFOSA	0.100	0.0839	-16.1	30.00
NMeFOSA	0.400	0.368	-8.0	30.00
NEtFOSA	0.400	0.431	7.9	30.00
NMeFOSAA	0.100	0.0768	-23.2	30.00
NEtFOSAA	0.100	0.124	23.6	30.00
NMeFOSE	0.400	0.505	26.3	30.00

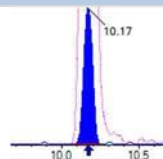
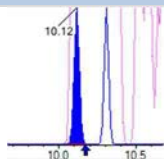
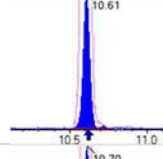
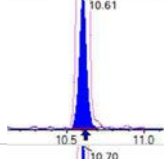
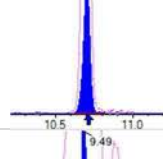
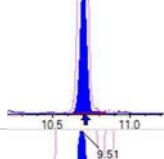
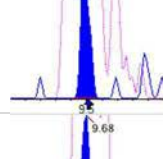
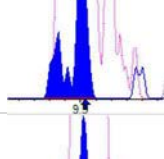
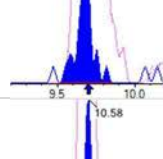
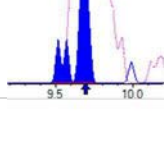
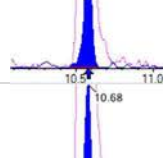
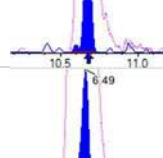
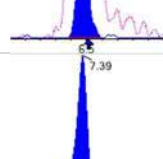
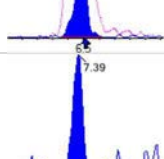
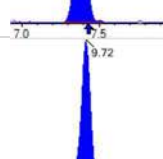
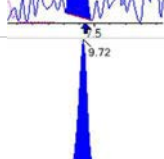
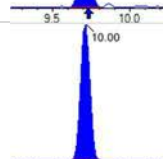
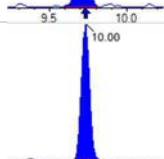

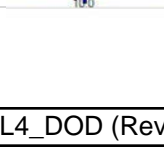
LOW-CONCENTRATION CALIBRATION VERIFICATION**EPA 1633****Laboratory:** APPL, LLC**SDG:****Client:** AECOM**Project:** Red Hill AFFF Assessment Sampling**Calibration:** 2251019**Laboratory ID:** SB03903-LCV1**Sequence:** SB03903**Standard ID:** 22L0300

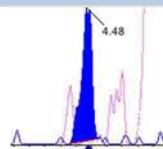
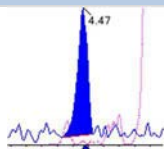
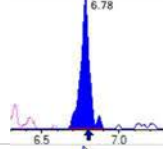
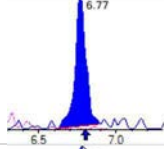
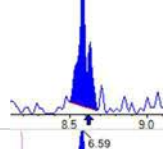
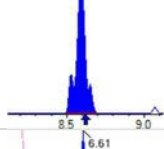
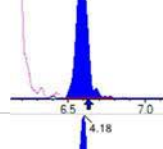
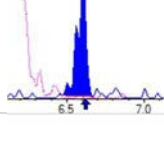
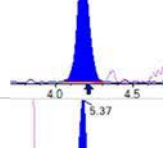
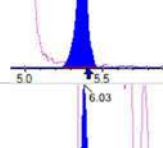
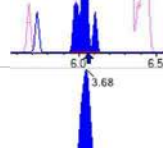
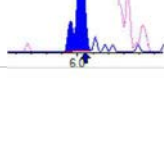
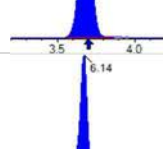
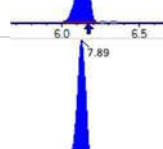
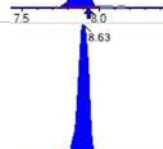

NEFOSE	0.400	0.504	26.1	30.00
HFPO-DA	0.200	0.201	0.3	30.00
ADONA	0.189	0.196	3.6	30.00
PFEESA	0.178	0.198	11.1	30.00
PFMPA	0.200	0.216	8.0	30.00
PFMBA	0.200	0.207	3.4	30.00
NFDHA	0.200	0.143	-28.7	30.00
9CL-PF3ONS	0.187	0.164	-12.5	30.00
11CL-PF3OUDS	0.189	0.168	-11.1	30.00
3:3FTCA	0.400	0.283	-29.2	30.00
5:3FTCA	0.400	0.336	-16.0	30.00
7:3FTCA	0.400	0.371	-7.3	30.00

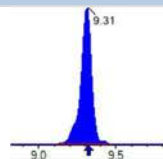
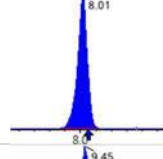
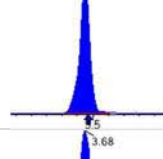
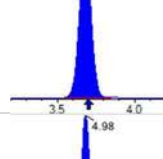
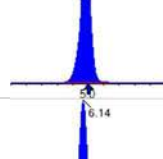
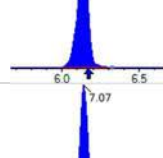
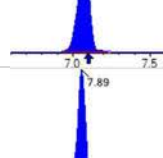
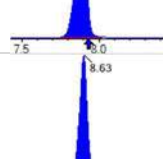
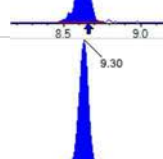
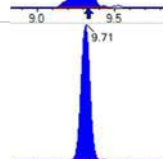
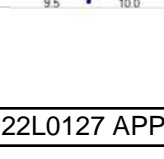
* Values outside of QC limits

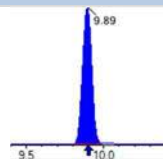
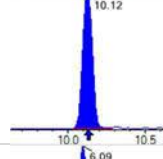
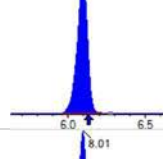
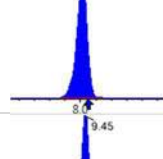
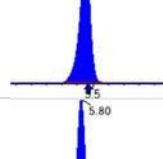
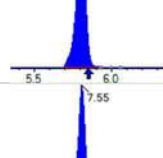
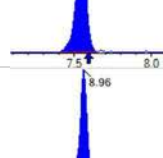
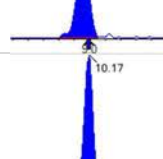
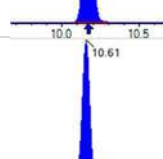
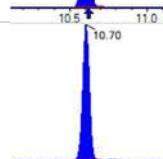

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 19382	(3.68, 1.00) (0.00, N/A, 0.0)	34.4	N/A 0.0 0.0	0.4087 [0.4000]	102.2%			
PFPeA	(262.9 / 219.0) 13644 (262.9 / 69.0) 187	(4.99, 1.00) (0.00, N/A, -0.8)	127.6 10.7	0.0137 16083.0 112.9	0.1857 [0.2000]	92.8%			
PFHxA	(313.0 / 269.0) 12692 (313.0 / 119.0) 849	(6.14, 1.00) (0.01, N/A, -1.3)	72.6 155.5	0.0669 68.2 70.4	0.1162 [0.1000]	116.2%			
PFHpA	(363.0 / 319.0) 12337 (363.0 / 169.0) 2184	(7.07, 1.00) (0.00, N/A, 0.0)	55.6 40.2	0.1770 56.6 61.3	0.1278 [0.1000]	127.8%			
PFOA	(413.0 / 369.0) 11278 (413.0 / 169.0) 4016	(7.89, 1.00) (0.01, N/A, -0.3)	45.3 122.5	0.3561 105.7 109.1	0.1078 [0.1000]	107.8%			
PFNA	(463.0 / 419.0) 7908 (463.0 / 169.0) 2242	(8.63, 1.00) (0.00, N/A, 0.1)	61.5 25.8	0.2835 141.3 124.3	0.1146 [0.1000]	114.6%			
PFDA	(513.0 / 469.0) 7227 (513.0 / 169.0) 3728	(9.30, 1.00) (0.00, N/A, -1.5)	30.9 107.2	0.5158 648.3 555.0	0.0719 [0.1000]	71.9%			IR2,
PFUnA	(563.0 / 519.0) 10582 (563.0 / 169.0) 1326	(9.72, 1.00) (0.00, N/A, -0.5)	96.1 54.8	0.1253 111.9 109.1	0.0814 [0.1000]	81.4%			
PFDoA	(613.0 / 569.0) 22860 (613.0 / 169.0) 1675	(9.89, 1.00) (0.00, N/A, 1.1)	127.4 35.5	0.0733 58.4 55.1	0.1692 [0.1000]	169.2%			QC,
PFTrDA	(663.0 / 619.0) 8891 (663.0 / 169.0) 953	(10.02, 1.01) (N/A, -0.01, 0.6)	65.9 6.9	0.1072 51.3 59.5	0.0797 [0.1000]	79.7%			
PFTeDA	(713.0 / 669.0) 7222 (713.0 / 169.0) 4436	(10.13, 1.00) (0.00, N/A, 1.2)	346.9 33.3	0.6142 270.6 289.1	0.0709 [0.1000]	70.9%			IR2,

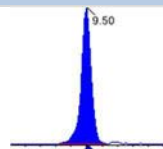
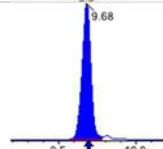
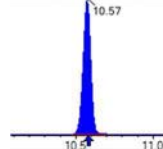
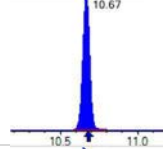
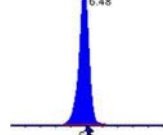
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 16059 (298.9 / 99.0) 10148	(6.09, 1.00) (0.00, N/A, -0.3)	210.6 89.0	0.6319 92.9 96.5	0.0935 [0.0885]	105.7%			
PFPeS	(349.0 / 80.0) 28912 (349.0 / 99.0) 10555	(7.14, 0.89) (N/A, -0.03, 0.8)	220.3 123.2	0.3651 97.8 81.4	0.0886 [0.0938]	94.4%			
PFHxS	(399.0 / 80.0) 24699 (399.0 / 99.0) 10292	(8.02, 1.00) (0.00, N/A, 0.7)	39349.4 4719.9	0.4167 121.5 118.7	0.0893 [0.0911]	98.0%			
PFHpS	(449.0 / 80.0) 21186 (449.0 / 99.0) 4378	(8.79, 0.93) (N/A, -0.02, -0.4)	344.3 46.1	0.2066 70.4 76.5	0.0920 [0.0951]	96.6%			
PFOS	(499.0 / 80.0) 26843 (499.0 / 99.0) 7561	(9.45, 1.00) (0.00, N/A, -0.8)	67.3 11639.5	0.2817 123.2 124.0	0.0940 [0.0927]	101.3%			
PFNS	(549.0 / 80.0) 30403 (549.0 / 99.0) 7729	(9.76, 1.03) (N/A, -0.01, -0.2)	193.9 1407.9	0.2542 101.9 92.9	0.0926 [0.0960]	96.4%			
PFDS	(599.0 / 80.0) 37362 (599.0 / 99.0) 7934	(9.91, 1.05) (N/A, 0.00, -0.6)	194.8 73.5	0.2124 83.3 98.2	0.0922 [0.0963]	95.7%			
PFDoS	(698.9 / 80.0) 15877 (698.9 / 99.0) 1264	(10.10, 1.07) (N/A, -0.01, -1.5)	222.3 11.5	0.0796 38.8 35.1	0.0750 [0.0970]	77.4%			IR1,
4:2FTS	(327.0 / 307.0) 22908 (327.0 / 81.0) 13728	(5.80, 1.00) (0.00, N/A, -0.1)	298.8 107.3	0.5993 119.9 107.9	0.3633 [0.3738]	97.2%			
6:2FTS	(427.0 / 407.0) 15591 (427.0 / 81.0) 9970	(7.55, 1.00) (0.00, N/A, 0.1)	128.9 68.4	0.6394 89.3 96.7	0.4124 [0.3796]	108.6%			
8:2FTS	(527.0 / 507.0) 10977 (527.0 / 81.0) 7088	(8.96, 1.00) (0.00, N/A, 0.4)	7232.8 68.3	0.6458 91.8 108.9	0.3634 [0.3833]	94.8%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 32849 (498.0 / 478.0) 317	(10.17, 1.00) (0.00, N/A, 3.3)	353.0 45889.7	0.0097 40.9 47.8	0.0839 [0.1000]	83.9%			
NMeFOSA	(511.9 / 219.0) 29155 (511.9 / 169.0) 22552	(10.61, 1.00) (0.00, N/A, 0.2)	292.5 335.4	0.7735 110.9 110.0	0.3680 [0.4000]	92.0%			
NEIFOSA	(526.0 / 219.0) 32586 (526.0 / 169.0) 33953	(10.70, 1.00) (0.00, N/A, 0.2)	555.3 335.7	1.0420 92.5 98.6	0.4314 [0.4000]	107.9%			
NMeFOSAA	(570.0 / 419.0) 3319 (570.0 / 483.0) 4145	(9.49, 1.00) (-0.01, N/A, -1.3)	511.9 30.9	1.2487 265.9 274.9	0.0768 [0.1000]	76.8%			IR2.
NEIFOSAA	(584.0 / 419.0) 6054 (584.0 / 526.0) 4271	(9.68, 1.00) (0.00, N/A, 0.0)	70.4 242.8	0.7054 91.6 137.2	0.1236 [0.1000]	123.6%			
NMeFOSE	(616.1 / 59.0) 11695	(10.58, 1.00) (0.01, N/A, 0.0)	157.0	N/A 0.0 0.0	0.5053 [0.4000]	126.3%			
NEtFOSE	(630.0 / 59.0) 2982	(10.68, 1.00) (0.01, N/A, 0.0)	93.7	N/A 0.0 0.0	0.5042 [0.4000]	126.1%			
HFPO-DA	(285.0 / 169.0) 9931 (285.0 / 185.0) 30743	(6.49, 1.00) (0.01, N/A, 0.4)	189.3 215.2	3.0958 121.4 110.8	0.2007 [0.2000]	100.3%			
ADONA	(377.0 / 85.0) 40163 (377.0 / 251.0) 4089	(7.39, 1.14) (N/A, -0.05, 0.0)	456.0 15.7	0.1018 81.2 86.2	0.1958 [0.1885]	103.8%			
9CI-Pf3ONS	(531.0 / 351.0) 95209 (533.0 / 353.0) 42146	(9.72, 1.50) (N/A, -0.01, 0.0)	302.5 146.5	0.4427 139.8 149.4	0.1637 [0.1867]	87.7%			
11CI-PF3OUDS	(631.0 / 451.0) 64396 (633.0 / 453.0) 25320	(10.00, 1.54) (N/A, -0.01, -0.1)	175.7 6533.6	0.3932 134.4 122.4	0.1680 [0.1886]	89.1%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 892 (241.0 / 117.0) 1985	(4.48, 0.90) (N/A, -0.01, 0.6)	42.8 36.8	2.2239 0.2 127.7	0.2831 [0.4000]	70.8%			IR1,
5:3FTCA	(341.0 / 236.7) 7477 (341.0 / 217.0) 14750	(6.78, 1.10) (N/A, -0.02, 0.7)	123.0 57.5	1.9728 124.9 124.4	0.3362 [0.4000]	84.0%			
7:3FTCA	(441.0 / 317.0) 9303 (441.0 / 337.0) 9096	(8.58, 1.40) (N/A, -0.04, -0.6)	31.4 841.0	0.9777 120.2 113.3	0.3706 [0.4000]	92.7%			
PFEESA	(315.0 / 135.0) 22187 (315.0 / 83.0) 6152	(6.59, 1.07) (N/A, -0.04, -1.0)	258.4 69.7	0.2773 98.1 104.1	0.1978 [0.1785]	110.8%			
PFMPA	(229.0 / 85.0) 4283	(4.18, 0.84) (N/A, -0.03, 0.0)	162.8	N/A 0.0 0.0	0.2159 [0.2000]	108.0%			
PFMBA	(279.0 / 85.0) 13397	(5.37, 1.08) (N/A, -0.03, 0.0)	389.8	N/A 0.0 0.0	0.2069 [0.2000]	103.4%			
NFDHA	(201.0 / 85.0) 557 (295.0 / 201.0) 2635	(6.03, 0.98) (N/A, -0.02, 0.8)	40.1 78.1	4.7312 0.6 69.9	0.1426 [0.2000]	71.3%			IR1,
13C3_PFBA_IIS	(216.0 / 172.0) 66335	(3.68, N/A) (N/A, -0.02, N/A)	587.2	N/A	0.7587 [1.0000]	75.9% {92.4%}			
13C2_PFHxA_IIS	(315.1 / 270.0) 104628	(6.14, N/A) (N/A, -0.03, N/A)	536.2	N/A	0.7952 [1.0000]	79.5% {89.5%}			
13C4_PFOA_IIS	(417.0 / 372.0) 105564	(7.89, N/A) (N/A, -0.04, N/A)	460.3	N/A	0.8434 [1.0000]	84.3% {104.6%}			
13C5_PFNA_IIS	(468.0 / 423.0) 78654	(8.63, N/A) (N/A, -0.02, N/A)	258.6	N/A	0.7880 [1.0000]	78.8% {81.0%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(515.1 / 470.1) 78021	(9.31, N/A) (N/A, -0.01, N/A)	258.6	N/A	0.7524 [1.0000]	75.2% { 113.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 184080	(8.01, N/A) (N/A, -0.04, N/A)	656.7	N/A	0.7781 [1.0000]	77.8% { 87.2% }			
13C4_PFOS_IIS	(502.8 / 79.9) 137334	(9.45, N/A) (N/A, -0.02, N/A)	273.1	N/A	0.6845 [1.0000]	68.5% { 86.3% }			
13C4_PFBA_EIS	(217.0 / 172.0) 571163	(3.68, N/A) (N/A, -0.02, N/A)	749.3	N/A	8.3165 [8.0000]	104.0% { 100.4% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 324700	(4.98, N/A) (N/A, -0.02, N/A)	746.3	N/A	4.2153 [4.0000]	105.4% { 99.9% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 240766	(6.14, N/A) (N/A, -0.03, N/A)	600.0	N/A	1.9548 [2.0000]	97.7% { 100.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 213739	(7.07, N/A) (N/A, -0.03, N/A)	511.6	N/A	1.9642 [2.0000]	98.2% { 96.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 220691	(7.89, N/A) (N/A, -0.04, N/A)	771.0	N/A	1.8920 [2.0000]	94.6% { 96.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 81657	(8.63, N/A) (N/A, -0.03, N/A)	245.6	N/A	0.9504 [1.0000]	95.0% { 99.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 109083	(9.30, N/A) (N/A, -0.03, N/A)	293.5	N/A	1.0318 [1.0000]	103.2% { 100.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 174437	(9.71, N/A) (N/A, -0.01, N/A)	562.8	N/A	1.1459 [1.0000]	114.6% { 115.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 168648	(9.89, N/A) (N/A, 0.00, N/A)	549.8	N/A	0.9824 [1.0000]	98.2% { 92.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 106486	(10.12, N/A) (N/A, -0.01, N/A)	263.3	N/A	1.0206 [1.0000]	102.1% { 94.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 628812	(6.09, N/A) (N/A, -0.03, N/A)	627.9	N/A	2.0916 [2.0000]	104.6% { 95.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 347889	(8.01, N/A) (N/A, -0.04, N/A)	1025.2	N/A	2.2313 [2.0000]	111.6% { 101.3% }			
13C8_PFOS_EIS	(507.0 / 80.0) 519785	(9.45, N/A) (N/A, -0.01, N/A)	424.9	N/A	2.3041 [2.0000]	115.2% { 94.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 79089	(5.80, N/A) (N/A, -0.04, N/A)	580.9	N/A	4.6654 [4.0000]	116.6% { 93.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 97941	(7.55, N/A) (N/A, -0.04, N/A)	431.0	N/A	4.5082 [4.0000]	112.7% { 110.1% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 82421	(8.96, N/A) (N/A, -0.03, N/A)	348.6	N/A	4.2318 [4.0000]	105.8% { 93.7% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 786574	(10.17, N/A) (N/A, 0.00, N/A)	740.9	N/A	2.3958 [2.0000]	119.8% { 94.3% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 198605	(10.61, N/A) (N/A, -0.01, N/A)	964.8	N/A	2.4281 [2.0000]	121.4% { 97.4% }			
D5_NEtFOsa_EIS	(531.1 / 169.0) 165654	(10.70, N/A) (N/A, -0.01, N/A)	859.1	N/A	2.1689 [2.0000]	108.4% { 89.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 238667	(9.50, N/A) (N/A, -0.01, N/A)	301.9	N/A	4.5100 [4.0000]	112.8% { 101.3% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 217292	(9.68, N/A) (N/A, -0.01, N/A)	313.6	N/A	4.9406 [4.0000]	123.5% { 97.1% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 363569	(10.57, N/A) (N/A, -0.01, N/A)	1000.4	N/A	23.1081 [20.0000]	115.5% { 106.2% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 185281	(10.67, N/A) (N/A, -0.01, N/A)	1528.1	N/A	21.8688 [20.0000]	109.3% { 93.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 647882	(6.48, N/A) (N/A, -0.03, N/A)	765.7	N/A	8.6395 [8.0000]	108.0% { 99.1% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Instrument ID: Saphira
 Standard ID: 22L0304

Work Order: 22L0127
 Project: Red Hill AFFF Assessment Sampling
 Calibration: 2251019
 Sequence: SB03903

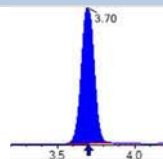
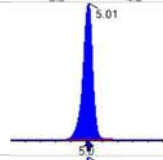
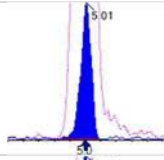
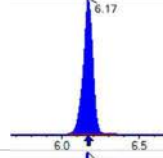
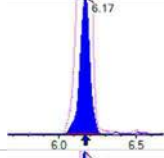
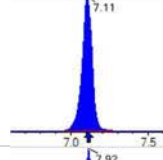
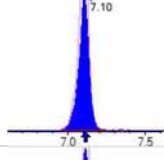
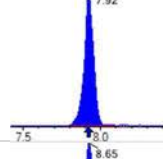
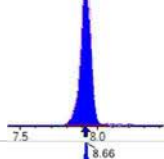
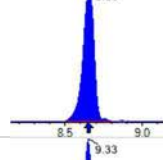
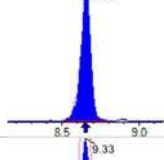
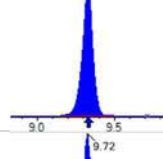
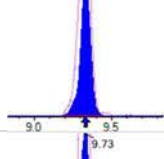
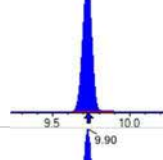
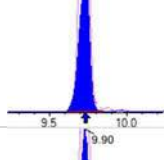
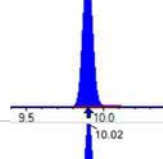
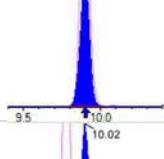
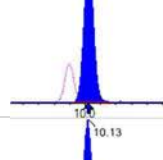
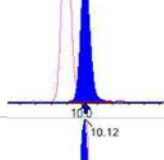
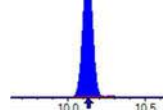
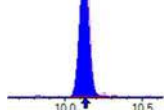
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03903-CCV1	PFBA	20.0	20.8	104	ng/mL	+/- 30.00%
	PFPEA	10.0	9.99	99.9	ng/mL	+/- 30.00%
	PFHXA	5.00	5.21	104	ng/mL	+/- 30.00%
	PFHPA	5.00	5.23	105	ng/mL	+/- 30.00%
	PFOA	5.00	5.19	104	ng/mL	+/- 30.00%
	PFNA	5.00	5.62	112	ng/mL	+/- 30.00%
	PFDA	5.00	5.63	113	ng/mL	+/- 30.00%
	PFUnA	5.00	5.13	103	ng/mL	+/- 30.00%
	PFDOA	5.00	5.27	105	ng/mL	+/- 30.00%
	PFTRDA	5.00	5.79	116	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.68	93.6	ng/mL	+/- 30.00%
	PFBS	4.42	4.73	107	ng/mL	+/- 30.00%
	PFPEs	4.70	4.14	88.2	ng/mL	+/- 30.00%
	PFHXS	4.58	4.48	97.9	ng/mL	+/- 30.00%
	PFHPS	4.78	4.60	96.3	ng/mL	+/- 30.00%
	PFOS	4.65	4.02	86.4	ng/mL	+/- 30.00%
	PFNS	4.80	4.21	87.8	ng/mL	+/- 30.00%
	PFDS	4.82	4.81	99.8	ng/mL	+/- 30.00%
	PFDOS	4.85	5.05	104	ng/mL	+/- 30.00%
	4:2FTS	18.8	17.5	92.9	ng/mL	+/- 30.00%
	6:2FTS	19.0	21.2	111	ng/mL	+/- 30.00%
	8:2FTS	19.2	19.1	99.7	ng/mL	+/- 30.00%
	PFOSA	5.00	4.49	89.8	ng/mL	+/- 30.00%
	NMeFOSA	20.0	20.3	102	ng/mL	+/- 30.00%
	NEtFOSA	20.0	21.1	105	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	5.31	106	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	5.16	103	ng/mL	+/- 30.00%
	NMeFOSE	20.0	20.8	104	ng/mL	+/- 30.00%
	NEtFOSE	20.0	21.8	109	ng/mL	+/- 30.00%
	HFPO-DA	10.0	10.1	101	ng/mL	+/- 30.00%

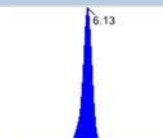
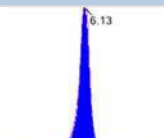
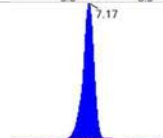
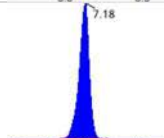
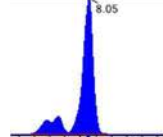
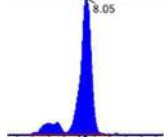
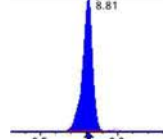
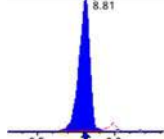
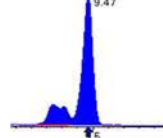
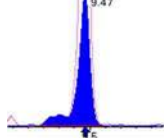
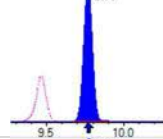
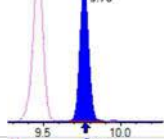
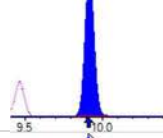
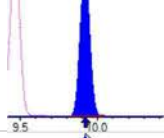
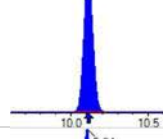
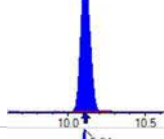
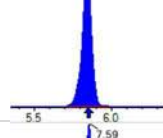
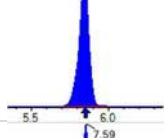
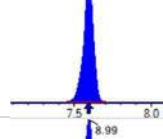
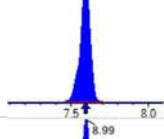
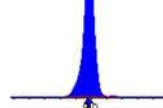
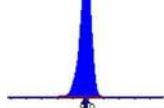
INITIAL AND CONTINUING CALIBRATION CHECK

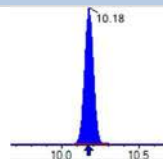
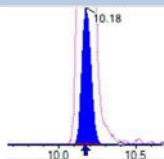
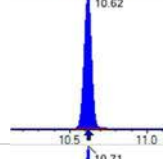
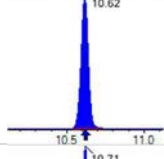
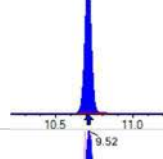
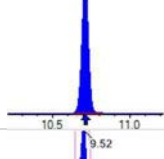
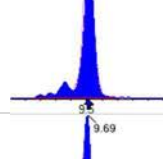
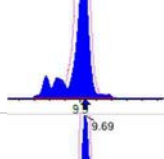
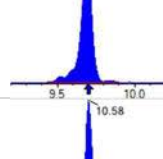
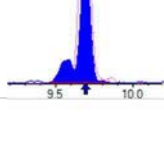
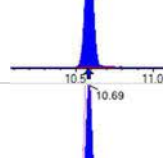
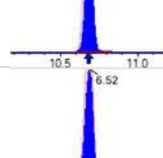
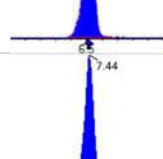
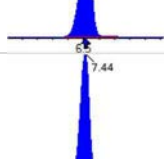
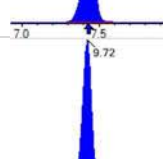
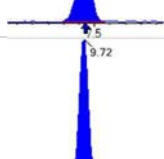
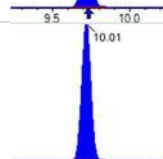
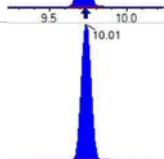

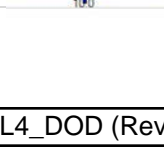
EPA 1633

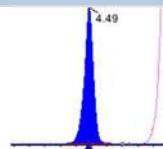
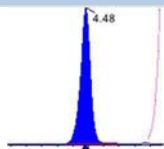
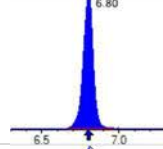
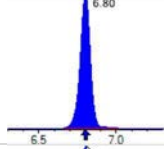
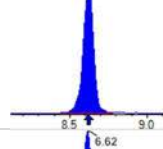
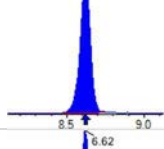
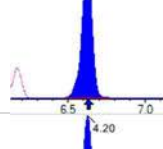
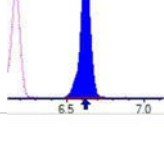
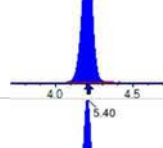
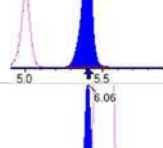
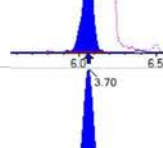
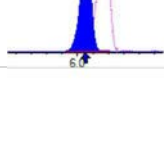
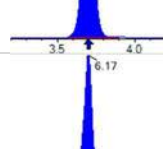
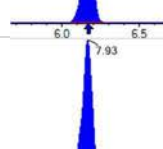
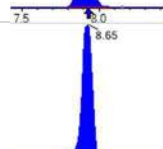

Laboratory:	APPL, LLC	Work Order:	22L0127
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2251019
Standard ID:	22L0304	Sequence:	SB03903

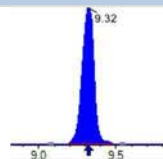
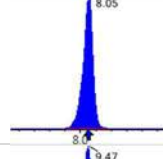
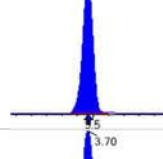
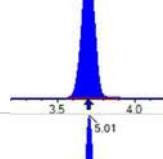
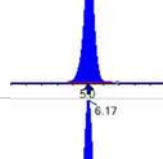
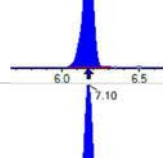
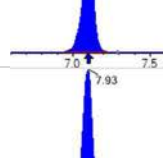
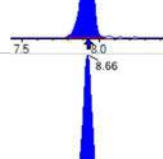
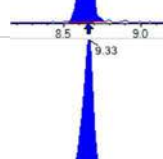
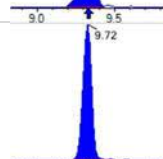
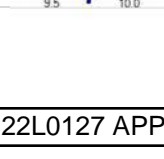
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03903-CCV1	ADONA	9.45	9.36	99.0	ng/mL	+/- 30.00%
	PFEESA	8.90	10.1	113	ng/mL	+/- 30.00%
	PFMPA	10.0	9.29	92.9	ng/mL	+/- 30.00%
	PFMBA	10.0	9.36	93.6	ng/mL	+/- 30.00%
	NFDHA	10.0	11.1	111	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	8.46	90.5	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	9.25	97.9	ng/mL	+/- 30.00%
	3:3FTCA	20.0	18.0	90.2	ng/mL	+/- 30.00%
	5:3FTCA	20.0	22.7	113	ng/mL	+/- 30.00%
	7:3FTCA	20.0	21.4	107	ng/mL	+/- 30.00%

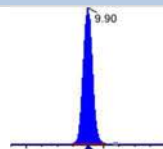
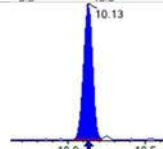
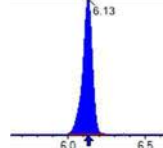
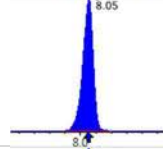
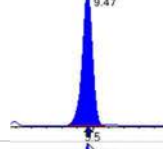
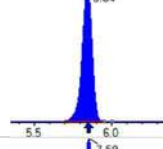
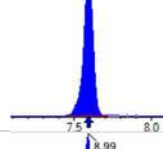
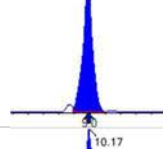
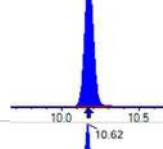
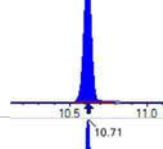
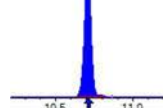
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 982450	(3.70, 1.00) (0.00, N/A, 0.0)	66.7	N/A 0.0 0.0	20.7956 [20.0000]	104.0%			
PFPeA	(262.9 / 219.0) 734523 (262.9 / 69.0) 8934	(5.01, 1.00) (0.00, N/A, 0.1)	683.9 201.8	0.0122 14251.4 100.0	9.9892 [10.0000]	99.9%			
PFHxA	(313.0 / 269.0) 563818 (313.0 / 119.0) 53564	(6.17, 1.00) (0.00, N/A, 0.1)	570.7 474.7	0.0950 96.8 100.0	5.2073 [5.0000]	104.1%			
PFHpA	(363.0 / 319.0) 521904 (363.0 / 169.0) 150708	(7.11, 1.00) (0.00, N/A, 0.1)	525.9 623.9	0.2888 92.4 100.0	5.2272 [5.0000]	104.5%			
PFOA	(413.0 / 369.0) 565015 (413.0 / 169.0) 184413	(7.92, 1.00) (0.00, N/A, 0.0)	638.4 569.0	0.3264 96.9 100.0	5.1902 [5.0000]	103.8%			
PFNA	(463.0 / 419.0) 389924 (463.0 / 169.0) 88902	(8.65, 1.00) (0.00, N/A, 0.0)	406.3 109.3	0.2280 113.6 100.0	5.6220 [5.0000]	112.4%			
PFDA	(513.0 / 469.0) 560685 (513.0 / 169.0) 52112	(9.33, 1.00) (0.00, N/A, -0.3)	387.2 691.6	0.0929 116.8 100.0	5.6260 [5.0000]	112.5%			
PFUnA	(563.0 / 519.0) 580060 (563.0 / 169.0) 66661	(9.72, 1.00) (0.00, N/A, -0.2)	610.5 240.2	0.1149 102.6 100.0	5.1322 [5.0000]	102.6%			
PFDoA	(613.0 / 569.0) 768398 (613.0 / 169.0) 102141	(9.90, 1.00) (0.00, N/A, -0.2)	577.5 590.6	0.1329 105.8 100.0	5.2660 [5.0000]	105.3%			
PFTrDA	(663.0 / 619.0) 697092 (663.0 / 169.0) 125580	(10.02, 1.01) (N/A, 0.00, 0.3)	723.6 368.0	0.1801 86.2 100.0	5.7890 [5.0000]	115.8%			
PFTeDA	(713.0 / 669.0) 504829 (713.0 / 169.0) 107258	(10.13, 1.00) (0.00, N/A, 0.2)	829.9 406.7	0.2125 93.6 100.0	4.6825 [5.0000]	93.6%			

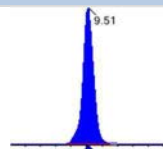
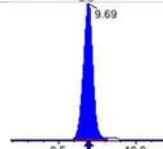
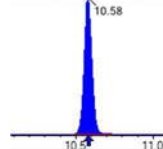
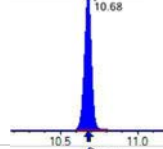
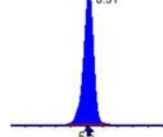
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 854996 (298.9 / 99.0) 560084	(6.13, 1.00) (0.00, N/A, 0.0)	648.3 942.9	0.6551 96.3 100.0	4.7307 [4.4237]	106.9%			
PFPeS	(349.0 / 80.0) 1335185 (349.0 / 99.0) 598653	(7.17, 0.89) (N/A, 0.00, -0.1)	661.8 740.2	0.4484 120.1 100.0	4.1434 [4.6919]	88.3%			
PFHxS	(399.0 / 80.0) 1224400 (399.0 / 99.0) 429904	(8.05, 1.00) (0.00, N/A, 0.2)	3058.4 78575.1	0.3511 102.4 100.0	4.4820 [4.5549]	98.4%			
PFHpS	(449.0 / 80.0) 1122449 (449.0 / 99.0) 303353	(8.81, 0.93) (N/A, 0.00, 0.0)	854.2 392.3	0.2703 92.1 100.0	4.6044 [4.7570]	96.8%			
PFOS	(499.0 / 80.0) 1214722 (499.0 / 99.0) 276006	(9.47, 1.00) (0.00, N/A, 0.1)	117.3 129.8	0.2272 99.4 100.0	4.0192 [4.6375]	86.7%			
PFNS	(549.0 / 80.0) 1464072 (549.0 / 99.0) 400843	(9.77, 1.03) (N/A, 0.00, 0.3)	903.3 487.5	0.2738 109.7 100.0	4.2128 [4.7994]	87.8%			
PFDS	(599.0 / 80.0) 2062867 (599.0 / 99.0) 445959	(9.92, 1.05) (N/A, 0.00, -0.1)	1001.1 1095.5	0.2162 84.8 100.0	4.8104 [4.8155]	99.9%			
PFDoS	(698.9 / 80.0) 1130442 (698.9 / 99.0) 256771	(10.11, 1.07) (N/A, 0.00, 0.0)	858.3 555.4	0.2271 110.6 100.0	5.0502 [4.8478]	104.2%			
4:2FTS	(327.0 / 307.0) 1173781 (327.0 / 81.0) 652041	(5.84, 1.00) (0.00, N/A, -0.1)	727.3 716.5	0.5555 111.1 100.0	17.4662 [18.6906]	93.4%			
6:2FTS	(427.0 / 407.0) 727085 (427.0 / 81.0) 480798	(7.59, 1.00) (0.00, N/A, 0.1)	824.2 885.7	0.6613 92.3 100.0	21.1813 [18.9808]	111.6%			
8:2FTS	(527.0 / 507.0) 617184 (527.0 / 81.0) 365940	(8.99, 1.00) (0.00, N/A, 0.0)	441.6 643.7	0.5929 84.3 100.0	19.1397 [19.1658]	99.9%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 1864403 (498.0 / 478.0) 37708	(10.18, 1.00) (0.00, N/A, -0.1)	1000.6 204.4	0.0202 85.6 100.0	4.4923 [5.0000]	89.8%			
NMeFOSA	(511.9 / 219.0) 1653848 (511.9 / 169.0) 1163525	(10.62, 1.00) (0.00, N/A, 0.1)	1172.9 1186.1	0.7035 100.9 100.0	20.3383 [20.0000]	101.7%			
NEIFOSA	(526.0 / 219.0) 1777342 (526.0 / 169.0) 1878083	(10.71, 1.00) (0.00, N/A, 0.0)	1401.5 1256.6	1.0567 93.8 100.0	21.0986 [20.0000]	105.5%			
NMeFOSAA	(570.0 / 419.0) 226799 (570.0 / 483.0) 103012	(9.52, 1.00) (0.01, N/A, -0.1)	400.2 691.6	0.4542 96.7 100.0	5.3126 [5.0000]	106.3%			
NEIFOSAA	(584.0 / 419.0) 260151 (584.0 / 526.0) 133729	(9.69, 1.00) (0.00, N/A, 0.1)	581.8 786.7	0.5140 66.7 100.0	5.1586 [5.0000]	103.2%			
NMeFOSE	(616.1 / 59.0) 453948	(10.58, 1.00) (0.01, N/A, 0.0)	855.6	N/A 0.0 0.0	20.8351 [20.0000]	104.2%			
NEtFOSE	(630.0 / 59.0) 138227	(10.69, 1.00) (0.01, N/A, 0.0)	1171.7	N/A 0.0 0.0	21.8135 [20.0000]	109.1%			
HFPO-DA	(285.0 / 169.0) 505688 (285.0 / 185.0) 1412912	(6.52, 1.00) (0.00, N/A, 0.0)	677.8 596.2	2.7940 109.5 100.0	10.1242 [10.0000]	101.2%			
ADONA	(377.0 / 85.0) 1937357 (377.0 / 251.0) 228853	(7.44, 1.14) (N/A, 0.00, -0.1)	660.2 445.4	0.1181 94.2 100.0	9.3564 [9.4270]	99.3%			
9CI-Pf3ONS	(531.0 / 351.0) 4968543 (533.0 / 353.0) 1472100	(9.72, 1.49) (N/A, 0.00, 0.1)	819.5 919.7	0.2963 93.5 100.0	8.4615 [9.3325]	90.7%			
11CI-PF3OUDS	(631.0 / 451.0) 3580794 (633.0 / 453.0) 1150706	(10.01, 1.54) (N/A, 0.00, 0.1)	703.9 676.8	0.3214 109.8 100.0	9.2545 [9.4321]	98.1%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 56871 (241.0 / 117.0) 99066	(4.49, 0.90) (N/A, 0.00, 0.2)	716.1 637.0	1.7419 0.1 100.0	18.0326 [20.0000]	90.2%			IR1,
5:3FTCA	(341.0 / 236.7) 499499 (341.0 / 217.0) 791973	(6.80, 1.10) (N/A, 0.00, 0.0)	663.3 658.2	1.5855 100.4 100.0	22.6557 [20.0000]	113.3%			
7:3FTCA	(441.0 / 317.0) 531430 (441.0 / 337.0) 458631	(8.62, 1.40) (N/A, 0.00, 0.0)	438.5 482.1	0.8630 106.1 100.0	21.3585 [20.0000]	106.8%			
PFEESA	(315.0 / 135.0) 1122172 (315.0 / 83.0) 298767	(6.62, 1.07) (N/A, 0.00, 0.1)	767.2 761.2	0.2662 94.2 100.0	10.0923 [8.9246]	113.1%			
PFMPA	(229.0 / 85.0) 184417	(4.20, 0.84) (N/A, 0.00, 0.0)	970.6	N/A 0.0 0.0	9.2920 [10.0000]	92.9%			
PFMBA	(279.0 / 85.0) 606408	(5.40, 1.08) (N/A, 0.00, 0.0)	848.3	N/A 0.0 0.0	9.3598 [10.0000]	93.6%			
NFDHA	(201.0 / 85.0) 23985 (295.0 / 201.0) 162317	(6.06, 0.98) (N/A, 0.00, 0.1)	327.2 599.0	6.7675 0.9 100.0	11.1295 [10.0000]	111.3%			IR1,
13C3_PFBa_IIS	(216.0 / 172.0) 71806	(3.70, N/A) (N/A, 0.00, N/A)	734.1	N/A	0.8213 [1.0000]	82.1% { 100.0% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 116838	(6.17, N/A) (N/A, 0.00, N/A)	566.7	N/A	0.8880 [1.0000]	88.8% { 100.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 100889	(7.93, N/A) (N/A, 0.00, N/A)	616.1	N/A	0.8060 [1.0000]	80.6% { 100.0% }			
13C5_PFNAl_IIS	(468.0 / 423.0) 97123	(8.65, N/A) (N/A, 0.00, N/A)	277.1	N/A	0.9730 [1.0000]	97.3% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ 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	(515.1 / 470.1) 68484	(9.32, N/A) (N/A, 0.00, N/A)	231.3	N/A	0.6604 [1.0000]	66.0% { 100.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 211082	(8.05, N/A) (N/A, 0.00, N/A)	876.7	N/A	0.8922 [1.0000]	89.2% { 100.0% }			
13C4_PFOS_IIS	(502.8 / 79.9) 159111	(9.47, N/A) (N/A, 0.00, N/A)	386.1	N/A	0.7931 [1.0000]	79.3% { 100.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 569048	(3.70, N/A) (N/A, 0.00, N/A)	748.1	N/A	7.6545 [8.0000]	95.7% { 100.0% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 324874	(5.01, N/A) (N/A, 0.00, N/A)	760.0	N/A	3.7768 [4.0000]	94.4% { 100.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 238684	(6.17, N/A) (N/A, 0.00, N/A)	614.9	N/A	1.7354 [2.0000]	86.8% { 100.0% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 221144	(7.10, N/A) (N/A, 0.00, N/A)	495.4	N/A	1.8199 [2.0000]	91.0% { 100.0% }			
13C8_PFOA_EIS	(421.0 / 376.0) 229716	(7.93, N/A) (N/A, 0.00, N/A)	437.0	N/A	2.0606 [2.0000]	103.0% { 100.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 82079	(8.66, N/A) (N/A, 0.00, N/A)	254.5	N/A	0.7737 [1.0000]	77.4% { 100.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 108096	(9.33, N/A) (N/A, 0.00, N/A)	341.1	N/A	1.1649 [1.0000]	116.5% { 100.0% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 151653	(9.72, N/A) (N/A, 0.00, N/A)	238.2	N/A	1.1350 [1.0000]	113.5% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 182162	(9.90, N/A) (N/A, 0.00, N/A)	342.6	N/A	1.2089 [1.0000]	120.9% { 100.0% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 112651	(10.13, N/A) (N/A, 0.00, N/A)	312.1	N/A	1.2300 [1.0000]	123.0% { 100.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 661734	(6.13, N/A) (N/A, 0.00, N/A)	729.3	N/A	1.9195 [2.0000]	96.0% { 100.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 343547	(8.05, N/A) (N/A, 0.00, N/A)	738.8	N/A	1.9216 [2.0000]	96.1% { 100.0% }			
13C8_PFOS_EIS	(507.0 / 80.0) 549953	(9.47, N/A) (N/A, 0.00, N/A)	298.1	N/A	2.1041 [2.0000]	105.2% { 100.0% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 84290	(5.84, N/A) (N/A, 0.00, N/A)	700.2	N/A	4.3361 [4.0000]	108.4% { 100.0% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 88928	(7.59, N/A) (N/A, 0.00, N/A)	508.3	N/A	3.5698 [4.0000]	89.2% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 87999	(8.99, N/A) (N/A, 0.00, N/A)	267.2	N/A	3.9402 [4.0000]	98.5% { 100.0% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 833933	(10.17, N/A) (N/A, 0.00, N/A)	945.0	N/A	2.1924 [2.0000]	109.6% { 100.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 203841	(10.62, N/A) (N/A, 0.00, N/A)	670.3	N/A	2.1511 [2.0000]	107.6% { 100.0% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 184756	(10.71, N/A) (N/A, 0.00, N/A)	1008.8	N/A	2.0879 [2.0000]	104.4% { 100.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 235621	(9.51, N/A) (N/A, 0.00, N/A)	433.7	N/A	3.8431 [4.0000]	96.1% { 100.0% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 223781	(9.69, N/A) (N/A, 0.00, N/A)	245.4	N/A	4.3918 [4.0000]	109.8% { 100.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 342212	(10.58, N/A) (N/A, 0.00, N/A)	628.2	N/A	18.7736 [20.0000]	93.9% { 100.0% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 198534	(10.68, N/A) (N/A, 0.00, N/A)	1183.4	N/A	20.2258 [20.0000]	101.1% { 100.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 653957	(6.51, N/A) (N/A, 0.00, N/A)	996.4	N/A	7.8091 [8.0000]	97.6% { 100.0% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Instrument ID: Saphira
 Standard ID: 22L0304

Work Order: 22L0127
 Project: Red Hill AFFF Assessment Sampling
 Calibration: 2251019
 Sequence: SB03903

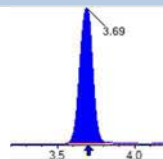
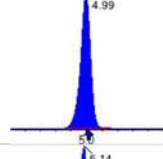
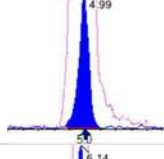
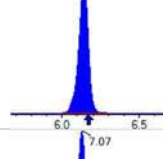
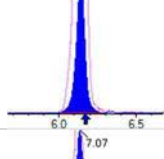
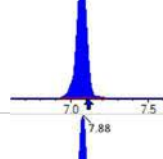
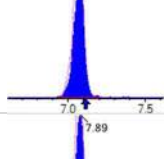
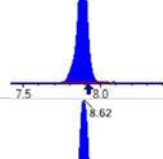
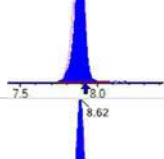
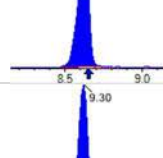
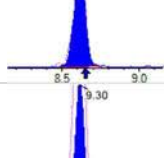
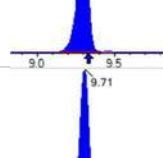
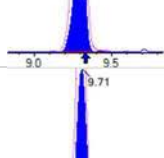
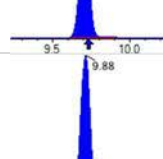
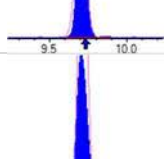
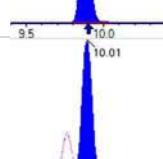
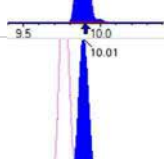
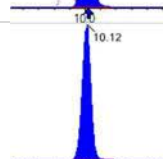
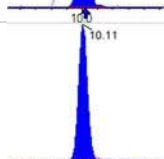
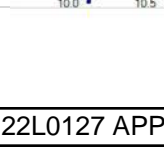
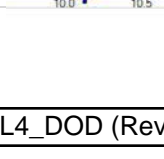
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03903-CCV2	PFBA	20.0	20.5	103	ng/mL	+/- 30.00%
	PFPEA	10.0	9.71	97.1	ng/mL	+/- 30.00%
	PFHXA	5.00	4.61	92.3	ng/mL	+/- 30.00%
	PFHPA	5.00	4.93	98.7	ng/mL	+/- 30.00%
	PFOA	5.00	5.15	103	ng/mL	+/- 30.00%
	PFNA	5.00	5.13	103	ng/mL	+/- 30.00%
	PFDA	5.00	4.96	99.1	ng/mL	+/- 30.00%
	PFUnA	5.00	6.16	123	ng/mL	+/- 30.00%
	PFDOA	5.00	5.50	110	ng/mL	+/- 30.00%
	PFTRDA	5.00	5.07	101	ng/mL	+/- 30.00%
	PFTEDA	5.00	5.17	103	ng/mL	+/- 30.00%
	PFBS	4.42	4.43	100	ng/mL	+/- 30.00%
	PFPEs	4.70	4.35	92.5	ng/mL	+/- 30.00%
	PFHXS	4.58	4.41	96.4	ng/mL	+/- 30.00%
	PFHPS	4.78	4.33	90.6	ng/mL	+/- 30.00%
	PFOS	4.65	4.34	93.4	ng/mL	+/- 30.00%
	PFNS	4.80	4.93	103	ng/mL	+/- 30.00%
	PFDS	4.82	5.08	105	ng/mL	+/- 30.00%
	PFDOS	4.85	4.54	93.6	ng/mL	+/- 30.00%
	4:2FTS	18.8	20.3	108	ng/mL	+/- 30.00%
	6:2FTS	19.0	21.8	115	ng/mL	+/- 30.00%
	8:2FTS	19.2	23.7	123	ng/mL	+/- 30.00%
	PFOSA	5.00	5.73	115	ng/mL	+/- 30.00%
	NMeFOSA	20.0	20.5	103	ng/mL	+/- 30.00%
	NEtFOSA	20.0	18.5	92.4	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	5.35	107	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	4.40	88.1	ng/mL	+/- 30.00%
	NMeFOSE	20.0	19.5	97.3	ng/mL	+/- 30.00%
	NEtFOSE	20.0	21.1	105	ng/mL	+/- 30.00%
	HFPO-DA	10.0	9.98	99.8	ng/mL	+/- 30.00%

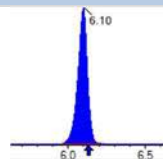
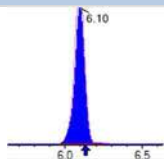
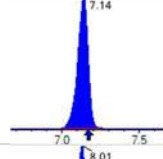
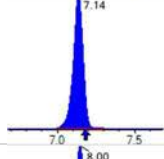
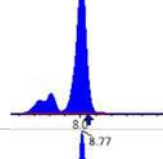
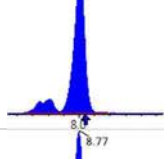
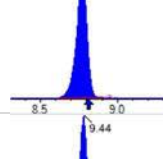
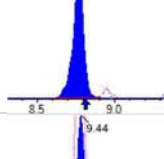
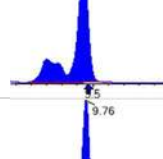
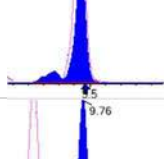
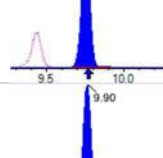
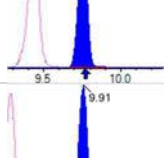
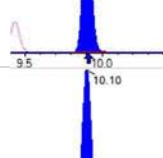
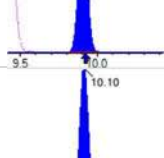
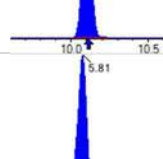
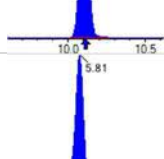
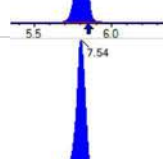
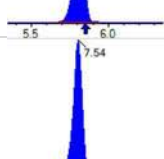
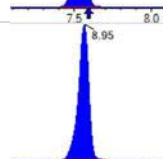
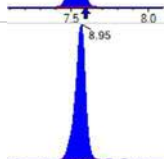

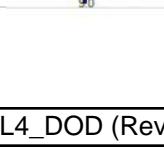
INITIAL AND CONTINUING CALIBRATION CHECK

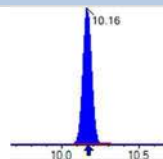
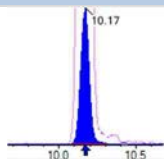
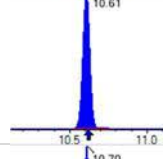
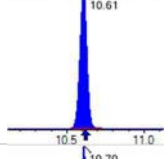
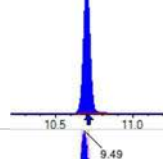
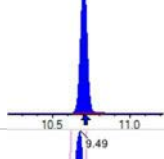
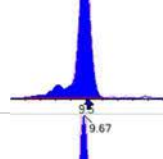
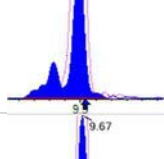
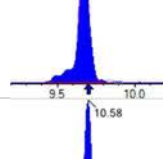
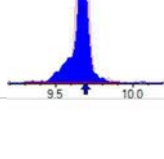
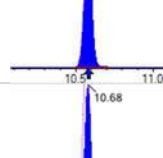
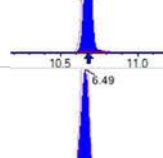
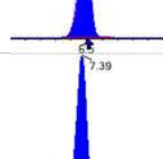
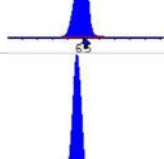
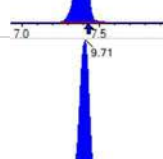
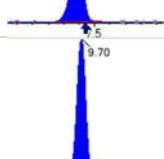
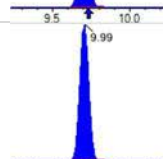
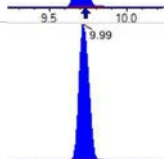

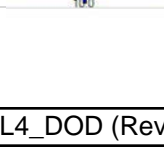
EPA 1633

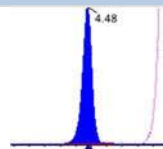
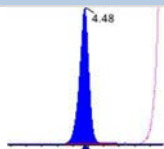
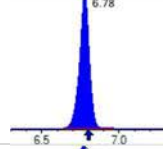
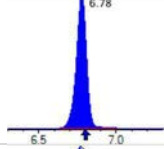
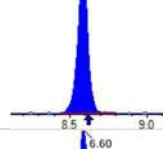
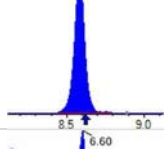
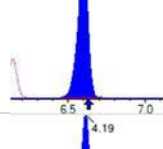
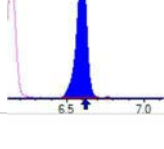
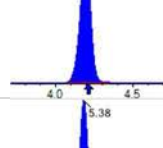
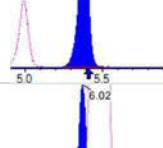
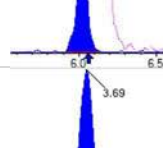
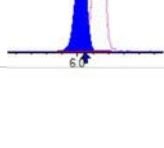
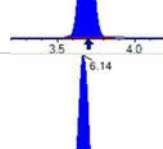
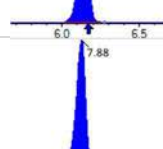
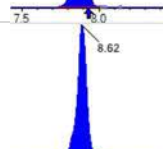

Laboratory:	APPL, LLC	Work Order:	22L0127
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2251019
Standard ID:	22L0304	Sequence:	SB03903

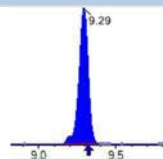
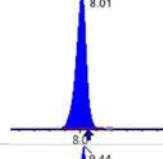
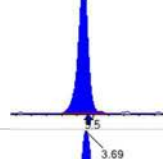
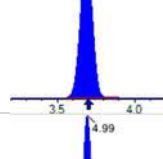
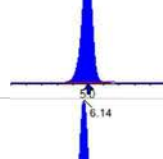
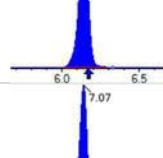
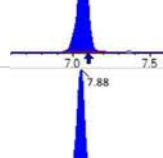
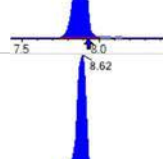
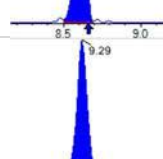
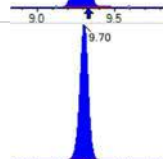
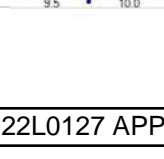
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03903-CCV2	ADONA	9.45	9.63	102	ng/mL	+/- 30.00%
	PFEESA	8.90	8.34	93.7	ng/mL	+/- 30.00%
	PFMPA	10.0	8.89	88.9	ng/mL	+/- 30.00%
	PFMBA	10.0	10.3	103	ng/mL	+/- 30.00%
	NFDHA	10.0	7.59	75.9	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	9.34	99.9	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	9.63	102	ng/mL	+/- 30.00%
	3:3FTCA	20.0	19.5	97.4	ng/mL	+/- 30.00%
	5:3FTCA	20.0	18.4	92.1	ng/mL	+/- 30.00%
	7:3FTCA	20.0	18.1	90.4	ng/mL	+/- 30.00%

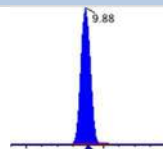
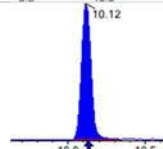
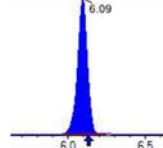
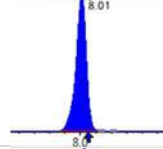
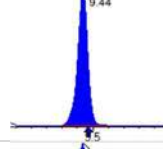
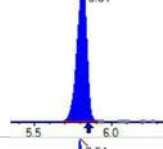
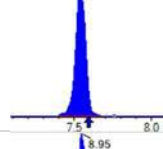
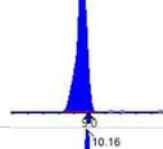
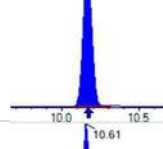
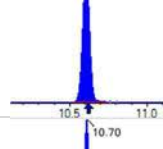
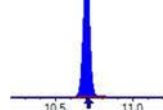
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 998344	(3.69, 1.00) (0.00, N/A, 0.0)	67.7	N/A 0.0 0.0	20.5317 [20.0000]	102.7%			
PFPeA	(262.9 / 219.0) 731072 (262.9 / 69.0) 9433	(4.99, 1.00) (0.00, N/A, 0.1)	682.3 234.4	0.0129 15118.0 106.1	9.7137 [10.0000]	97.1%			
PFHxA	(313.0 / 269.0) 592384 (313.0 / 119.0) 57682	(6.14, 1.00) (0.00, N/A, 0.0)	650.0 363.6	0.0974 99.3 102.5	4.6144 [5.0000]	92.3%			
PFHpA	(363.0 / 319.0) 530440 (363.0 / 169.0) 159335	(7.07, 1.00) (0.00, N/A, -0.2)	797.5 727.1	0.3004 96.1 104.0	4.9342 [5.0000]	98.7%			
PFOA	(413.0 / 369.0) 575476 (413.0 / 169.0) 177292	(7.88, 1.00) (0.00, N/A, -0.1)	764.4 464.3	0.3081 91.5 94.4	5.1483 [5.0000]	103.0%			
PFNA	(463.0 / 419.0) 368774 (463.0 / 169.0) 84633	(8.62, 1.00) (0.00, N/A, 0.3)	409.6 88.9	0.2295 114.4 100.7	5.1259 [5.0000]	102.5%			
PFDA	(513.0 / 469.0) 559869 (513.0 / 169.0) 52442	(9.30, 1.00) (0.01, N/A, 0.2)	446.0 468.8	0.0937 117.7 100.8	4.9567 [5.0000]	99.1%			
PFUnA	(563.0 / 519.0) 699517 (563.0 / 169.0) 72604	(9.71, 1.00) (0.00, N/A, 0.0)	645.8 363.6	0.1038 92.7 90.3	6.1576 [5.0000]	123.2%			
PFDoA	(613.0 / 569.0) 842147 (613.0 / 169.0) 105691	(9.88, 1.00) (0.00, N/A, 0.3)	586.6 606.7	0.1255 99.9 94.4	5.5006 [5.0000]	110.0%			
PFTrDA	(663.0 / 619.0) 640319 (663.0 / 169.0) 136232	(10.01, 1.01) (N/A, -0.01, 0.2)	514.5 511.3	0.2128 101.8 118.1	5.0679 [5.0000]	101.4%			
PFTeDA	(713.0 / 669.0) 515728 (713.0 / 169.0) 123756	(10.12, 1.00) (0.00, N/A, 0.3)	768.4 18193710.9	0.2400 105.7 112.9	5.1693 [5.0000]	103.4%			

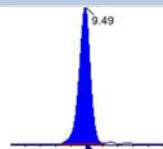
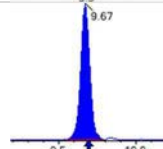
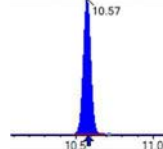
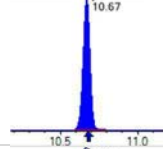
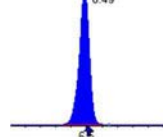
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 819308 (298.9 / 99.0) 530900	(6.10, 1.00) (0.00, N/A, 0.0)	827.6 738.8	0.6480 95.3 98.9	4.4281 [4.4237]	100.1%			
PFPeS	(349.0 / 80.0) 1421471 (349.0 / 99.0) 550818	(7.14, 0.89) (N/A, -0.04, 0.1)	786.0 547.1	0.3875 103.8 86.4	4.3464 [4.6919]	92.6%			
PFHxS	(399.0 / 80.0) 1223539 (399.0 / 99.0) 433260	(8.01, 1.00) (0.00, N/A, 0.1)	5938.8 726158.5	0.3541 103.3 100.9	4.4131 [4.5549]	96.9%			
PFHpS	(449.0 / 80.0) 1050456 (449.0 / 99.0) 300495	(8.77, 0.93) (N/A, -0.04, 0.1)	729.2 501.5	0.2861 97.5 105.8	4.3295 [4.7570]	91.0%			
PFOS	(499.0 / 80.0) 1306163 (499.0 / 99.0) 315967	(9.44, 1.00) (0.00, N/A, -0.2)	105.3 136.3	0.2419 105.8 106.5	4.3423 [4.6375]	93.6%			
PFNS	(549.0 / 80.0) 1705929 (549.0 / 99.0) 418686	(9.76, 1.03) (N/A, -0.01, 0.0)	641.8 884.5	0.2454 98.3 89.6	4.9321 [4.7994]	102.8%			
PFDS	(599.0 / 80.0) 2168184 (599.0 / 99.0) 522388	(9.90, 1.05) (N/A, -0.01, -0.2)	1052.3 978.0	0.2409 94.5 111.4	5.0800 [4.8155]	105.5%			
PFDoS	(698.9 / 80.0) 1011014 (698.9 / 99.0) 270333	(10.10, 1.07) (N/A, -0.01, -0.1)	749.2 492.0	0.2674 130.1 117.7	4.5381 [4.8478]	93.6%			
4:2FTS	(327.0 / 307.0) 1288094 (327.0 / 81.0) 686222	(5.81, 1.00) (0.00, N/A, 0.0)	1038.3 652.7	0.5327 106.6 95.9	20.2573 [18.6906]	108.4%			
6:2FTS	(427.0 / 407.0) 799946 (427.0 / 81.0) 518494	(7.54, 1.00) (0.00, N/A, 0.0)	901.7 728.7	0.6482 90.5 98.0	21.7633 [18.9808]	114.7%			
8:2FTS	(527.0 / 507.0) 674183 (527.0 / 81.0) 414931	(8.95, 1.00) (0.00, N/A, 0.1)	572.0 479.4	0.6155 87.5 103.8	23.6586 [19.1658]	123.4%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 2171214 (498.0 / 478.0) 52896	(10.16, 1.00) (0.00, N/A, -0.3)	823.7 539.1	0.0244 103.1 120.5	5.7341 [5.0000]	114.7%			
NMeFOSA	(511.9 / 219.0) 1835193 (511.9 / 169.0) 1240736	(10.61, 1.00) (0.00, N/A, 0.0)	1233.3 1144.8	0.6761 97.0 96.1	20.5463 [20.0000]	102.7%			
NEIFOSA	(526.0 / 219.0) 1826388 (526.0 / 169.0) 2059815	(10.70, 1.00) (0.00, N/A, 0.0)	1382.4 1598.1	1.1278 100.1 106.7	18.4794 [20.0000]	92.4%			
NMeFOSAA	(570.0 / 419.0) 256938 (570.0 / 483.0) 120096	(9.49, 1.00) (0.00, N/A, -0.2)	359.5 226.3	0.4674 99.5 102.9	5.3471 [5.0000]	106.9%			
NEIFOSAA	(584.0 / 419.0) 236737 (584.0 / 526.0) 153002	(9.67, 1.00) (0.00, N/A, 0.0)	598.7 1321.9	0.6463 83.9 125.7	4.4035 [5.0000]	88.1%			
NMeFOSE	(616.1 / 59.0) 538867	(10.58, 1.00) (0.00, N/A, 0.0)	883.7	N/A 0.0 0.0	19.4575 [20.0000]	97.3%			
NEtFOSE	(630.0 / 59.0) 143511	(10.68, 1.00) (0.01, N/A, 0.0)	1147.3	N/A 0.0 0.0	21.0669 [20.0000]	105.3%			
HFPO-DA	(285.0 / 169.0) 513193 (285.0 / 185.0) 1452203	(6.49, 1.00) (0.00, N/A, 0.0)	592.8 659.1	2.8297 110.9 101.3	9.9820 [10.0000]	99.8%			
ADONA	(377.0 / 85.0) 2051922 (377.0 / 251.0) 270470	(7.39, 1.14) (N/A, -0.05, 0.1)	925.2 542.8	0.1318 105.1 111.6	9.6276 [9.4270]	102.1%			
9CI-Pf3ONS	(531.0 / 351.0) 5643710 (533.0 / 353.0) 1753958	(9.71, 1.50) (N/A, -0.02, 0.1)	466.6 948.5	0.3108 98.1 104.9	9.3377 [9.3325]	100.1%			
11CI-PF3OUDS	(631.0 / 451.0) 3835152 (633.0 / 453.0) 1140349	(9.99, 1.54) (N/A, -0.01, 0.2)	778.1 1129.4	0.2973 101.6 92.5	9.6297 [9.4321]	102.1%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ 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) 62905 (241.0 / 117.0) 107304	(4.48, 0.90) (N/A, -0.01, 0.0)	699.8 535.6	1.7058 0.1 97.9	19.4872 [20.0000]	97.4%			IR1,
5:3FTCA	(341.0 / 236.7) 481720 (341.0 / 217.0) 839386	(6.78, 1.10) (N/A, -0.02, 0.0)	621.7 476.4	1.7425 110.3 109.9	18.4278 [20.0000]	92.1%			
7:3FTCA	(441.0 / 317.0) 533400 (441.0 / 337.0) 436380	(8.59, 1.40) (N/A, -0.04, 0.1)	409.6 435.3	0.8181 100.6 94.8	18.0806 [20.0000]	90.4%			
PFEESA	(315.0 / 135.0) 1099422 (315.0 / 83.0) 333939	(6.60, 1.07) (N/A, -0.03, -0.1)	747.4 762.2	0.3037 107.5 114.1	8.3393 [8.9246]	93.4%			
PFMPA	(229.0 / 85.0) 180689	(4.19, 0.84) (N/A, -0.01, 0.0)	1051.1	N/A 0.0 0.0	8.8948 [10.0000]	88.9%			
PFMBA	(279.0 / 85.0) 684233	(5.38, 1.08) (N/A, -0.02, 0.0)	838.9	N/A 0.0 0.0	10.3181 [10.0000]	103.2%			
NFDHA	(201.0 / 85.0) 19498 (295.0 / 201.0) 166586	(6.02, 0.98) (N/A, -0.03, -0.1)	306.2 626.9	8.5435 1.1 126.2	7.5944 [10.0000]	75.9%			IR1,
13C3_PFBA_IIS	(216.0 / 172.0) 72760	(3.69, N/A) (N/A, -0.01, N/A)	632.5	N/A	0.8322 [1.0000]	83.2% { 101.3% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 120643	(6.14, N/A) (N/A, -0.03, N/A)	846.9	N/A	0.9169 [1.0000]	91.7% { 103.3% }			
13C4_PFOA_IIS	(417.0 / 372.0) 111829	(7.88, N/A) (N/A, -0.04, N/A)	459.5	N/A	0.8934 [1.0000]	89.3% { 110.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 84833	(8.62, N/A) (N/A, -0.03, N/A)	332.7	N/A	0.8499 [1.0000]	85.0% { 87.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(515.1 / 470.1) 93898	(9.29, N/A) (N/A, -0.03, N/A)	418.2	N/A	0.9054 [1.0000]	90.5% { 137.1% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 197877	(8.01, N/A) (N/A, -0.05, N/A)	559.1	N/A	0.8364 [1.0000]	83.6% { 93.7% }			
13C4_PFOS_IIS	(502.8 / 79.9) 166905	(9.44, N/A) (N/A, -0.03, N/A)	296.4	N/A	0.8319 [1.0000]	83.2% { 104.9% }			
13C4_PFBA_EIS	(217.0 / 172.0) 585688	(3.69, N/A) (N/A, -0.01, N/A)	807.5	N/A	7.7750 [8.0000]	97.2% { 102.9% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 332521	(4.99, N/A) (N/A, -0.01, N/A)	619.9	N/A	3.7438 [4.0000]	93.6% { 102.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 283000	(6.14, N/A) (N/A, -0.03, N/A)	609.1	N/A	1.9927 [2.0000]	99.6% { 118.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 238105	(7.07, N/A) (N/A, -0.03, N/A)	488.7	N/A	1.8976 [2.0000]	94.9% { 107.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 235870	(7.88, N/A) (N/A, -0.04, N/A)	505.0	N/A	1.9088 [2.0000]	95.4% { 102.7% }			
13C9_PFNA_EIS	(472.0 / 427.0) 85140	(8.62, N/A) (N/A, -0.04, N/A)	201.8	N/A	0.9188 [1.0000]	91.9% { 103.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 122514	(9.29, N/A) (N/A, -0.04, N/A)	343.1	N/A	0.9629 [1.0000]	96.3% { 113.3% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 152429	(9.70, N/A) (N/A, -0.02, N/A)	461.3	N/A	0.8320 [1.0000]	83.2% { 100.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 191133	(9.88, N/A) (N/A, -0.01, N/A)	1176.5	N/A	0.9251 [1.0000]	92.5% { 104.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 104245	(10.12, N/A) (N/A, -0.01, N/A)	253.1	N/A	0.8302 [1.0000]	83.0% { 92.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 677453	(6.09, N/A) (N/A, -0.03, N/A)	729.0	N/A	2.0963 [2.0000]	104.8% { 102.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 348663	(8.01, N/A) (N/A, -0.04, N/A)	560.2	N/A	2.0804 [2.0000]	104.0% { 101.5% }			
13C8_PFOS_EIS	(507.0 / 80.0) 547357	(9.44, N/A) (N/A, -0.03, N/A)	274.3	N/A	1.9964 [2.0000]	99.8% { 99.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 79754	(5.81, N/A) (N/A, -0.03, N/A)	440.0	N/A	4.3766 [4.0000]	109.4% { 94.6% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 95223	(7.54, N/A) (N/A, -0.05, N/A)	582.6	N/A	4.0775 [4.0000]	101.9% { 107.1% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 77766	(8.95, N/A) (N/A, -0.04, N/A)	397.3	N/A	3.7144 [4.0000]	92.9% { 88.4% }			
13C8_PFOA_EIS	(506.0 / 78.0) 760848	(10.16, N/A) (N/A, -0.01, N/A)	773.8	N/A	1.9068 [2.0000]	95.3% { 91.2% }			
D3_NMeFOA_EIS	(515.0 / 169.0) 223903	(10.61, N/A) (N/A, -0.01, N/A)	782.6	N/A	2.2524 [2.0000]	112.6% { 109.8% }			
D5_NEtFOA_EIS	(531.1 / 169.0) 216763	(10.70, N/A) (N/A, -0.01, N/A)	1162.2	N/A	2.3352 [2.0000]	116.8% { 117.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 265211	(9.49, N/A) (N/A, -0.02, N/A)	352.3	N/A	4.1237 [4.0000]	103.1% { 112.6% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 238560	(9.67, N/A) (N/A, -0.02, N/A)	364.4	N/A	4.4632 [4.0000]	111.6% { 106.6% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 434990	(10.57, N/A) (N/A, -0.01, N/A)	903.8	N/A	22.7491 [20.0000]	113.7% { 127.1% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 213429	(10.67, N/A) (N/A, -0.01, N/A)	1040.1	N/A	20.7279 [20.0000]	103.6% { 107.5% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 673120	(6.49, N/A) (N/A, -0.03, N/A)	583.3	N/A	7.7845 [8.0000]	97.3% { 102.9% }			

INITIAL AND CONTINUING CALIBRATION CHECK

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Instrument ID: Saphira
 Standard ID: 22L0304

Work Order: 22L0127
 Project: Red Hill AFFF Assessment Sampling
 Calibration: 2251019
 Sequence: SB03903

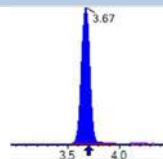
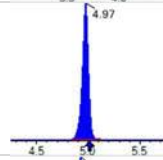
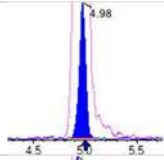
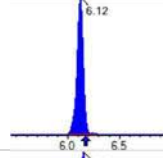
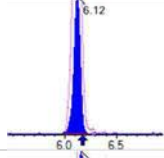
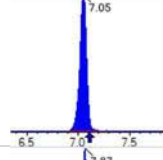
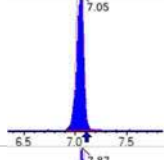
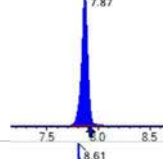
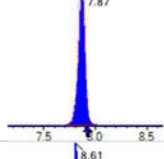
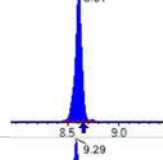
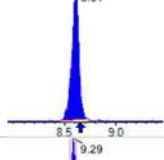
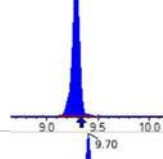
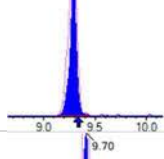
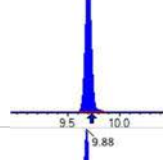
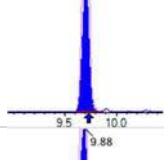
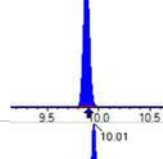
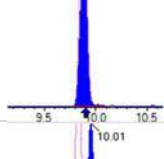
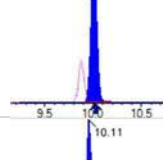
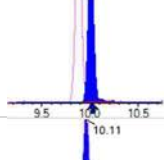
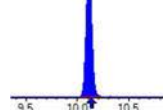
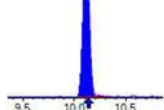
Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03903-CCV3	PFBA	20.0	20.8	104	ng/mL	+/- 30.00%
	PFPEA	10.0	9.27	92.7	ng/mL	+/- 30.00%
	PFHXA	5.00	4.83	96.6	ng/mL	+/- 30.00%
	PFHPA	5.00	5.04	101	ng/mL	+/- 30.00%
	PFOA	5.00	5.11	102	ng/mL	+/- 30.00%
	PFNA	5.00	5.20	104	ng/mL	+/- 30.00%
	PFDA	5.00	5.50	110	ng/mL	+/- 30.00%
	PFUnA	5.00	5.03	101	ng/mL	+/- 30.00%
	PFDOA	5.00	5.39	108	ng/mL	+/- 30.00%
	PFTRDA	5.00	5.44	109	ng/mL	+/- 30.00%
	PFTEDA	5.00	4.81	96.2	ng/mL	+/- 30.00%
	PFBS	4.42	4.06	91.9	ng/mL	+/- 30.00%
	PFPEs	4.70	4.51	96.0	ng/mL	+/- 30.00%
	PFHXS	4.58	4.52	98.7	ng/mL	+/- 30.00%
	PFHPS	4.78	4.47	93.5	ng/mL	+/- 30.00%
	PFOS	4.65	4.25	91.4	ng/mL	+/- 30.00%
	PFNS	4.80	4.53	94.3	ng/mL	+/- 30.00%
	PFDS	4.82	4.71	97.6	ng/mL	+/- 30.00%
	PFDOS	4.85	5.11	105	ng/mL	+/- 30.00%
	4:2FTS	18.8	18.2	97.0	ng/mL	+/- 30.00%
	6:2FTS	19.0	20.1	106	ng/mL	+/- 30.00%
	8:2FTS	19.2	17.3	90.3	ng/mL	+/- 30.00%
	PFOSA	5.00	5.19	104	ng/mL	+/- 30.00%
	NMeFOSA	20.0	19.5	97.6	ng/mL	+/- 30.00%
	NEtFOSA	20.0	21.0	105	ng/mL	+/- 30.00%
	NMeFOSAA	5.00	5.49	110	ng/mL	+/- 30.00%
	NEtFOSAA	5.00	4.43	88.5	ng/mL	+/- 30.00%
	NMeFOSE	20.0	20.1	101	ng/mL	+/- 30.00%
	NEtFOSE	20.0	20.2	101	ng/mL	+/- 30.00%
	HFPO-DA	10.0	10.1	101	ng/mL	+/- 30.00%

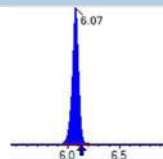
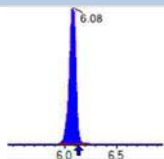
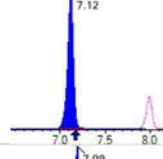
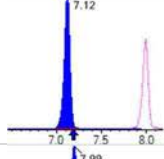
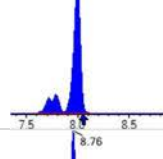
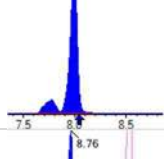
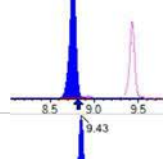
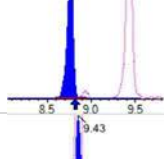
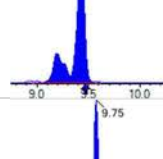
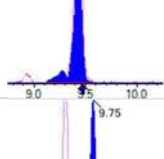
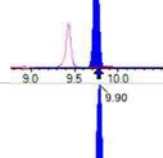
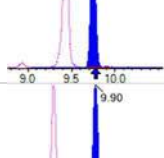
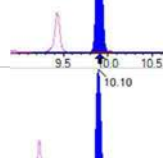
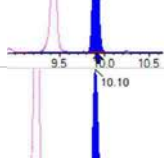
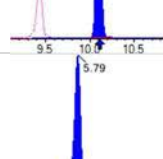
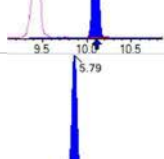
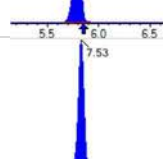
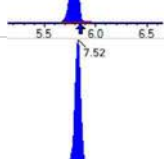
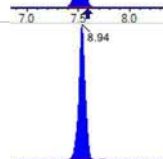
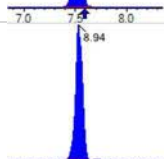
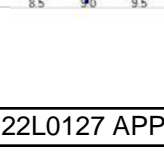
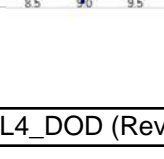
INITIAL AND CONTINUING CALIBRATION CHECK

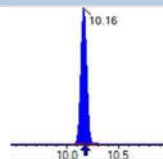
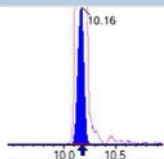
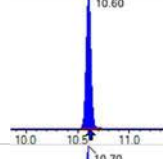
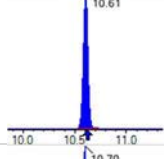
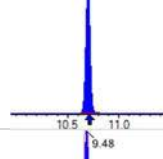
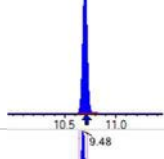
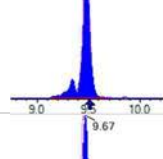
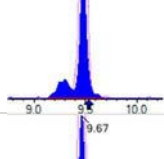
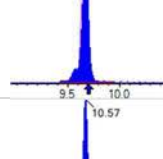
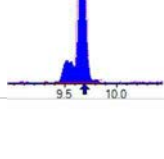
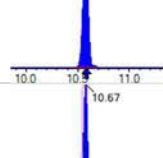
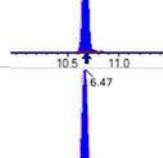
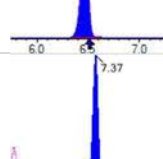
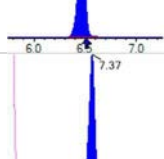
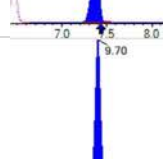
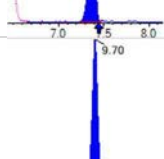
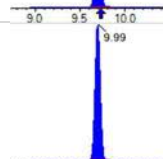
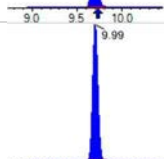
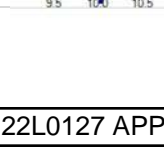
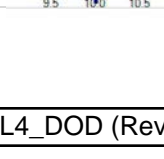
EPA 1633

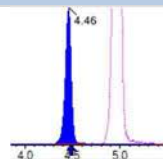
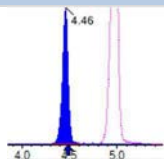
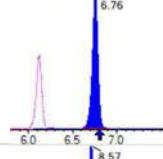
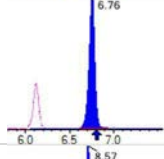
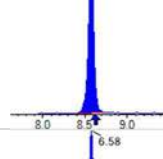
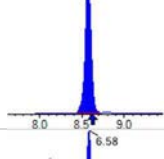
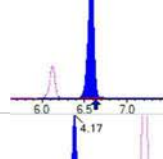
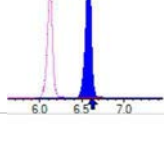
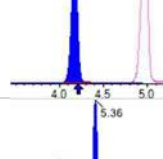
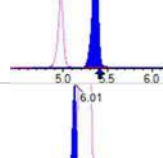
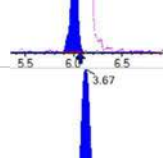
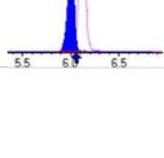
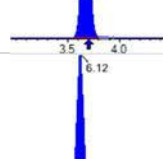
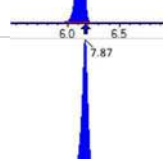
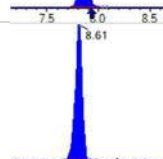

Laboratory:	APPL, LLC	Work Order:	22L0127
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Instrument ID:	Saphira	Calibration:	2251019
Standard ID:	22L0304	Sequence:	SB03903

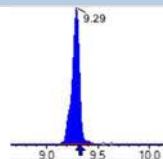
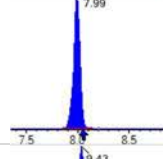
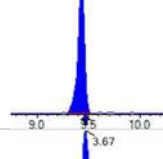
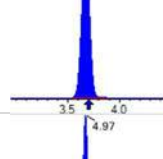
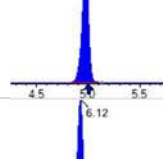
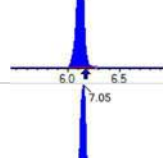
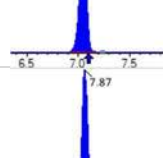
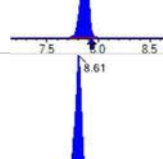
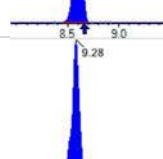
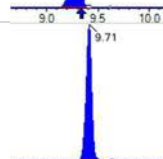

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
SB03903-CCV3	ADONA	9.45	9.56	101	ng/mL	+/- 30.00%
	PFEESA	8.90	9.27	104	ng/mL	+/- 30.00%
	PFMPA	10.0	8.98	89.8	ng/mL	+/- 30.00%
	PFMBA	10.0	9.73	97.3	ng/mL	+/- 30.00%
	NFDHA	10.0	9.13	91.3	ng/mL	+/- 30.00%
	9CL-PF3ONS	9.35	8.97	96.0	ng/mL	+/- 30.00%
	11CL-PF3OUDS	9.45	9.75	103	ng/mL	+/- 30.00%
	3:3FTCA	20.0	17.3	86.3	ng/mL	+/- 30.00%
	5:3FTCA	20.0	20.3	101	ng/mL	+/- 30.00%
	7:3FTCA	20.0	20.0	100	ng/mL	+/- 30.00%

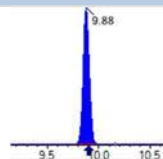
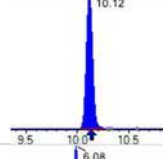
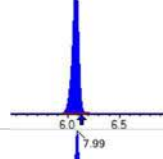
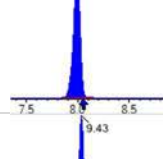
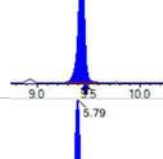
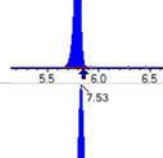
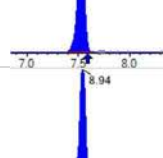
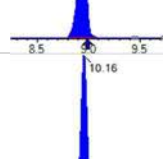
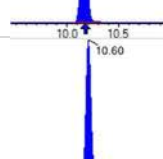
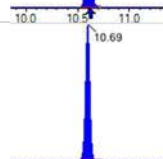
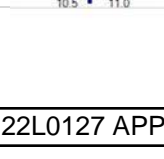
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 1018755	(3.67, 1.00) (0.00, N/A, 0.0)	58.1	N/A 0.0 0.0	20.7502 [20.0000]	103.8%			
PFPeA	(262.9 / 219.0) 745023 (262.9 / 69.0) 8674	(4.97, 1.00) (0.00, N/A, 0.0)	808.0 240.5	0.0116 13641.1 95.7	9.2667 [10.0000]	92.7%			
PFHxA	(313.0 / 269.0) 585296 (313.0 / 119.0) 62946	(6.12, 1.00) (0.00, N/A, 0.0)	661.7 477.9	0.1075 109.6 113.2	4.8298 [5.0000]	96.6%			
PFHpA	(363.0 / 319.0) 561135 (363.0 / 169.0) 168968	(7.05, 1.00) (0.00, N/A, 0.0)	689.2 571.8	0.3011 96.4 104.3	5.0365 [5.0000]	100.7%			
PFOA	(413.0 / 369.0) 617265 (413.0 / 169.0) 189001	(7.87, 1.00) (0.00, N/A, 0.0)	639.3 671.9	0.3062 90.9 93.8	5.1083 [5.0000]	102.2%			
PFNA	(463.0 / 419.0) 416148 (463.0 / 169.0) 89519	(8.61, 1.00) (0.00, N/A, 0.0)	405.9 93.6	0.2151 107.2 94.3	5.2002 [5.0000]	104.0%			
PFDA	(513.0 / 469.0) 597459 (513.0 / 169.0) 63447	(9.29, 1.00) (0.00, N/A, -0.2)	424.2 292.8	0.1062 133.5 114.3	5.5026 [5.0000]	110.1%			
PFUnA	(563.0 / 519.0) 764995 (563.0 / 169.0) 82630	(9.70, 1.00) (-0.01, N/A, -0.3)	540.6 243.3	0.1080 96.4 94.0	5.0251 [5.0000]	100.5%			
PFDoA	(613.0 / 569.0) 877900 (613.0 / 169.0) 110727	(9.88, 1.00) (0.00, N/A, -0.1)	604.8 297.6	0.1261 100.4 94.9	5.3924 [5.0000]	107.8%			
PFTrDA	(663.0 / 619.0) 731372 (663.0 / 169.0) 133355	(10.01, 1.01) (N/A, -0.02, 0.0)	683.1 336.0	0.1823 87.2 101.2	5.4436 [5.0000]	108.9%			
PFTeDA	(713.0 / 669.0) 635885 (713.0 / 169.0) 123084	(10.11, 1.00) (-0.01, N/A, -0.2)	733.5 334.7	0.1936 85.3 91.1	4.8079 [5.0000]	96.2%			

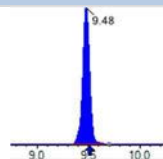
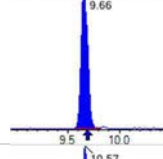
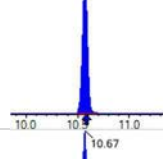
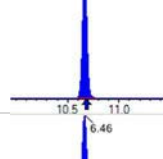
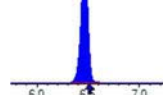
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 778463 (298.9 / 99.0) 562552	(6.07, 1.00) (0.00, N/A, -0.2)	666.3 631.8	0.7226 106.3 110.3	4.0635 [4.4237]	91.9%			
PFPeS	(349.0 / 80.0) 1533838 (349.0 / 99.0) 567541	(7.12, 0.89) (N/A, -0.06, 0.0)	751.1 691.7	0.3700 99.1 82.5	4.5142 [4.6919]	96.2%			
PFHxS	(399.0 / 80.0) 1301763 (399.0 / 99.0) 457825	(7.99, 1.00) (0.00, N/A, 0.2)	2483.2 47861.3	0.3517 102.6 100.2	4.5193 [4.5549]	99.2%			
PFHpS	(449.0 / 80.0) 1152044 (449.0 / 99.0) 326131	(8.76, 0.93) (N/A, -0.05, -0.3)	766.1 432.9	0.2831 96.5 104.7	4.4707 [4.7570]	94.0%			
PFOS	(499.0 / 80.0) 1357523 (499.0 / 99.0) 307727	(9.43, 1.00) (0.00, N/A, -0.1)	98.0 190.2	0.2267 99.2 99.8	4.2493 [4.6375]	91.6%			
PFNS	(549.0 / 80.0) 1663683 (549.0 / 99.0) 426618	(9.75, 1.03) (N/A, -0.02, 0.1)	502.6 388.5	0.2564 102.8 93.7	4.5288 [4.7994]	94.4%			
PFDS	(599.0 / 80.0) 2132805 (599.0 / 99.0) 587486	(9.90, 1.05) (N/A, -0.01, 0.2)	687.3 856.9	0.2755 108.1 127.4	4.7050 [4.8155]	97.7%			
PFDoS	(698.9 / 80.0) 1209525 (698.9 / 99.0) 288771	(10.10, 1.07) (N/A, -0.01, 0.0)	938.1 682.6	0.2387 116.2 105.1	5.1118 [4.8478]	105.4%			
4:2FTS	(327.0 / 307.0) 1131230 (327.0 / 81.0) 659897	(5.79, 1.00) (0.00, N/A, 0.1)	716.2 845.8	0.5833 116.7 105.0	18.2388 [18.6906]	97.6%			
6:2FTS	(427.0 / 407.0) 740576 (427.0 / 81.0) 508318	(7.53, 1.00) (0.00, N/A, 0.2)	980.8 707.0	0.6864 95.8 103.8	20.0659 [18.9808]	105.7%			
8:2FTS	(527.0 / 507.0) 587620 (527.0 / 81.0) 425632	(8.94, 1.00) (-0.01, N/A, 0.0)	520.2 500.5	0.7243 103.0 122.2	17.3367 [19.1658]	90.5%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 2264545 (498.0 / 478.0) 49800	(10.16, 1.00) (0.00, N/A, -0.1)	937.8 27429.7	0.0220 93.0 108.7	5.1932 [5.0000]	103.9%			
NMeFOSA	(511.9 / 219.0) 1934796 (511.9 / 169.0) 1262157	(10.60, 1.00) (0.00, N/A, -0.1)	978.7 920.2	0.6523 93.6 92.7	19.5115 [20.0000]	97.6%			
NEIFOSA	(526.0 / 219.0) 2134997 (526.0 / 169.0) 2085013	(10.70, 1.00) (0.00, N/A, 0.0)	1330.1 1532.7	0.9766 86.7 92.4	21.0445 [20.0000]	105.2%			
NMeFOSAA	(570.0 / 419.0) 243935 (570.0 / 483.0) 131963	(9.48, 1.00) (0.00, N/A, 0.3)	517.8 473.0	0.5410 115.2 119.1	5.4910 [5.0000]	109.8%			
NEIFOSAA	(584.0 / 419.0) 253451 (584.0 / 526.0) 165536	(9.67, 1.00) (0.01, N/A, 0.2)	557.4 2502.3	0.6531 84.8 127.1	4.4257 [5.0000]	88.5%			
NMeFOSE	(616.1 / 59.0) 592155	(10.57, 1.00) (0.00, N/A, 0.0)	1122.5	N/A 0.0 0.0	20.1353 [20.0000]	100.7%			
NEtFOSE	(630.0 / 59.0) 152386	(10.67, 1.00) (0.01, N/A, 0.0)	1301.5	N/A 0.0 0.0	20.1781 [20.0000]	100.9%			
HFPO-DA	(285.0 / 169.0) 538547 (285.0 / 185.0) 1607015	(6.47, 1.00) (0.00, N/A, 0.1)	725.8 811.3	2.9840 117.0 106.8	10.0850 [10.0000]	100.8%			
ADONA	(377.0 / 85.0) 2115638 (377.0 / 251.0) 267257	(7.37, 1.14) (N/A, -0.07, 0.0)	701.9 504.9	0.1263 100.7 106.9	9.5568 [9.4270]	101.4%			
9CI-Pf3ONS	(531.0 / 351.0) 5633595 (533.0 / 353.0) 1782984	(9.70, 1.50) (N/A, -0.02, -0.1)	726.6 826.5	0.3165 99.9 106.8	8.9738 [9.3325]	96.2%			
11CI-PF3OUDS	(631.0 / 451.0) 4033488 (633.0 / 453.0) 1199088	(9.99, 1.55) (N/A, -0.02, 0.1)	1368.6 1340.2	0.2973 101.6 92.5	9.7505 [9.4321]	103.4%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 59538 (241.0 / 117.0) 105856	(4.46, 0.90) (N/A, -0.03, 0.0)	628.4 717.5	1.7780 0.1 102.1	17.2660 [20.0000]	86.3%			IR1,
5:3FTCA	(341.0 / 236.7) 500543 (341.0 / 217.0) 805806	(6.76, 1.10) (N/A, -0.04, 0.1)	545.2 578.8	1.6099 101.9 101.5	20.2842 [20.0000]	101.4%			
7:3FTCA	(441.0 / 317.0) 557545 (441.0 / 337.0) 457116	(8.57, 1.40) (N/A, -0.05, 0.0)	375.6 348.4	0.8199 100.8 95.0	20.0207 [20.0000]	100.1%			
PFEESA	(315.0 / 135.0) 1154243 (315.0 / 83.0) 346634	(6.58, 1.07) (N/A, -0.05, 0.0)	916.7 600.9	0.3003 106.3 112.8	9.2747 [8.9246]	103.9%			
PFMPA	(229.0 / 85.0) 194863	(4.17, 0.84) (N/A, -0.03, 0.0)	886.9	N/A 0.0 0.0	8.9798 [10.0000]	89.8%			
PFMBA	(279.0 / 85.0) 689245	(5.36, 1.08) (N/A, -0.04, 0.0)	897.6	N/A 0.0 0.0	9.7298 [10.0000]	97.3%			
NFDHA	(201.0 / 85.0) 22065 (295.0 / 201.0) 191915	(6.01, 0.98) (N/A, -0.05, 0.2)	379.5 675.0	8.6977 1.1 128.5	9.1271 [10.0000]	91.3%			IR1,
13C3_PFBA_IIS	(216.0 / 172.0) 74759	(3.67, N/A) (N/A, -0.03, N/A)	636.5	N/A	0.8551 [1.0000]	85.5% { 104.1% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 124776	(6.12, N/A) (N/A, -0.05, N/A)	894.8	N/A	0.9483 [1.0000]	94.8% { 106.8% }			
13C4_PFOA_IIS	(417.0 / 372.0) 123374	(7.87, N/A) (N/A, -0.06, N/A)	620.6	N/A	0.9857 [1.0000]	98.6% { 122.3% }			
13C5_PFNA_IIS	(468.0 / 423.0) 89586	(8.61, N/A) (N/A, -0.04, N/A)	346.9	N/A	0.8975 [1.0000]	89.7% { 92.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(515.1 / 470.1) 109489	(9.29, N/A) (N/A, -0.03, N/A)	277.2	N/A	1.0558 [1.0000]	105.6% { 159.9% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 229845	(7.99, N/A) (N/A, -0.06, N/A)	582.9	N/A	0.9715 [1.0000]	97.2% { 108.9% }			
13C4_PFOS_IIS	(502.8 / 79.9) 175386	(9.43, N/A) (N/A, -0.04, N/A)	273.2	N/A	0.8742 [1.0000]	87.4% { 110.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 591368	(3.67, N/A) (N/A, -0.03, N/A)	800.0	N/A	7.6404 [8.0000]	95.5% { 103.9% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 355210	(4.97, N/A) (N/A, -0.03, N/A)	726.0	N/A	3.8668 [4.0000]	96.7% { 109.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 267146	(6.12, N/A) (N/A, -0.05, N/A)	621.9	N/A	1.8187 [2.0000]	90.9% { 111.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 246765	(7.05, N/A) (N/A, -0.05, N/A)	622.7	N/A	1.9015 [2.0000]	95.1% { 111.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 254982	(7.87, N/A) (N/A, -0.06, N/A)	878.8	N/A	1.8704 [2.0000]	93.5% { 111.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 94704	(8.61, N/A) (N/A, -0.05, N/A)	403.8	N/A	0.9678 [1.0000]	96.8% { 115.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 117770	(9.28, N/A) (N/A, -0.05, N/A)	385.2	N/A	0.7938 [1.0000]	79.4% { 108.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 204264	(9.71, N/A) (N/A, -0.02, N/A)	393.7	N/A	0.9562 [1.0000]	95.6% { 134.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 203244	(9.88, N/A) (N/A, -0.02, N/A)	561.7	N/A	0.8437 [1.0000]	84.4% { 111.6% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 138193	(10.12, N/A) (N/A, -0.01, N/A)	351.8	N/A	0.9438 [1.0000]	94.4% { 122.7% }			
13C3_PFBs_EIS	(302.0 / 80.0) 701421	(6.08, N/A) (N/A, -0.05, N/A)	643.2	N/A	1.8685 [2.0000]	93.4% { 106.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 362239	(7.99, N/A) (N/A, -0.06, N/A)	576.4	N/A	1.8608 [2.0000]	93.0% { 105.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 581336	(9.43, N/A) (N/A, -0.03, N/A)	232.0	N/A	2.0178 [2.0000]	100.9% { 105.7% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 77793	(5.79, N/A) (N/A, -0.05, N/A)	561.0	N/A	3.6752 [4.0000]	91.9% { 92.3% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 95613	(7.53, N/A) (N/A, -0.07, N/A)	525.2	N/A	3.5248 [4.0000]	88.1% { 107.5% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 92498	(8.94, N/A) (N/A, -0.05, N/A)	333.6	N/A	3.8035 [4.0000]	95.1% { 105.1% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 876212	(10.16, N/A) (N/A, -0.01, N/A)	564.1	N/A	2.0897 [2.0000]	104.5% { 105.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 248573	(10.60, N/A) (N/A, -0.01, N/A)	1019.1	N/A	2.3797 [2.0000]	119.0% { 121.9% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 222505	(10.69, N/A) (N/A, -0.01, N/A)	1143.5	N/A	2.2812 [2.0000]	114.1% { 120.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 245192	(9.48, N/A) (N/A, -0.03, N/A)	408.9	N/A	3.6281 [4.0000]	90.7% { 104.1% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 254119	(9.66, N/A) (N/A, -0.03, N/A)	286.2	N/A	4.5244 [4.0000]	113.1% { 113.6% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 461915	(10.57, N/A) (N/A, -0.01, N/A)	700.0	N/A	22.9890 [20.0000]	114.9% { 135.0% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 236610	(10.67, N/A) (N/A, -0.01, N/A)	1082.7	N/A	21.8680 [20.0000]	109.3% { 119.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 699161	(6.46, N/A) (N/A, -0.05, N/A)	941.0	N/A	7.8178 [8.0000]	97.7% { 106.9% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SB03856
 Calibration: 2251019

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03856-ICB1	PFBA	0.00	ng/mL	0.75	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	0.00	ng/mL	0.10	U
	PFNA	0.00	ng/mL	0.10	U
	PFDA	0.00	ng/mL	0.10	U
	PFUnA	0.0155	ng/mL	0.10	U
	PFDOA	0.00	ng/mL	0.10	U
	PFTRDA	0.00	ng/mL	0.10	U
	PFTEDA	0.0246	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	0.0163	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	0.0182	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	0.0904	ng/mL	0.40	U
	NEtFOSE	0.0812	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: SB03856
 Calibration: 2251019

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03856-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	0.00	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	8.52	ng/mL		
	13C5-PFPEA	4.06	ng/mL		
	13C5-PFHXA	2.10	ng/mL		
	13C4-PFHPA	1.97	ng/mL		
	13C8-PFOA	2.24	ng/mL		
	13C9-PFNA	1.23	ng/mL		
	13C6-PFDA	0.983	ng/mL		
	13C7-PFUnA	1.03	ng/mL		
	13C2-PFDOA	0.958	ng/mL		
	13C2-PFTEDA	1.06	ng/mL		
	13C3-PFBS	2.26	ng/mL		
	13C3-PFHXS	2.33	ng/mL		
	13C8-PFOS	2.14	ng/mL		
	13C2-4:2FTS	4.06	ng/mL		
	13C2-6:2FTS	4.52	ng/mL		
	13C2-8:2FTS	4.26	ng/mL		
	13C8-PFOSA	2.41	ng/mL		
	D5-NETFOSA	2.65	ng/mL		
	D3-NMEFOSA	2.37	ng/mL		
	D3-NMEFOSAA	4.58	ng/mL		
	D5-NETFOSAA	5.61	ng/mL		
	D7-NMEFOSE	25.1	ng/mL		
	D9-NETFOSAE	25.3	ng/mL		
	13C3-HFPO-DA	8.83	ng/mL		



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03856-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-15A
 Path: S2022-12-15A (9)
 Acquired: 2022/12/15 - 14:15

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	(212.9 / 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	(262.9 / 219.0) N/A (262.9 / 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) 2368 (563.0 / 169.0) 265	(9.71, 1.00) (-0.01, N/A, 1.3)	11.9 355.1	0.1121 100.1 100.1	0.0155	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) 3421 (713.0 / 169.0) 1579	(10.14, 1.00) (0.01, N/A, 0.2)	23.3 154.7	0.4614 203.3 203.3	0.0246	N/A			IR2,



Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03856-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-15A
 Path: S2022-12-15A (9)
 Acquired: 2022/12/15 - 14:15

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	(298.9 / 80.0) N/A (298.9 / 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) 5322 (499.0 / 99.0) 2218	(9.45 , 1.00) (-0.01 , N/A , -2.2)	21.2 13.6	0.4168 182.4 182.4	0.0163	N/A			IR2,
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	(698.9 / 80.0) N/A (698.9 / 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: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03856-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-15A
 Path: S2022-12-15A (9)
 Acquired: 2022/12/15 - 14:15

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT-CV[min], Δ 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) 8813 (498.0 / 478.0) N/A	(10.16 , 1.00) (-0.02 , N/A , #Value!)	25.1 N/A	N/A 0.0 0.0	0.0182	N/A			
NMeFOSA	(511.9 / 219.0) N/A (511.9 / 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) 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			
NEIFOSAA	(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	(616.1 / 59.0) 2788	(10.58 , 1.00) (0.01 , N/A , 0.0)	32.7	N/A 0.0 0.0	0.0904	N/A			
NEIFOSE	(630.0 / 59.0) 679	(10.68 , 1.00) (0.01 , N/A , 0.0)	20.6	N/A 0.0 0.0	0.0812	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			

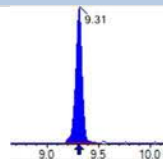
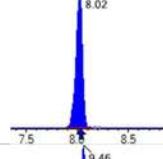
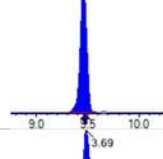
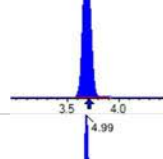
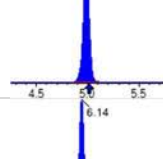
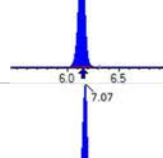
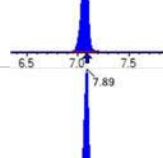
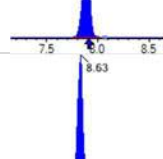
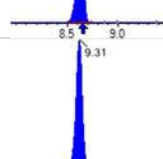
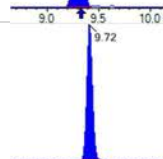



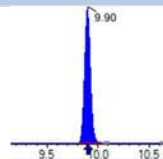
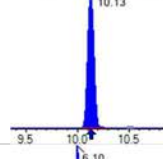
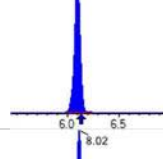
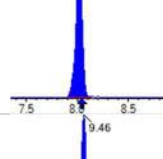
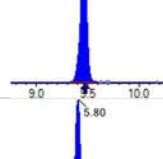
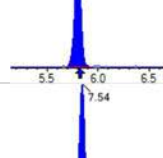
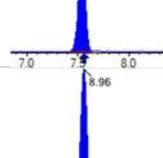
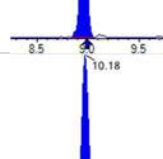
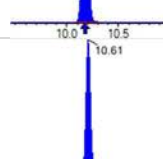
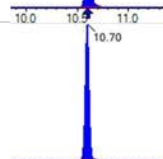

Chemist: DAG
 Instrument: Saphira
 Type: Sciex Q3 5500

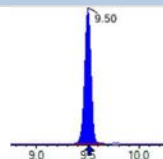
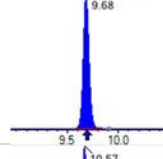
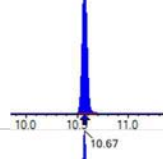
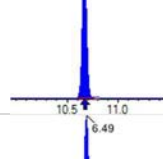
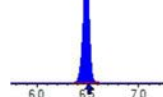
Sample I.D.: SB03856-ICB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - 2022-12-15A
 Path: S2022-12-15A (9)
 Acquired: 2022/12/15 - 14:15

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(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) 79325	(3.69, N/A) (N/A, -0.02, N/A)	625.0	N/A	0.9073 [1.0000]	90.7% { 86.0% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 123371	(6.14, N/A) (N/A, -0.02, N/A)	481.2	N/A	0.9376 [1.0000]	93.8% { 98.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 107121	(7.89, N/A) (N/A, -0.02, N/A)	429.8	N/A	0.8558 [1.0000]	85.6% { 84.2% }			
13C5_PFNxA_IIS	(468.0 / 423.0) 79969	(8.62, N/A) (N/A, -0.02, N/A)	329.4	N/A	0.8012 [1.0000]	80.1% { 72.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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	(515.1 / 470.1) 102447	(9.31, N/A) (N/A, -0.01, N/A)	292.7	N/A	0.9879 [1.0000]	98.8% { 104.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 204239	(8.02, N/A) (N/A, -0.02, N/A)	592.8	N/A	0.8633 [1.0000]	86.3% { 80.8% }			
13C4_PFOS_IIS	(502.8 / 79.9) 168317	(9.46, N/A) (N/A, -0.02, N/A)	420.6	N/A	0.8390 [1.0000]	83.9% { 76.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 700019	(3.69, N/A) (N/A, -0.02, N/A)	779.8	N/A	8.5236 [8.0000]	106.5% { 96.6% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 368858	(4.99, N/A) (N/A, -0.03, N/A)	810.4	N/A	4.0611 [4.0000]	101.5% { 97.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 305353	(6.14, N/A) (N/A, -0.02, N/A)	766.5	N/A	2.1025 [2.0000]	105.1% { 100.7% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 253262	(7.07, N/A) (N/A, -0.03, N/A)	692.2	N/A	1.9738 [2.0000]	98.7% { 92.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 264665	(7.89, N/A) (N/A, -0.02, N/A)	517.1	N/A	2.2359 [2.0000]	111.8% { 104.5% }			
13C9_PFNA_EIS	(472.0 / 427.0) 107397	(8.63, N/A) (N/A, -0.02, N/A)	488.4	N/A	1.2295 [1.0000]	122.9% { 102.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 136506	(9.31, N/A) (N/A, -0.02, N/A)	345.5	N/A	0.9833 [1.0000]	98.3% { 95.7% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 205614	(9.72, N/A) (N/A, 0.00, N/A)	807.0	N/A	1.0287 [1.0000]	102.9% { 109.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 215918	(9.90, N/A) (N/A, 0.00, N/A)	349.4	N/A	0.9579 [1.0000]	95.8% { 100.1% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 145042	(10.13, N/A) (N/A, 0.00, N/A)	329.7	N/A	1.0587 [1.0000]	105.9% { 119.9% }			
13C3_PFBs_EIS	(302.0 / 80.0) 752754	(6.10, N/A) (N/A, -0.03, N/A)	956.2	N/A	2.2567 [2.0000]	112.8% { 99.2% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 403724	(8.02, N/A) (N/A, -0.02, N/A)	759.9	N/A	2.3339 [2.0000]	116.7% { 104.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 592394	(9.46, N/A) (N/A, -0.01, N/A)	322.3	N/A	2.1425 [2.0000]	107.1% { 88.7% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 76281	(5.80, N/A) (N/A, -0.03, N/A)	483.1	N/A	4.0556 [4.0000]	101.4% { 86.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 109033	(7.54, N/A) (N/A, -0.02, N/A)	520.1	N/A	4.5234 [4.0000]	113.1% { 102.1% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 92104	(8.96, N/A) (N/A, -0.03, N/A)	286.5	N/A	4.2622 [4.0000]	106.6% { 97.5% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 971045	(10.18, N/A) (N/A, 0.00, N/A)	717.2	N/A	2.4132 [2.0000]	120.7% { 99.8% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 237698	(10.61, N/A) (N/A, 0.00, N/A)	943.5	N/A	2.3712 [2.0000]	118.6% { 99.0% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 247829	(10.70, N/A) (N/A, 0.00, N/A)	1028.3	N/A	2.6475 [2.0000]	132.4% { 107.7% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 296955	(9.50 , N/A) (N/A , -0.02 , N/A)	366.2	N/A	4.5785 [4.0000]	114.5% { 104.2% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 302168	(9.68 , N/A) (N/A , -0.01 , N/A)	431.7	N/A	5.6058 [4.0000]	140.1% { 118.0% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 484298	(10.57 , N/A) (N/A , 0.00 , N/A)	859.4	N/A	25.1152 [20.0000]	125.6% { 96.7% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 262232	(10.67 , N/A) (N/A , 0.00 , N/A)	1242.2	N/A	25.2539 [20.0000]	126.3% { 99.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 780707	(6.49 , N/A) (N/A , -0.02 , N/A)	898.1	N/A	8.8290 [8.0000]	110.4% { 105.0% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SB03903
 Calibration: 2251019

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03903-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	0.00	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	0.00	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	0.00	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: SB03903
 Calibration: 2251019

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

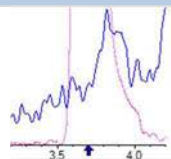
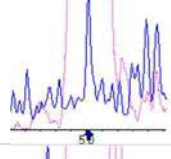
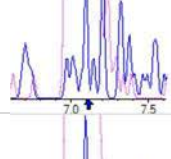
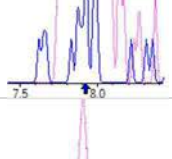
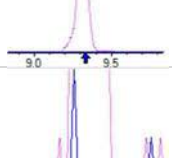
Lab Sample ID	Analyte	Found	Units	RL	C
SB03903-CCB1	PFMBA	0.00	ng/mL	0.20	U
	NFDHA	0.00	ng/mL	0.20	U
	9CL-PF3ONS	0.00	ng/mL	0.20	U
	11CL-PF3OUDS	0.00	ng/mL	0.20	U
	3:3FTCA	0.00	ng/mL	0.40	U
	5:3FTCA	0.00	ng/mL	0.40	U
	7:3FTCA	0.00	ng/mL	0.40	U
	13C4-PFBA	7.68	ng/mL		
	13C5-PFPEA	4.04	ng/mL		
	13C5-PFHXA	1.89	ng/mL		
	13C4-PFHPA	1.87	ng/mL		
	13C8-PFOA	1.79	ng/mL		
	13C9-PFNA	0.944	ng/mL		
	13C6-PFDA	1.03	ng/mL		
	13C7-PFUnA	0.941	ng/mL		
	13C2-PFDOA	0.909	ng/mL		
	13C2-PFTEDA	0.866	ng/mL		
	13C3-PFBS	2.10	ng/mL		
	13C3-PFHXS	2.06	ng/mL		
	13C8-PFOS	1.88	ng/mL		
	13C2-4:2FTS	4.45	ng/mL		
	13C2-6:2FTS	4.26	ng/mL		
	13C2-8:2FTS	4.82	ng/mL		
	13C8-PFOSA	1.85	ng/mL		
	D5-NETFOSA	1.94	ng/mL		
	D3-NMEFOSA	1.72	ng/mL		
	D3-NMEFOSAA	3.80	ng/mL		
	D5-NETFOSAA	4.08	ng/mL		
	D7-NMEFOSE	19.4	ng/mL		
	D9-NETFOSAE	18.4	ng/mL		
	13C3-HFPO-DA	8.11	ng/mL		



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (1)
 Acquired: 2022/12/20 - 09:40

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	(212.9 / 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	(262.9 / 219.0) N/A (262.9 / 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			



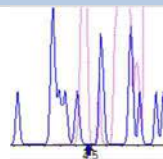
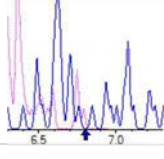
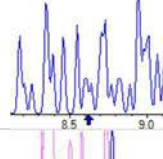
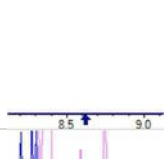
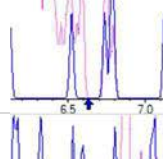
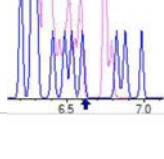
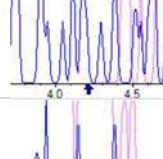
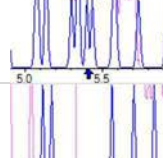
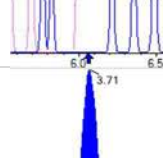
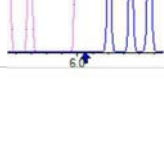
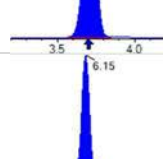
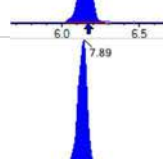
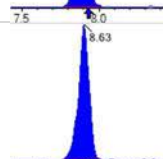

Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

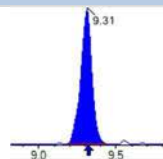
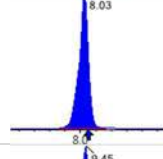
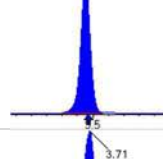
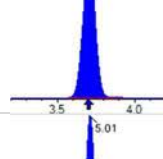
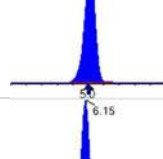
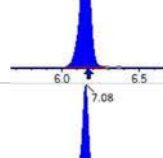
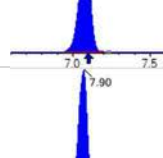
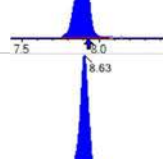
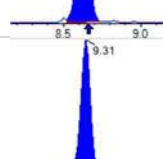
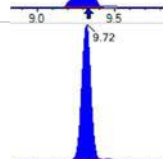
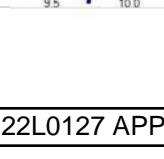
Sample I.D.: SB03903-CCB1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

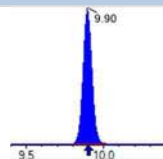
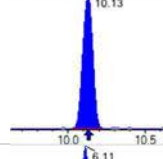
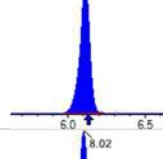
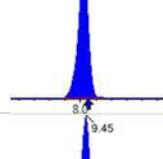
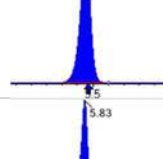
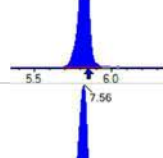
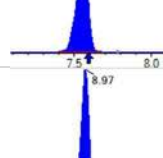
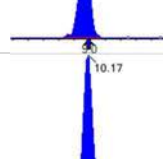
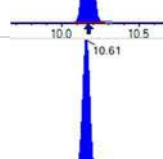
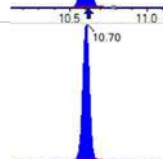
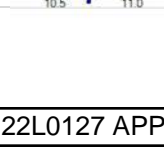
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 Path: S2022-12-20A (1)
 Acquired: 2022/12/20 - 09:40

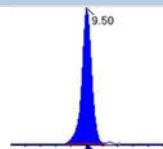
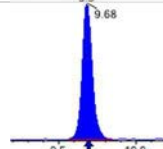
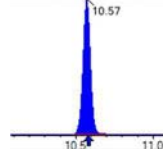
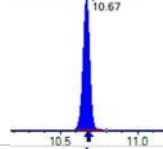
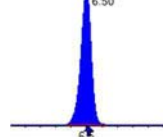
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (ΔRT-Imin, ΔRT-CVmin, ΔRT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration True ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) N/A (298.9 / 99.0) N/A	(N/A, N/A) (N/A, N/A, N/A)	N/A N/A	N/A 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	(698.9 / 80.0) N/A (698.9 / 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-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
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	(511.9 / 219.0) N/A (511.9 / 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	(616.1 / 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.) (Δ RT-Imin, Δ RT-CVmin, Δ 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	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(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) 73016	(3.71, N/A) (N/A, 0.01, N/A)	602.1	N/A	0.8351 [1.0000]	83.5% { 101.7% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 114135	(6.15, N/A) (N/A, -0.02, N/A)	569.7	N/A	0.8674 [1.0000]	86.7% { 97.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 103024	(7.89, N/A) (N/A, -0.03, N/A)	537.3	N/A	0.8231 [1.0000]	82.3% { 102.1% }			
13C5_PFNA_IIS	(468.0 / 423.0) 84856	(8.63, N/A) (N/A, -0.02, N/A)	351.4	N/A	0.8501 [1.0000]	85.0% { 87.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ 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	(515.1 / 470.1) 84405	(9.31, N/A) (N/A, -0.01, N/A)	222.6	N/A	0.8139 [1.0000]	81.4% {123.2%}			
18O2_PFHxS_IIS	(403.0 / 83.9) 190684	(8.03, N/A) (N/A, -0.03, N/A)	673.5	N/A	0.8060 [1.0000]	80.6% {90.3%}			
13C4_PFOS_IIS	(502.8 / 79.9) 166756	(9.45, N/A) (N/A, -0.02, N/A)	399.6	N/A	0.8312 [1.0000]	83.1% {104.8%}			
13C4_PFBA_EIS	(217.0 / 172.0) 580201	(3.71, N/A) (N/A, 0.01, N/A)	821.1	N/A	7.6751 [8.0000]	95.9% {102.0%}			
13C5_PFPeA_EIS	(267.9 / 223.0) 339806	(5.01, N/A) (N/A, 0.01, N/A)	691.9	N/A	4.0440 [4.0000]	101.1% {104.6%}			
13C5_PFHxA_EIS	(318.0 / 273.0) 253749	(6.15, N/A) (N/A, -0.02, N/A)	585.3	N/A	1.8886 [2.0000]	94.4% {106.3%}			
13C4_PFHpA_EIS	(367.0 / 322.0) 221973	(7.08, N/A) (N/A, -0.02, N/A)	671.5	N/A	1.8699 [2.0000]	93.5% {100.4%}			
13C8_PFOA_EIS	(421.0 / 376.0) 203984	(7.90, N/A) (N/A, -0.03, N/A)	644.0	N/A	1.7918 [2.0000]	89.6% {88.8%}			
13C9_PFNA_EIS	(472.0 / 427.0) 87532	(8.63, N/A) (N/A, -0.02, N/A)	275.2	N/A	0.9444 [1.0000]	94.4% {106.6%}			
13C6_PFDA_EIS	(519.0 / 474.0) 118214	(9.31, N/A) (N/A, -0.02, N/A)	370.6	N/A	1.0336 [1.0000]	103.4% {109.4%}			
13C7_PFUnA_EIS	(570.0 / 525.0) 155027	(9.72, N/A) (N/A, -0.01, N/A)	374.2	N/A	0.9414 [1.0000]	94.1% {102.2%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ 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) 168877	(9.90, N/A) (N/A, 0.00, N/A)	441.0	N/A	0.9093 [1.0000]	90.9% {92.7%}			
13C2_PFTeDA_EIS	(715.0 / 670.0) 97804	(10.13, N/A) (N/A, 0.00, N/A)	271.1	N/A	0.8665 [1.0000]	86.6% {86.8%}			
13C3_PFBs_EIS	(302.0 / 80.0) 652551	(6.11, N/A) (N/A, -0.02, N/A)	659.7	N/A	2.0954 [2.0000]	104.8% {98.6%}			
13C3_PFHxS_EIS	(402.0 / 80.0) 333455	(8.02, N/A) (N/A, -0.03, N/A)	777.1	N/A	2.0647 [2.0000]	103.2% {97.1%}			
13C8_PFOS_EIS	(507.0 / 80.0) 513959	(9.45, N/A) (N/A, -0.01, N/A)	476.7	N/A	1.8763 [2.0000]	93.8% {93.5%}			
13C2_4:2FTS_EIS	(329.0 / 81.0) 78111	(5.83, N/A) (N/A, -0.02, N/A)	468.6	N/A	4.4481 [4.0000]	111.2% {92.7%}			
13C2_6:2FTS_EIS	(429.0 / 81.0) 95773	(7.56, N/A) (N/A, -0.03, N/A)	550.2	N/A	4.2558 [4.0000]	106.4% {107.7%}			
13C2_8:2FTS_EIS	(529.0 / 81.0) 97194	(8.97, N/A) (N/A, -0.02, N/A)	459.2	N/A	4.8174 [4.0000]	120.4% {110.4%}			
13C8_PFOA_EIS	(506.0 / 78.0) 738801	(10.17, N/A) (N/A, -0.01, N/A)	511.0	N/A	1.8532 [2.0000]	92.7% {88.6%}			
D3_NMeFOA_EIS	(515.0 / 169.0) 170971	(10.61, N/A) (N/A, -0.01, N/A)	877.9	N/A	1.7215 [2.0000]	86.1% {83.9%}			
D5_NEtFOA_EIS	(531.1 / 169.0) 179819	(10.70, N/A) (N/A, -0.01, N/A)	1224.8	N/A	1.9390 [2.0000]	96.9% {97.3%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-Imin, Δ RT-CVmin, Δ 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) 244454	(9.50, N/A) (N/A, -0.01, N/A)	390.4	N/A	3.8044 [4.0000]	95.1% {103.7%}			
D5_EtFOSAA_EIS	(589.0 / 419.0) 217848	(9.68, N/A) (N/A, -0.01, N/A)	267.7	N/A	4.0793 [4.0000]	102.0% {97.3%}			
D7_NMeFOSE_EIS	(623.2 / 58.9) 370086	(10.57, N/A) (N/A, -0.01, N/A)	971.7	N/A	19.3720 [20.0000]	96.9% {108.1%}			
D9_NEtFOSE_EIS	(639.2 / 58.9) 189115	(10.67, N/A) (N/A, -0.01, N/A)	1192.2	N/A	18.3829 [20.0000]	91.9% {95.3%}			
13C3_HFPODA_EIS	(287.0 / 169.0) 663358	(6.50, N/A) (N/A, -0.02, N/A)	1024.2	N/A	8.1090 [8.0000]	101.4% {101.4%}			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SB03903
 Calibration: 2251019

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03903-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	0.00	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	0.00	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	0.00	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: SB03903
 Calibration: 2251019

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03903-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	7.69	ng/mL		
	13C5-PFPEA	4.24	ng/mL		
	13C5-PFHXA	2.04	ng/mL		
	13C4-PFHPA	2.05	ng/mL		
	13C8-PFOA	2.13	ng/mL		
	13C9-PFNA	0.910	ng/mL		
	13C6-PFDA	1.11	ng/mL		
	13C7-PFUnA	0.906	ng/mL		
	13C2-PFDOA	0.906	ng/mL		
	13C2-PFTEDA	0.969	ng/mL		
	13C3-PFBS	2.18	ng/mL		
	13C3-PFHXS	2.09	ng/mL		
	13C8-PFOS	2.27	ng/mL		
	13C2-4:2FTS	5.05	ng/mL		
	13C2-6:2FTS	4.02	ng/mL		
	13C2-8:2FTS	4.25	ng/mL		
	13C8-PFOSA	2.09	ng/mL		
	D5-NETFOSA	2.19	ng/mL		
	D3-NMEFOSA	2.23	ng/mL		
	D3-NMEFOSAA	4.03	ng/mL		
	D5-NETFOSAA	4.63	ng/mL		
	D7-NMEFOSE	22.4	ng/mL		
	D9-NETFOSAE	18.8	ng/mL		
	13C3-HFPO-DA	8.41	ng/mL		



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (4)
 Acquired: 2022/12/20 - 10:43

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	(212.9 / 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	(262.9 / 219.0) N/A (262.9 / 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: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (4)
 Acquired: 2022/12/20 - 10:43

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(298.9 / 80.0) N/A (298.9 / 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	(698.9 / 80.0) N/A (698.9 / 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			

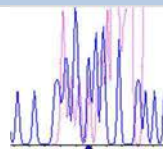
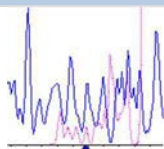
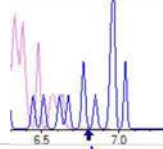
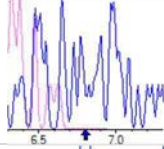
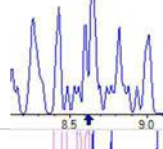
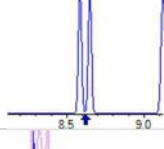
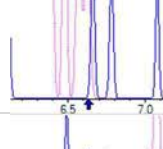
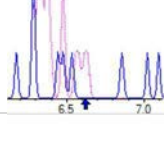
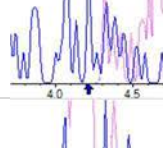
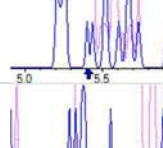
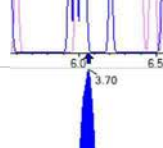
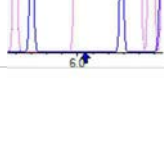
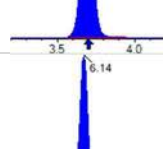
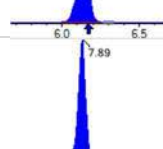
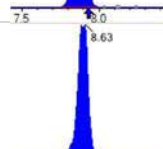



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (4)
 Acquired: 2022/12/20 - 10:43

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(511.9 / 219.0) N/A (511.9 / 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	(616.1 / 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.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(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) 81338	(3.70, N/A) (N/A, 0.00, N/A)	613.7	N/A	0.9303 [1.0000]	93.0% { 113.3% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 111867	(6.14, N/A) (N/A, -0.03, N/A)	441.1	N/A	0.8502 [1.0000]	85.0% { 95.7% }			
13C4_PFOA_IIS	(417.0 / 372.0) 104478	(7.89, N/A) (N/A, -0.04, N/A)	663.8	N/A	0.8347 [1.0000]	83.5% { 103.6% }			
13C5_PFNA_IIS	(468.0 / 423.0) 89495	(8.63, N/A) (N/A, -0.03, N/A)	179.2	N/A	0.8966 [1.0000]	89.7% { 92.1% }			

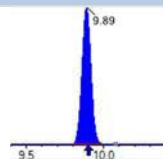
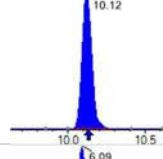
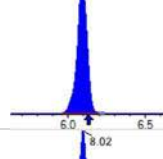
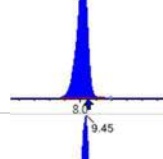
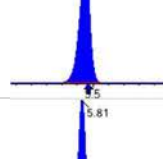
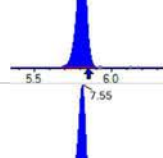
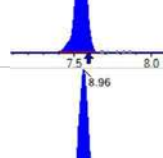
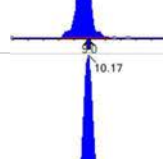
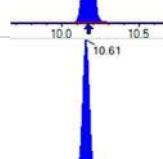
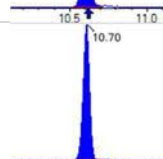



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (4)
 Acquired: 2022/12/20 - 10:43

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
13C2_PFDA_IIS	(515.1 / 470.1) 88040	(9.31, N/A) (N/A, -0.01, N/A)	273.5	N/A	0.8490 [1.0000]	84.9% { 128.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 198404	(8.01, N/A) (N/A, -0.04, N/A)	635.9	N/A	0.8386 [1.0000]	83.9% { 94.0% }			
13C4_PFOS_IIS	(502.8 / 79.9) 152039	(9.46, N/A) (N/A, -0.01, N/A)	362.3	N/A	0.7578 [1.0000]	75.8% { 95.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 647261	(3.69, N/A) (N/A, -0.01, N/A)	867.8	N/A	7.6862 [8.0000]	96.1% { 113.7% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 349069	(4.99, N/A) (N/A, -0.01, N/A)	691.2	N/A	4.2384 [4.0000]	106.0% { 107.4% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 269251	(6.14, N/A) (N/A, -0.03, N/A)	714.9	N/A	2.0446 [2.0000]	102.2% { 112.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 238179	(7.07, N/A) (N/A, -0.03, N/A)	638.1	N/A	2.0471 [2.0000]	102.4% { 107.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 245621	(7.89, N/A) (N/A, -0.04, N/A)	672.5	N/A	2.1276 [2.0000]	106.4% { 106.9% }			
13C9_PFNA_EIS	(472.0 / 427.0) 88976	(8.63, N/A) (N/A, -0.03, N/A)	382.1	N/A	0.9102 [1.0000]	91.0% { 108.4% }			
13C6_PFDA_EIS	(519.0 / 474.0) 132262	(9.31, N/A) (N/A, -0.03, N/A)	315.7	N/A	1.1087 [1.0000]	110.9% { 122.4% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 155672	(9.71, N/A) (N/A, -0.01, N/A)	252.9	N/A	0.9063 [1.0000]	90.6% { 102.6% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 175540	(9.89, N/A) (N/A, -0.01, N/A)	756.0	N/A	0.9062 [1.0000]	90.6% { 96.4% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 114132	(10.12, N/A) (N/A, -0.01, N/A)	372.9	N/A	0.9694 [1.0000]	96.9% { 101.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 704812	(6.09, N/A) (N/A, -0.04, N/A)	646.4	N/A	2.1751 [2.0000]	108.8% { 106.5% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 350759	(8.02, N/A) (N/A, -0.04, N/A)	687.3	N/A	2.0873 [2.0000]	104.4% { 102.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 567298	(9.45, N/A) (N/A, -0.02, N/A)	573.7	N/A	2.2714 [2.0000]	113.6% { 103.2% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 92310	(5.81, N/A) (N/A, -0.03, N/A)	536.0	N/A	5.0522 [4.0000]	126.3% { 109.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 94034	(7.55, N/A) (N/A, -0.04, N/A)	640.0	N/A	4.0159 [4.0000]	100.4% { 105.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 89192	(8.96, N/A) (N/A, -0.03, N/A)	326.9	N/A	4.2488 [4.0000]	106.2% { 101.4% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 760755	(10.17, N/A) (N/A, -0.01, N/A)	886.8	N/A	2.0930 [2.0000]	104.6% { 91.2% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 202035	(10.61, N/A) (N/A, -0.01, N/A)	812.3	N/A	2.2312 [2.0000]	111.6% { 99.1% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 185266	(10.70, N/A) (N/A, -0.01, N/A)	997.3	N/A	2.1911 [2.0000]	109.6% { 100.3% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB2
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (4)
 Acquired: 2022/12/20 - 10:43

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
D3_MeFOSAA_EIS	(573.0 / 419.0) 236246	(9.49, N/A) (N/A, -0.02, N/A)	296.8	N/A	4.0325 [4.0000]	100.8% { 100.3% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 225660	(9.68, N/A) (N/A, -0.01, N/A)	332.8	N/A	4.6346 [4.0000]	115.9% { 100.8% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 389591	(10.57, N/A) (N/A, -0.01, N/A)	783.8	N/A	22.3670 [20.0000]	111.8% { 113.8% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 176627	(10.67, N/A) (N/A, -0.01, N/A)	1160.0	N/A	18.8310 [20.0000]	94.2% { 89.0% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 674379	(6.49, N/A) (N/A, -0.03, N/A)	751.5	N/A	8.4109 [8.0000]	105.1% { 103.1% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SB03903
 Calibration: 2251019

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03903-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	0.00	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	0.00	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	0.00	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: SB03903
 Calibration: 2251019

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03903-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	7.87	ng/mL		
	13C5-PFPEA	3.88	ng/mL		
	13C5-PFHXA	1.96	ng/mL		
	13C4-PFHPA	1.94	ng/mL		
	13C8-PFOA	1.85	ng/mL		
	13C9-PFNA	1.00	ng/mL		
	13C6-PFDA	1.13	ng/mL		
	13C7-PFUnA	1.18	ng/mL		
	13C2-PFDOA	1.23	ng/mL		
	13C2-PFTEDA	1.03	ng/mL		
	13C3-PFBS	2.12	ng/mL		
	13C3-PFHXS	2.19	ng/mL		
	13C8-PFOS	2.34	ng/mL		
	13C2-4:2FTS	4.56	ng/mL		
	13C2-6:2FTS	3.74	ng/mL		
	13C2-8:2FTS	3.70	ng/mL		
	13C8-PFOSA	2.11	ng/mL		
	D5-NETFOSA	2.31	ng/mL		
	D3-NMEFOSA	2.36	ng/mL		
	D3-NMEFOSAA	4.88	ng/mL		
	D5-NETFOSAA	5.06	ng/mL		
	D7-NMEFOSE	23.1	ng/mL		
	D9-NETFOSAE	23.9	ng/mL		
	13C3-HFPO-DA	8.42	ng/mL		



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (5)
 Acquired: 2022/12/20 - 10:56

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	(212.9 / 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	(262.9 / 219.0) N/A (262.9 / 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			
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: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (5)
 Acquired: 2022/12/20 - 10:56

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(298.9 / 80.0) N/A (298.9 / 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	(698.9 / 80.0) N/A (698.9 / 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: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (5)
 Acquired: 2022/12/20 - 10:56

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			
NMeFOFA	(511.9 / 219.0) N/A (511.9 / 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			
NEtFOFA	(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	(616.1 / 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			

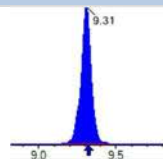
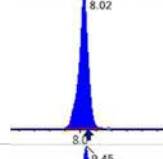
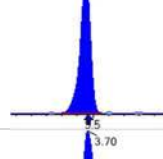
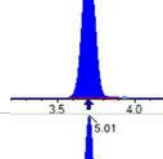
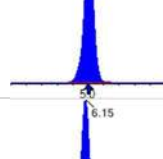
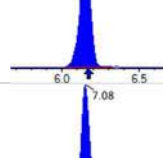
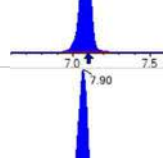
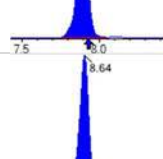
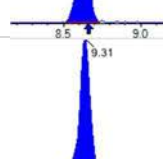
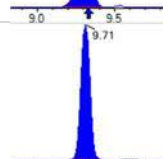
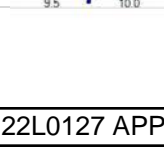


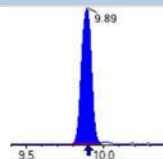
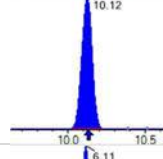
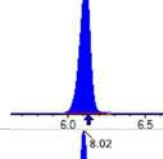
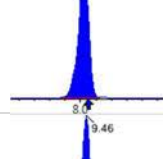
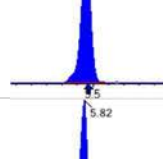
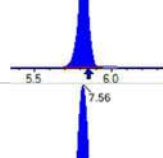
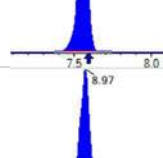
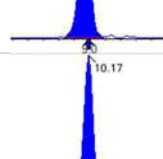
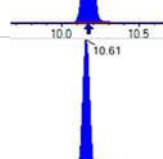
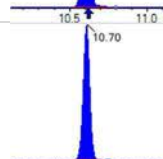
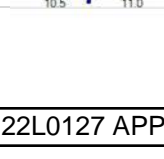
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

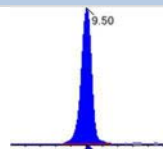
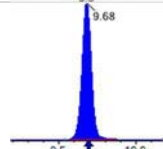
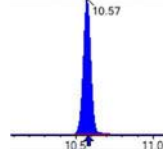
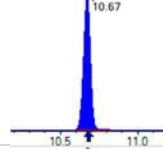
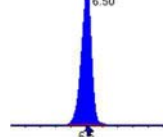
Sample I.D.: SB03903-CCB3
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (5)
 Acquired: 2022/12/20 - 10:56

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) 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	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(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) 75421	(3.70, N/A) (N/A, 0.00, N/A)	565.5	N/A	0.8626 [1.0000]	86.3% { 105.0% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 121518	(6.15, N/A) (N/A, -0.02, N/A)	493.1	N/A	0.9236 [1.0000]	92.4% { 104.0% }			
13C4_PFOA_IIS	(417.0 / 372.0) 107738	(7.90, N/A) (N/A, -0.02, N/A)	533.2	N/A	0.8607 [1.0000]	86.1% { 106.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 86697	(8.63, N/A) (N/A, -0.02, N/A)	217.6	N/A	0.8686 [1.0000]	86.9% { 89.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(515.1 / 470.1) 74465	(9.31, N/A) (N/A, -0.01, N/A)	475.1	N/A	0.7181 [1.0000]	71.8% { 108.7% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 201715	(8.02, N/A) (N/A, -0.03, N/A)	716.6	N/A	0.8526 [1.0000]	85.3% { 95.6% }			
13C4_PFOS_IIS	(502.8 / 79.9) 153961	(9.45, N/A) (N/A, -0.01, N/A)	242.3	N/A	0.7674 [1.0000]	76.7% { 96.8% }			
13C4_PFBA_EIS	(217.0 / 172.0) 614330	(3.70, N/A) (N/A, 0.00, N/A)	853.3	N/A	7.8675 [8.0000]	98.3% { 108.0% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 346796	(5.01, N/A) (N/A, 0.00, N/A)	769.0	N/A	3.8764 [4.0000]	96.9% { 106.7% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 280631	(6.15, N/A) (N/A, -0.02, N/A)	631.8	N/A	1.9618 [2.0000]	98.1% { 117.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 244668	(7.08, N/A) (N/A, -0.02, N/A)	600.8	N/A	1.9359 [2.0000]	96.8% { 110.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 220435	(7.90, N/A) (N/A, -0.03, N/A)	624.8	N/A	1.8516 [2.0000]	92.6% { 96.0% }			
13C9_PFNA_EIS	(472.0 / 427.0) 94849	(8.64, N/A) (N/A, -0.02, N/A)	434.3	N/A	1.0016 [1.0000]	100.2% { 115.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 113608	(9.31, N/A) (N/A, -0.02, N/A)	322.3	N/A	1.1259 [1.0000]	112.6% { 105.1% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 171820	(9.71, N/A) (N/A, -0.01, N/A)	269.7	N/A	1.1826 [1.0000]	118.3% { 113.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 200777	(9.89, N/A) (N/A, -0.01, N/A)	349.8	N/A	1.2254 [1.0000]	122.5% { 110.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 102875	(10.12, N/A) (N/A, -0.01, N/A)	364.1	N/A	1.0331 [1.0000]	103.3% { 91.3% }			
13C3_PFBs_EIS	(302.0 / 80.0) 697782	(6.11, N/A) (N/A, -0.02, N/A)	675.1	N/A	2.1181 [2.0000]	105.9% { 105.4% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 374994	(8.02, N/A) (N/A, -0.03, N/A)	636.7	N/A	2.1949 [2.0000]	109.7% { 109.2% }			
13C8_PFOS_EIS	(507.0 / 80.0) 591425	(9.46, N/A) (N/A, -0.01, N/A)	480.4	N/A	2.3385 [2.0000]	116.9% { 107.5% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 84731	(5.82, N/A) (N/A, -0.02, N/A)	462.4	N/A	4.5612 [4.0000]	114.0% { 100.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 88958	(7.56, N/A) (N/A, -0.04, N/A)	492.2	N/A	3.7368 [4.0000]	93.4% { 100.0% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 79041	(8.97, N/A) (N/A, -0.02, N/A)	267.5	N/A	3.7034 [4.0000]	92.6% { 89.8% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 775688	(10.17, N/A) (N/A, 0.00, N/A)	818.3	N/A	2.1074 [2.0000]	105.4% { 93.0% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 216284	(10.61, N/A) (N/A, -0.01, N/A)	706.9	N/A	2.3587 [2.0000]	117.9% { 106.1% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 198065	(10.70, N/A) (N/A, -0.01, N/A)	889.3	N/A	2.3132 [2.0000]	115.7% { 107.2% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 289376	(9.50, N/A) (N/A, -0.01, N/A)	425.4	N/A	4.8777 [4.0000]	121.9% { 122.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 249553	(9.68, N/A) (N/A, -0.01, N/A)	382.0	N/A	5.0614 [4.0000]	126.5% { 111.5% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 407806	(10.57, N/A) (N/A, 0.00, N/A)	912.5	N/A	23.1204 [20.0000]	115.6% { 119.2% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 227019	(10.67, N/A) (N/A, 0.00, N/A)	1000.2	N/A	23.9013 [20.0000]	119.5% { 114.3% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 733616	(6.50, N/A) (N/A, -0.01, N/A)	786.4	N/A	8.4230 [8.0000]	105.3% { 112.2% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SB03903
 Calibration: 2251019

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03903-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	0.00	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	0.00	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	0.00	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: SB03903
 Calibration: 2251019

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03903-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	8.08	ng/mL		
	13C5-PFPEA	3.88	ng/mL		
	13C5-PFHXA	2.01	ng/mL		
	13C4-PFHPA	1.99	ng/mL		
	13C8-PFOA	1.93	ng/mL		
	13C9-PFNA	1.07	ng/mL		
	13C6-PFDA	1.06	ng/mL		
	13C7-PFUnA	1.22	ng/mL		
	13C2-PFDOA	1.11	ng/mL		
	13C2-PFTEDA	1.18	ng/mL		
	13C3-PFBS	2.09	ng/mL		
	13C3-PFHXS	2.15	ng/mL		
	13C8-PFOS	1.87	ng/mL		
	13C2-4:2FTS	4.50	ng/mL		
	13C2-6:2FTS	3.77	ng/mL		
	13C2-8:2FTS	4.55	ng/mL		
	13C8-PFOSA	1.86	ng/mL		
	D5-NETFOSA	2.22	ng/mL		
	D3-NMEFOSA	2.03	ng/mL		
	D3-NMEFOSAA	3.42	ng/mL		
	D5-NETFOSAA	3.76	ng/mL		
	D7-NMEFOSE	21.6	ng/mL		
	D9-NETFOSAE	20.4	ng/mL		
	13C3-HFPO-DA	8.34	ng/mL		



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (23)
 Acquired: 2022/12/20 - 14:45

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
PFBA	(212.9 / 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	(262.9 / 219.0) N/A (262.9 / 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: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (23)
 Acquired: 2022/12/20 - 14:45

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
PFBS	(298.9 / 80.0) N/A (298.9 / 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	(698.9 / 80.0) N/A (698.9 / 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: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (23)
 Acquired: 2022/12/20 - 14:45

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(511.9 / 219.0) N/A (511.9 / 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	(616.1 / 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			

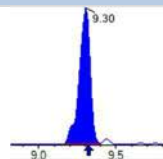
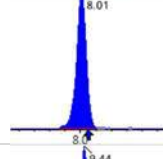
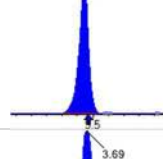
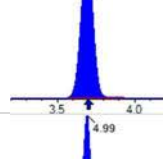
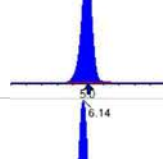
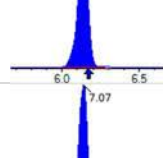
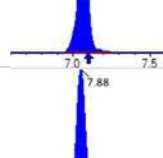
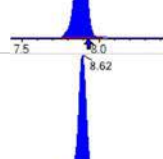
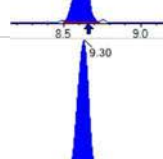
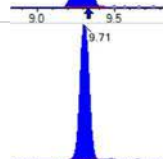
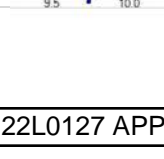


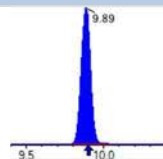
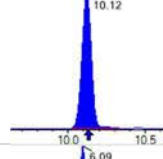
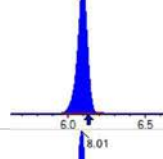
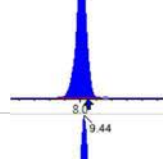
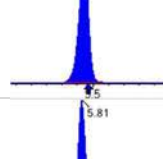
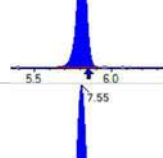
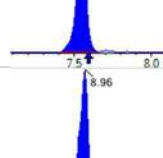
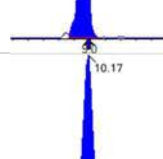
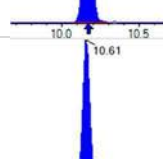
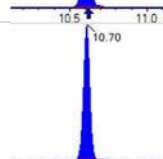
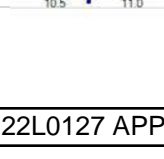
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

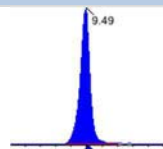
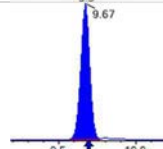
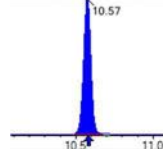
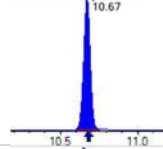
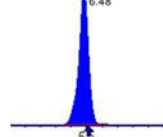
Sample I.D.: SB03903-CCB4
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (23)
 Acquired: 2022/12/20 - 14:45

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
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	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(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) 70533	(3.69, N/A) (N/A, -0.01, N/A)	733.7	N/A	0.8067 [1.0000]	80.7% { 98.2% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 117302	(6.14, N/A) (N/A, -0.03, N/A)	528.7	N/A	0.8915 [1.0000]	89.2% { 100.4% }			
13C4_PFOA_IIS	(417.0 / 372.0) 107040	(7.89, N/A) (N/A, -0.04, N/A)	760.4	N/A	0.8552 [1.0000]	85.5% { 106.1% }			
13C5_PFNA_IIS	(468.0 / 423.0) 81118	(8.62, N/A) (N/A, -0.03, N/A)	345.0	N/A	0.8127 [1.0000]	81.3% { 83.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(515.1 / 470.1) 80546	(9.30, N/A) (N/A, -0.02, N/A)	219.4	N/A	0.7767 [1.0000]	77.7% { 117.6% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 203542	(8.01, N/A) (N/A, -0.05, N/A)	599.1	N/A	0.8603 [1.0000]	86.0% { 96.4% }			
13C4_PFOS_IIS	(502.8 / 79.9) 193482	(9.44, N/A) (N/A, -0.02, N/A)	518.7	N/A	0.9644 [1.0000]	96.4% { 121.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 589726	(3.69, N/A) (N/A, -0.01, N/A)	858.3	N/A	8.0757 [8.0000]	100.9% { 103.6% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 335105	(4.99, N/A) (N/A, -0.02, N/A)	771.1	N/A	3.8803 [4.0000]	97.0% { 103.1% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 278010	(6.14, N/A) (N/A, -0.03, N/A)	590.9	N/A	2.0133 [2.0000]	100.7% { 116.5% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 242610	(7.07, N/A) (N/A, -0.03, N/A)	669.1	N/A	1.9886 [2.0000]	99.4% { 109.7% }			
13C8_PFOA_EIS	(421.0 / 376.0) 228071	(7.88, N/A) (N/A, -0.04, N/A)	520.6	N/A	1.9283 [2.0000]	96.4% { 99.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 94811	(8.62, N/A) (N/A, -0.03, N/A)	245.3	N/A	1.0700 [1.0000]	107.0% { 115.5% }			
13C6_PFDA_EIS	(519.0 / 474.0) 115262	(9.30, N/A) (N/A, -0.03, N/A)	335.4	N/A	1.0561 [1.0000]	105.6% { 106.6% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 191573	(9.71, N/A) (N/A, -0.02, N/A)	277.4	N/A	1.2190 [1.0000]	121.9% { 126.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 197114	(9.89, N/A) (N/A, -0.01, N/A)	576.1	N/A	1.1122 [1.0000]	111.2% { 108.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 126812	(10.12, N/A) (N/A, -0.01, N/A)	407.6	N/A	1.1773 [1.0000]	117.7% { 112.6% }			
13C3_PFBs_EIS	(302.0 / 80.0) 695528	(6.09, N/A) (N/A, -0.03, N/A)	765.0	N/A	2.0923 [2.0000]	104.6% { 105.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 371491	(8.01, N/A) (N/A, -0.04, N/A)	698.7	N/A	2.1549 [2.0000]	107.7% { 108.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 594715	(9.44, N/A) (N/A, -0.02, N/A)	598.1	N/A	1.8712 [2.0000]	93.6% { 108.1% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 84408	(5.81, N/A) (N/A, -0.04, N/A)	535.3	N/A	4.5030 [4.0000]	112.6% { 100.1% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 90656	(7.55, N/A) (N/A, -0.05, N/A)	423.1	N/A	3.7739 [4.0000]	94.3% { 101.9% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 98061	(8.96, N/A) (N/A, -0.02, N/A)	306.7	N/A	4.5534 [4.0000]	113.8% { 111.4% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 859777	(10.17, N/A) (N/A, -0.01, N/A)	626.2	N/A	1.8588 [2.0000]	92.9% { 103.1% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 234450	(10.61, N/A) (N/A, -0.01, N/A)	1011.8	N/A	2.0346 [2.0000]	101.7% { 115.0% }			
D5_NEtFOsa_EIS	(531.1 / 169.0) 238892	(10.70, N/A) (N/A, -0.01, N/A)	1462.0	N/A	2.2201 [2.0000]	111.0% { 129.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 254984	(9.49, N/A) (N/A, -0.02, N/A)	259.8	N/A	3.4201 [4.0000]	85.5% { 108.2% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 232848	(9.67, N/A) (N/A, -0.02, N/A)	307.5	N/A	3.7579 [4.0000]	93.9% { 104.1% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 479369	(10.57, N/A) (N/A, 0.00, N/A)	1089.0	N/A	21.6263 [20.0000]	108.1% { 140.1% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 243383	(10.67, N/A) (N/A, -0.01, N/A)	1184.4	N/A	20.3902 [20.0000]	102.0% { 122.6% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 700773	(6.48, N/A) (N/A, -0.03, N/A)	758.9	N/A	8.3351 [8.0000]	104.2% { 107.2% }			

ANALYSIS SEQUENCE BLANKS

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SB03903
 Calibration: 2251019

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03903-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	0.00	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	0.00	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	0.00	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: SB03903
 Calibration: 2251019

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

Lab Sample ID	Analyte	Found	Units	RL	C
SB03903-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	8.21	ng/mL		
	13C5-PFPEA	3.70	ng/mL		
	13C5-PFHXA	1.96	ng/mL		
	13C4-PFHPA	1.84	ng/mL		
	13C8-PFOA	2.07	ng/mL		
	13C9-PFNA	1.05	ng/mL		
	13C6-PFDA	1.22	ng/mL		
	13C7-PFUnA	1.20	ng/mL		
	13C2-PFDOA	1.24	ng/mL		
	13C2-PFTEDA	1.10	ng/mL		
	13C3-PFBS	2.16	ng/mL		
	13C3-PFHXS	2.20	ng/mL		
	13C8-PFOS	2.38	ng/mL		
	13C2-4:2FTS	4.52	ng/mL		
	13C2-6:2FTS	4.23	ng/mL		
	13C2-8:2FTS	3.89	ng/mL		
	13C8-PFOSA	2.47	ng/mL		
	D5-NETFOSA	2.53	ng/mL		
	D3-NMEFOSA	2.38	ng/mL		
	D3-NMEFOSAA	3.82	ng/mL		
	D5-NETFOSAA	4.83	ng/mL		
	D7-NMEFOSE	25.2	ng/mL		
	D9-NETFOSE	23.8	ng/mL		
	13C3-HFPO-DA	8.15	ng/mL		



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (39)
 Acquired: 2022/12/20 - 19:30

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
PFBA	(212.9 / 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	(262.9 / 219.0) N/A (262.9 / 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: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (39)
 Acquired: 2022/12/20 - 19:30

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	(298.9 / 80.0) N/A (298.9 / 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	(698.9 / 80.0) N/A (698.9 / 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: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (39)
 Acquired: 2022/12/20 - 19:30

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	(511.9 / 219.0) N/A (511.9 / 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	(616.1 / 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			

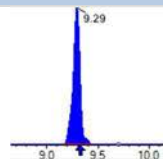
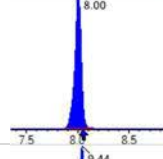
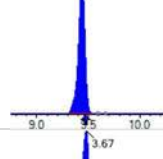
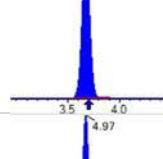
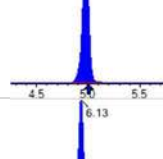
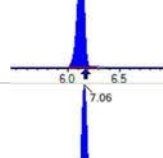
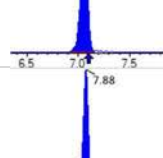
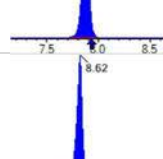
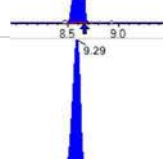
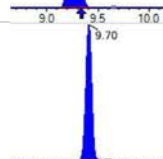



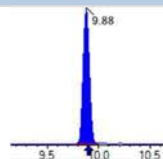
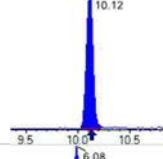
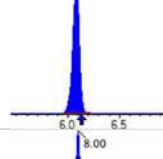
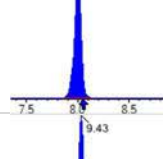
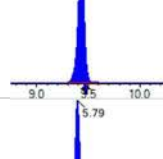
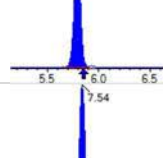
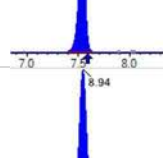
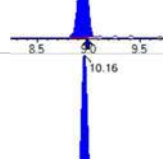
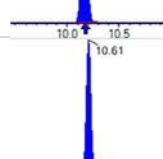
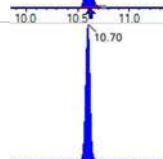
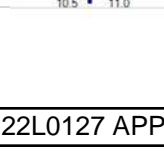
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (39)
 Acquired: 2022/12/20 - 19:30

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
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	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(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) 69114	(3.68, N/A) (N/A, -0.02, N/A)	631.9	N/A	0.7905 [1.0000]	79.1% { 96.3% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 123985	(6.13, N/A) (N/A, -0.04, N/A)	687.5	N/A	0.9423 [1.0000]	94.2% { 106.1% }			
13C4_PFOA_IIS	(417.0 / 372.0) 113039	(7.88, N/A) (N/A, -0.05, N/A)	593.6	N/A	0.9031 [1.0000]	90.3% { 112.0% }			
13C5_PFNA_IIS	(468.0 / 423.0) 76126	(8.61, N/A) (N/A, -0.04, N/A)	230.8	N/A	0.7626 [1.0000]	76.3% { 78.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(515.1 / 470.1) 72608	(9.29, N/A) (N/A, -0.03, N/A)	691.2	N/A	0.7002 [1.0000]	70.0% { 106.0% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 198853	(8.00, N/A) (N/A, -0.05, N/A)	646.2	N/A	0.8405 [1.0000]	84.1% { 94.2% }			
13C4_PFOS_IIS	(502.8 / 79.9) 159707	(9.44, N/A) (N/A, -0.03, N/A)	327.6	N/A	0.7961 [1.0000]	79.6% { 100.4% }			
13C4_PFBA_EIS	(217.0 / 172.0) 587470	(3.67, N/A) (N/A, -0.02, N/A)	738.6	N/A	8.2100 [8.0000]	102.6% { 103.2% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 337845	(4.97, N/A) (N/A, -0.03, N/A)	825.4	N/A	3.7012 [4.0000]	92.5% { 104.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 286018	(6.13, N/A) (N/A, -0.04, N/A)	516.0	N/A	1.9596 [2.0000]	98.0% { 119.8% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 237913	(7.06, N/A) (N/A, -0.04, N/A)	554.2	N/A	1.8450 [2.0000]	92.2% { 107.6% }			
13C8_PFOA_EIS	(421.0 / 376.0) 258772	(7.88, N/A) (N/A, -0.05, N/A)	621.9	N/A	2.0717 [2.0000]	103.6% { 112.6% }			
13C9_PFNA_EIS	(472.0 / 427.0) 87614	(8.62, N/A) (N/A, -0.04, N/A)	377.1	N/A	1.0536 [1.0000]	105.4% { 106.7% }			
13C6_PFDA_EIS	(519.0 / 474.0) 120262	(9.29, N/A) (N/A, -0.04, N/A)	645.8	N/A	1.2223 [1.0000]	122.2% { 111.3% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 169811	(9.70, N/A) (N/A, -0.02, N/A)	339.1	N/A	1.1987 [1.0000]	119.9% { 112.0% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 198882	(9.88, N/A) (N/A, -0.02, N/A)	364.2	N/A	1.2449 [1.0000]	124.5% { 109.2% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 107004	(10.12, N/A) (N/A, -0.01, N/A)	236.9	N/A	1.1020 [1.0000]	110.2% { 95.0% }			
13C3_PFBs_EIS	(302.0 / 80.0) 701203	(6.08, N/A) (N/A, -0.05, N/A)	873.5	N/A	2.1591 [2.0000]	108.0% { 106.0% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 370305	(8.00, N/A) (N/A, -0.05, N/A)	743.9	N/A	2.1987 [2.0000]	109.9% { 107.8% }			
13C8_PFOS_EIS	(507.0 / 80.0) 623658	(9.43, N/A) (N/A, -0.03, N/A)	590.9	N/A	2.3772 [2.0000]	118.9% { 113.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 82850	(5.79, N/A) (N/A, -0.05, N/A)	620.4	N/A	4.5242 [4.0000]	113.1% { 98.3% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 99363	(7.54, N/A) (N/A, -0.05, N/A)	508.0	N/A	4.2339 [4.0000]	105.8% { 111.7% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 81759	(8.94, N/A) (N/A, -0.04, N/A)	233.6	N/A	3.8859 [4.0000]	97.1% { 92.9% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 942916	(10.16, N/A) (N/A, -0.01, N/A)	702.9	N/A	2.4696 [2.0000]	123.5% { 113.1% }			
D3_NMeFOsa_EIS	(515.0 / 169.0) 226137	(10.61, N/A) (N/A, -0.01, N/A)	939.3	N/A	2.3774 [2.0000]	118.9% { 110.9% }			
D5_NEtFOsa_EIS	(531.1 / 169.0) 225020	(10.70, N/A) (N/A, -0.01, N/A)	1373.1	N/A	2.5334 [2.0000]	126.7% { 121.8% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: SB03903-CCB5
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

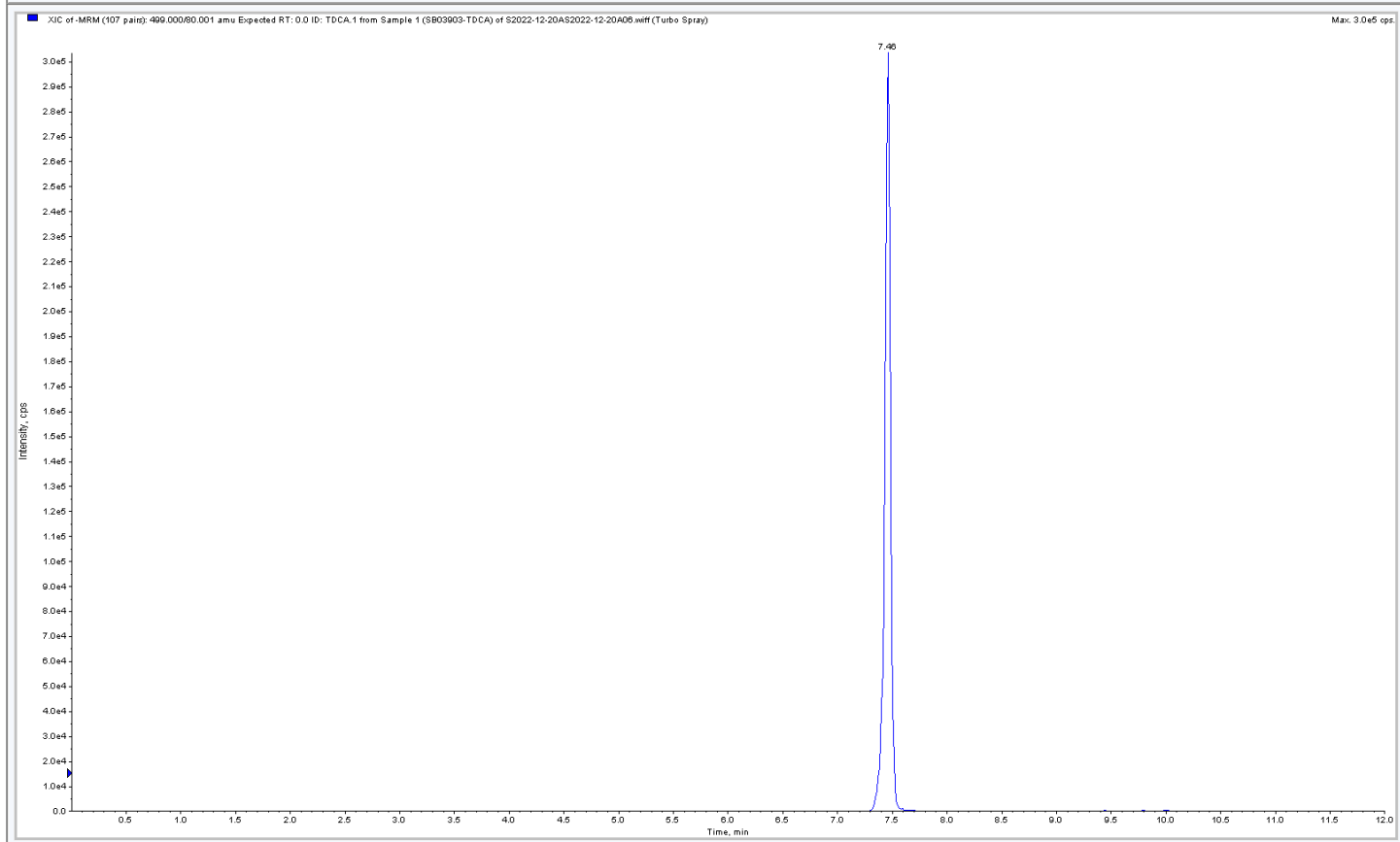
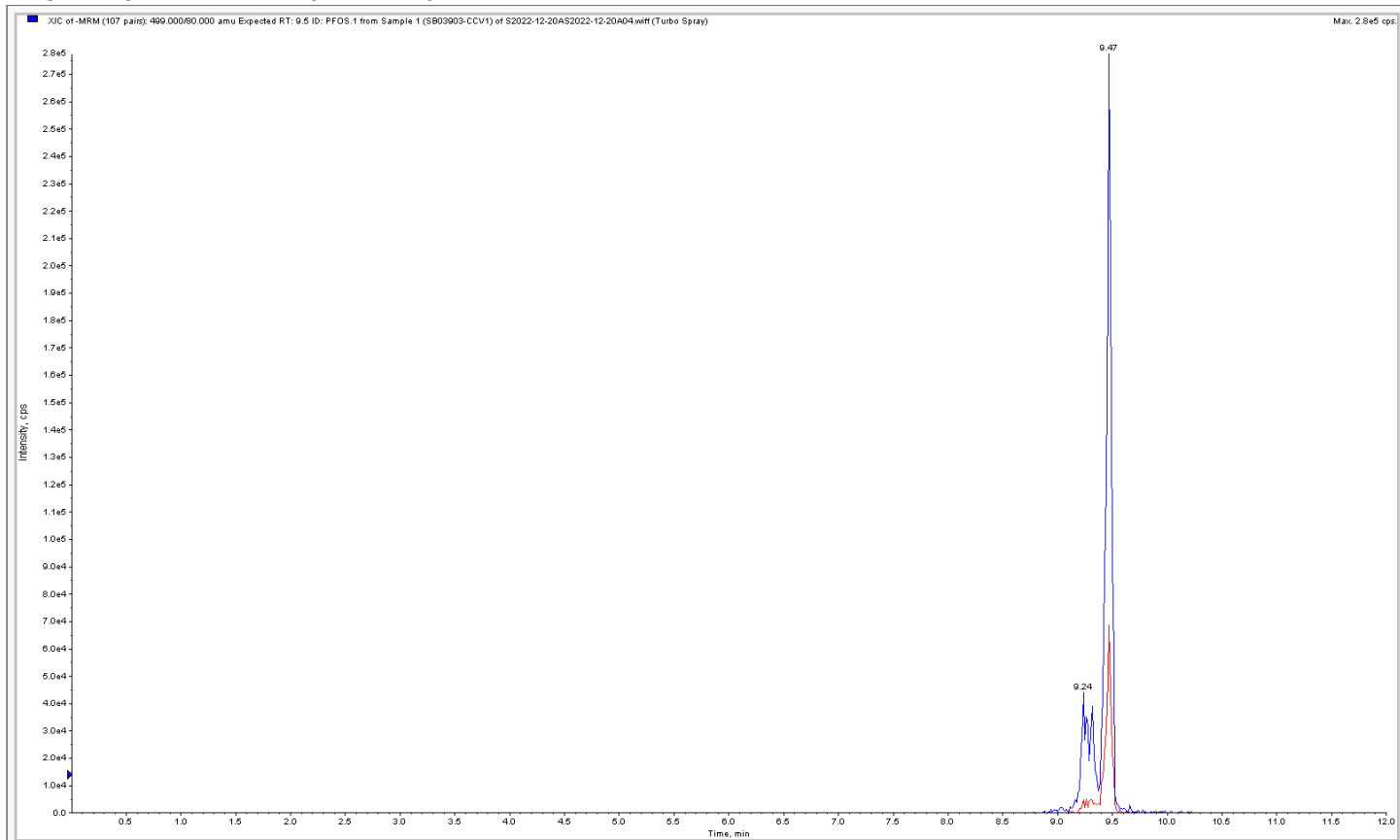
Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (39)
 Acquired: 2022/12/20 - 19:30

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT-CV[μ min], Δ 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) 235127	(9.48, N/A) (N/A, -0.02, N/A)	338.0	N/A	3.8207 [4.0000]	95.5% { 99.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 247182	(9.67, N/A) (N/A, -0.02, N/A)	332.6	N/A	4.8329 [4.0000]	120.8% { 110.5% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 460210	(10.57, N/A) (N/A, -0.01, N/A)	1186.7	N/A	25.1527 [20.0000]	125.8% { 134.5% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 234569	(10.67, N/A) (N/A, -0.01, N/A)	993.9	N/A	23.8077 [20.0000]	119.0% { 118.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 723821	(6.47, N/A) (N/A, -0.04, N/A)	837.2	N/A	8.1451 [8.0000]	101.8% { 110.7% }			

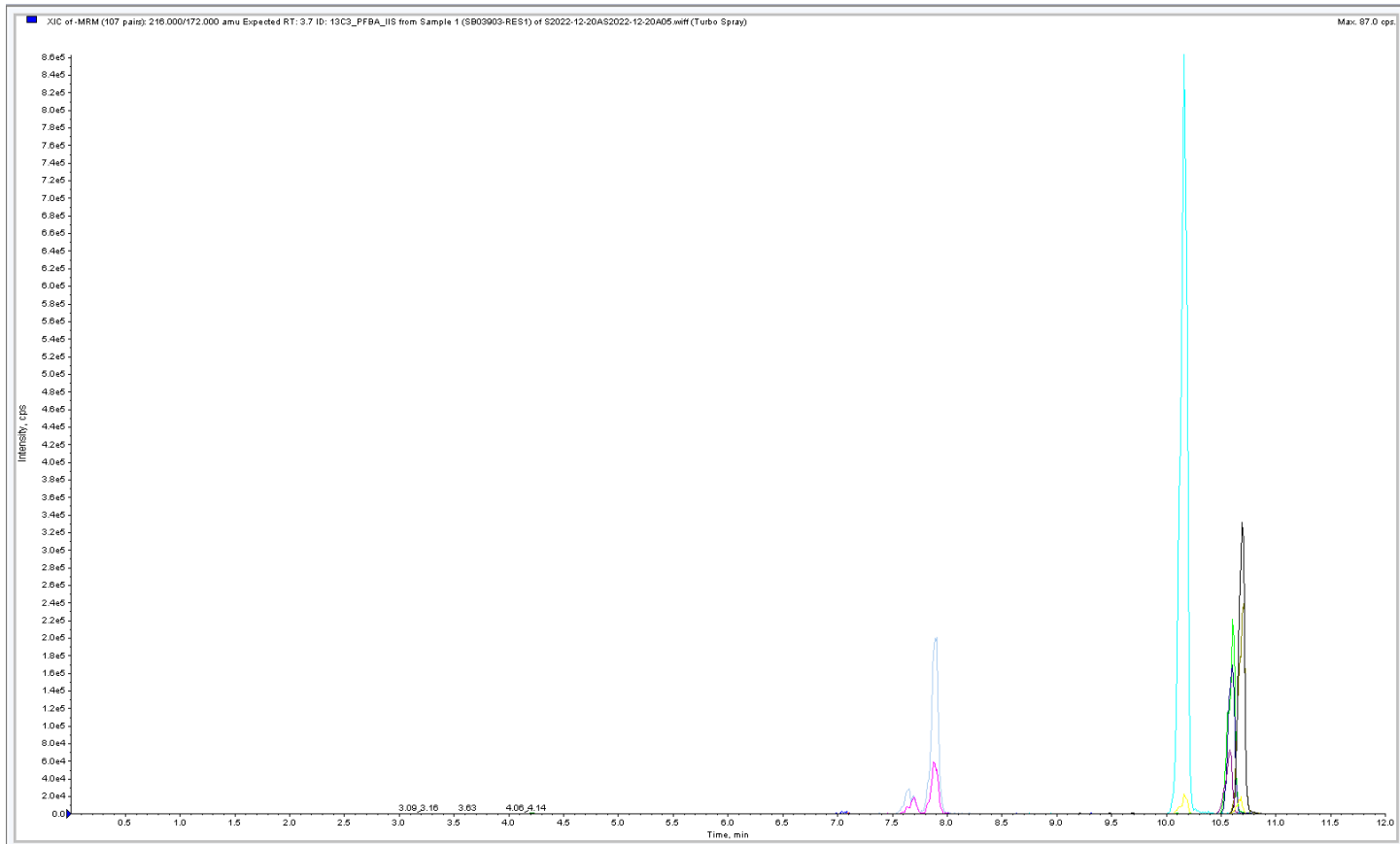
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BILE STANDARD CHECK S2022-12-20B/SB03903

TDCA = 7.46
PFOS = 9.00
TDCA-PFOS = 1.54 > 1.0 PASS



S2022-12-20B/SB03903 Column Resolution



QUALITY CONTROL RAW DATA

ANALYSIS DATA SHEET

Blank

Laboratory:	APPL, LLC	Work Order:	22L0127
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BBL0355-BLK1
Sampled:		Prepared:	12/19/22 08:59
Solids:		Preparation:	1633
Batch:	BBL0355	Sequence:	SB03903
Column:	1	Calibration:	2251019
		Instrument:	Saphira
		File ID:	S2022-12-20A (11)
		Analyzed:	12/20/22 12:12
		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	0.20 U	0.40	0.20	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	0.20 U	0.40	0.20	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	0.20 U	0.40	0.20	0.20	U
PFBS	0.20 U	0.40	0.20	0.037	U
PFPEs	0.20 U	0.40	0.20	0.063	U
PFHXS	0.20 U	0.40	0.20	0.032	U
PFHPS	0.20 U	0.40	0.20	0.051	U
PFOS	0.0827 J	0.40	0.20	0.064	J
PFNS	0.20 U	0.40	0.20	0.12	U
PFDS	0.20 U	0.40	0.20	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	0.20 U	0.40	0.20	0.10	U
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:	22L0127
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BBL0355-BLK1
Sampled:		Prepared:	12/19/22 08:59
Solids:		Preparation:	1633
Batch:	BBL0355	Sequence:	SB03903
Column:	1	Calibration:	2251019
			Instrument: Saphira
			File ID: S2022-12-20A (11)
			Analyzed: 12/20/22 12:12
			Dilution: 1

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: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BBL0355-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (11)
 Acquired: 2022/12/20 - 12:12

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
PFBA	(212.9 / 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	(262.9 / 219.0) N/A (262.9 / 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: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BBL0355-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (11)
 Acquired: 2022/12/20 - 12:12

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(298.9 / 80.0) N/A (298.9 / 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) 7614 (499.0 / 99.0) 1984	(9.44 , 1.00) (0.00 , N/A , -1.4)	29.5 24.3	0.2605 114.0 114.7	0.0207	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	(698.9 / 80.0) N/A (698.9 / 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: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BBL0355-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (11)
 Acquired: 2022/12/20 - 12:12

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	(511.9 / 219.0) N/A (511.9 / 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	(616.1 / 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			

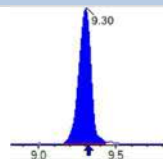
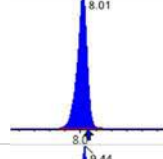
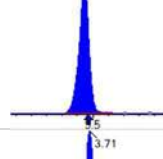
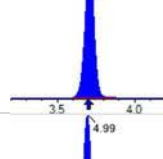
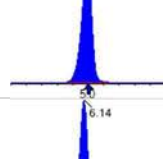
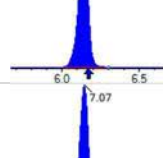
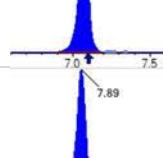
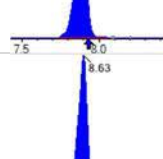
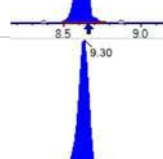
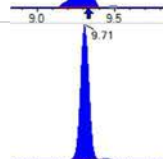
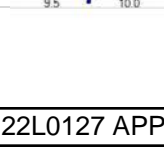


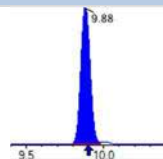
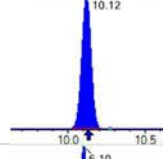
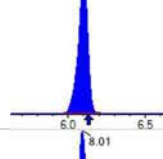
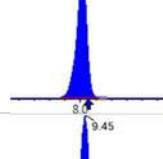
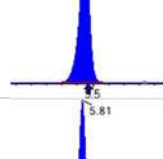
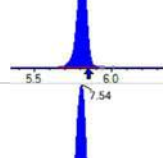
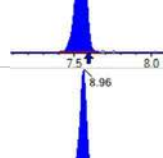
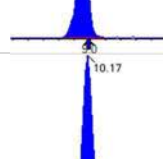
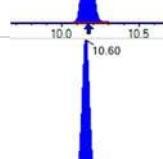
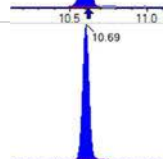
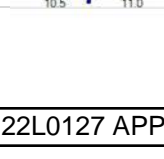
Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BBL0355-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (11)
 Acquired: 2022/12/20 - 12:12

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
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	(201.0 / 85.0) N/A (295.0 / 201.0) N/A	(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) 93894	(3.71, N/A) (N/A, 0.01, N/A)	744.6	N/A	1.0739 [1.0000]	107.4% { 130.8% }			
13C2_PFHxA_IIS	(315.1 / 270.0) 137700	(6.14, N/A) (N/A, -0.03, N/A)	663.4	N/A	1.0465 [1.0000]	104.7% { 117.9% }			
13C4_PFOA_IIS	(417.0 / 372.0) 139021	(7.88, N/A) (N/A, -0.04, N/A)	598.5	N/A	1.1107 [1.0000]	111.1% { 137.8% }			
13C5_PFNA_IIS	(468.0 / 423.0) 108283	(8.62, N/A) (N/A, -0.03, N/A)	319.9	N/A	1.0848 [1.0000]	108.5% { 111.5% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(515.1 / 470.1) 106973	(9.30, N/A) (N/A, -0.02, N/A)	321.7	N/A	1.0315 [1.0000]	103.2% { 156.2% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 255110	(8.01, N/A) (N/A, -0.04, N/A)	818.1	N/A	1.0783 [1.0000]	107.8% { 120.9% }			
13C4_PFOS_IIS	(502.8 / 79.9) 192815	(9.44, N/A) (N/A, -0.02, N/A)	300.6	N/A	0.9611 [1.0000]	96.1% { 121.2% }			
13C4_PFBA_EIS	(217.0 / 172.0) 766331	(3.71, N/A) (N/A, 0.01, N/A)	892.2	N/A	7.8832 [8.0000]	98.5% { 134.7% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 420890	(4.99, N/A) (N/A, -0.01, N/A)	749.0	N/A	4.1517 [4.0000]	103.8% { 129.6% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 335561	(6.14, N/A) (N/A, -0.03, N/A)	657.6	N/A	2.0701 [2.0000]	103.5% { 140.6% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 261250	(7.07, N/A) (N/A, -0.03, N/A)	394.8	N/A	1.8242 [2.0000]	91.2% { 118.1% }			
13C8_PFOA_EIS	(421.0 / 376.0) 266699	(7.89, N/A) (N/A, -0.04, N/A)	540.7	N/A	1.7361 [2.0000]	86.8% { 116.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 110479	(8.63, N/A) (N/A, -0.03, N/A)	299.3	N/A	0.9341 [1.0000]	93.4% { 134.6% }			
13C6_PFDA_EIS	(519.0 / 474.0) 144700	(9.30, N/A) (N/A, -0.03, N/A)	390.8	N/A	0.9983 [1.0000]	99.8% { 133.9% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 225100	(9.71, N/A) (N/A, -0.02, N/A)	502.1	N/A	1.0785 [1.0000]	107.9% { 148.4% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 234169	(9.88, N/A) (N/A, -0.02, N/A)	1067.6	N/A	0.9949 [1.0000]	99.5% { 128.5% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 160416	(10.12, N/A) (N/A, -0.01, N/A)	413.5	N/A	1.1214 [1.0000]	112.1% { 142.4% }			
13C3_PFBs_EIS	(302.0 / 80.0) 821313	(6.10, N/A) (N/A, -0.03, N/A)	766.1	N/A	1.9712 [2.0000]	98.6% { 124.1% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 396286	(8.01, N/A) (N/A, -0.04, N/A)	651.4	N/A	1.8340 [2.0000]	91.7% { 115.4% }			
13C8_PFOS_EIS	(507.0 / 80.0) 669766	(9.45, N/A) (N/A, -0.02, N/A)	400.5	N/A	2.1146 [2.0000]	105.7% { 121.8% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 102446	(5.81, N/A) (N/A, -0.03, N/A)	507.7	N/A	4.3606 [4.0000]	109.0% { 121.5% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 119670	(7.54, N/A) (N/A, -0.05, N/A)	572.9	N/A	3.9747 [4.0000]	99.4% { 134.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 120213	(8.96, N/A) (N/A, -0.03, N/A)	443.2	N/A	4.4536 [4.0000]	111.3% { 136.6% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 906022	(10.17, N/A) (N/A, -0.01, N/A)	815.4	N/A	1.9655 [2.0000]	98.3% { 108.6% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 126898	(10.60, N/A) (N/A, -0.01, N/A)	570.7	N/A	1.1050 [2.0000]	55.3% { 62.3% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 120669	(10.69, N/A) (N/A, -0.01, N/A)	1011.4	N/A	1.1253 [2.0000]	56.3% { 65.3% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BBL0355-BLK1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (11)
 Acquired: 2022/12/20 - 12:12

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 310466	(9.49, N/A) (N/A, -0.02, N/A)	337.8	N/A	4.1787 [4.0000]	104.5% { 131.8% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 287865	(9.67, N/A) (N/A, -0.02, N/A)	238.1	N/A	4.6619 [4.0000]	116.5% { 128.6% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 418333	(10.57, N/A) (N/A, -0.01, N/A)	1036.9	N/A	18.9381 [20.0000]	94.7% { 122.2% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 224727	(10.67, N/A) (N/A, -0.01, N/A)	924.1	N/A	18.8924 [20.0000]	94.5% { 113.2% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 783838	(6.49, N/A) (N/A, -0.03, N/A)	846.3	N/A	7.9420 [8.0000]	99.3% { 119.9% }			

ANALYSIS DATA SHEET

LCS

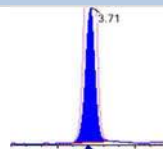
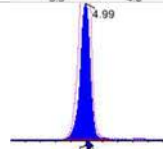
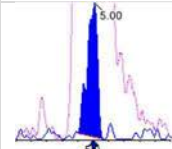
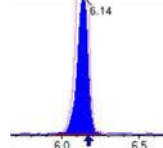
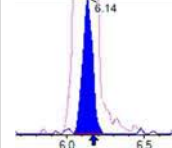
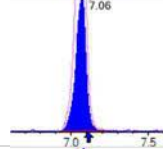
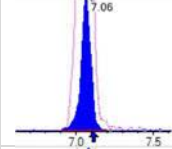
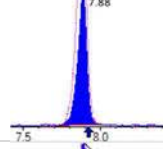
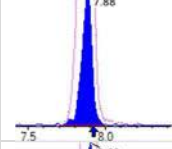
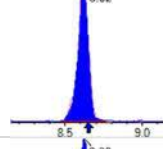
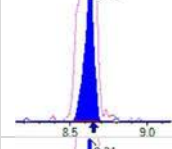
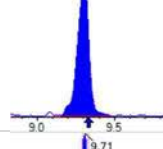
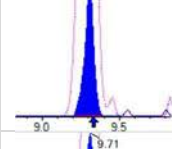
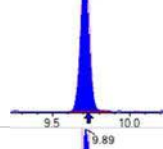
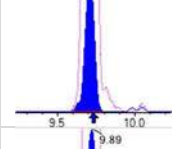
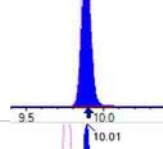
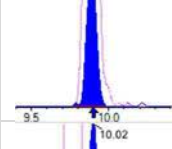
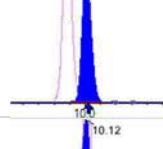
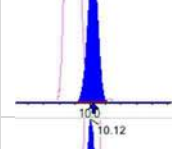
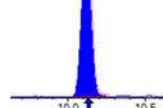
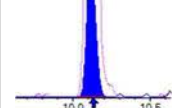
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Matrix:	Water	Laboratory ID:	BBL0355-BS1
Sampled:		Prepared:	12/19/22 08:59
Solids:		Preparation:	1633
Batch:	BBL0355	Sequence:	SB03903
Column:	1	Calibration:	2251019
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			Analyzed: 12/20/22 12:25
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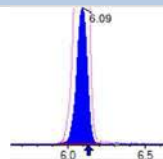
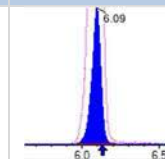
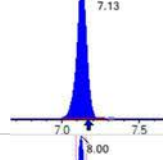
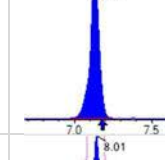
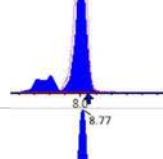
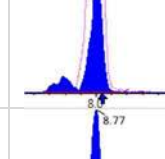
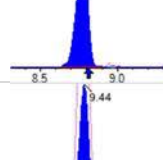
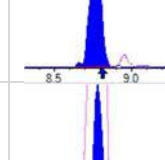
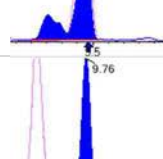
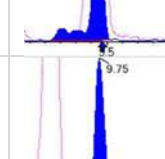
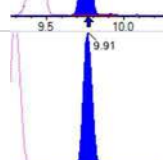
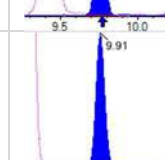
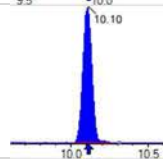
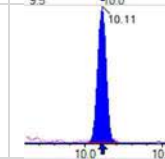
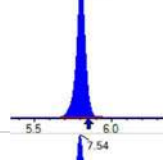
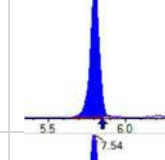
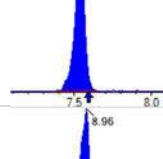
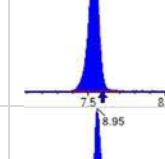
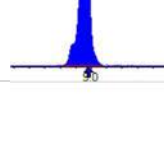
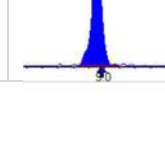
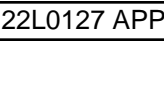
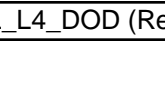
COMPOUND	CONC. (ng/L)	LOQ	DL	Q
PFBA	15.1	1.6	0.21	
PFPEA	8.03	0.80	0.065	
PFHXA	3.59	0.40	0.055	
PFHPA	3.85	0.40	0.041	
PFOA	4.29	0.40	0.15	
PFNA	4.25	0.40	0.082	
PFDA	4.58	0.40	0.10	
PFUnA	4.33	0.40	0.16	
PFDOA	3.66	0.40	0.11	
PFTRDA	4.39	0.40	0.20	
PFTEDA	3.25	0.40	0.20	
PFBS	3.30	0.40	0.037	
PFPEs	3.33	0.40	0.063	
PFHXS	3.41	0.40	0.032	
PFHPS	3.99	0.40	0.051	
PFOS	3.96	0.40	0.064	
PFNS	4.43	0.40	0.12	
PFDS	4.05	0.40	0.15	
PFDOS	4.01	0.40	0.12	
4:2FTS	14.6	1.6	0.29	
6:2FTS	14.4	1.6	0.31	
8:2FTS	16.7	1.6	0.082	
PFOSA	4.02	0.40	0.10	
NMeFOSA	15.9	1.6	0.47	
NEtFOSA	16.2	1.6	0.41	
NMeFOSAA	3.46	0.40	0.11	
NEtFOSAA	3.19	0.40	0.11	
NMeFOSE	16.8	1.6	1.0	
NEtFOSE	16.0	1.6	1.0	
HFPO-DA	7.53	0.88	0.17	

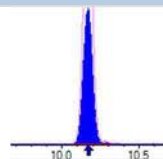
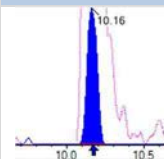
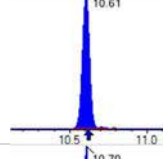
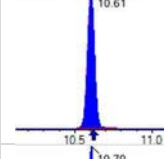
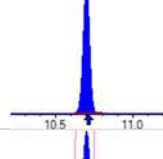
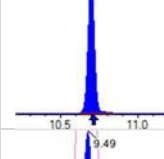
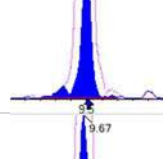
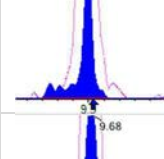
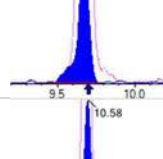
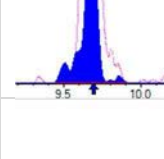
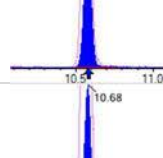
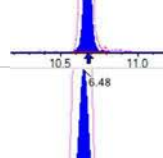
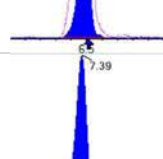
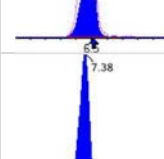
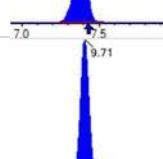
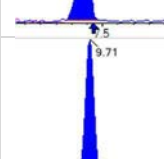
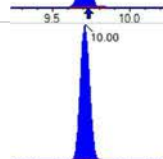
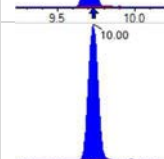

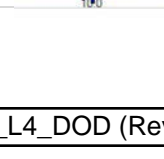
ANALYSIS DATA SHEET**LCS**

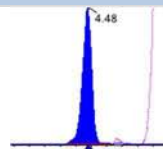
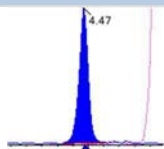
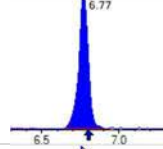
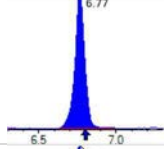
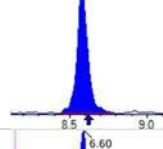
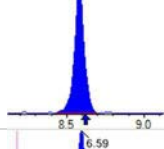
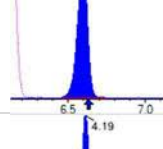
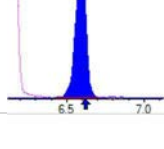
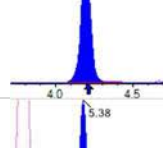
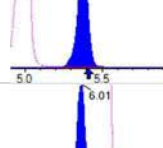
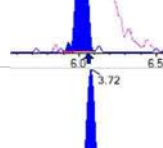
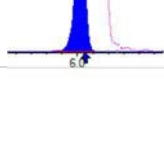
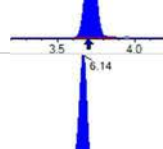
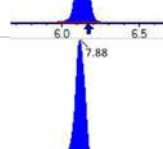
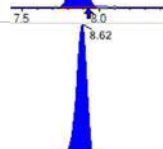

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Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BBL0355-BS1
Sampled:		File ID:	S2022-12-20A (12)
		Prepared:	12/19/22 08:59
Solids:		Analyzed:	12/20/22 12:25
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Batch:	BBL0355	Dilution:	1
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		Calibration:	2251019
Column:	1	Instrument:	Saphira

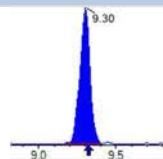
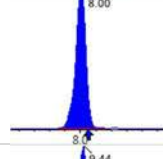
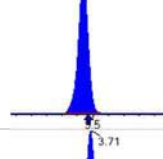
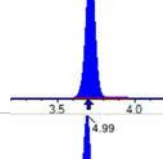
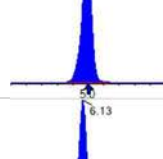
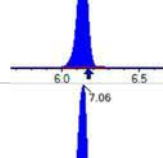
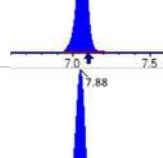
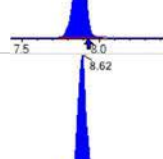
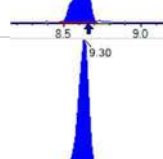
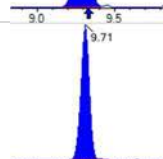
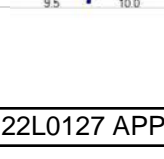
COMPOUND	CONC. (ng/L)	LOQ	DL	Q
ADONA	7.08	0.80	0.12	
PFEESA	6.79	0.80	0.11	
PFMPA	7.30	0.80	0.054	
PFMBA	7.58	0.80	0.091	
NFDHA	9.74	0.80	0.30	IR1
9CL-PF3ONS	7.76	0.80	0.21	
11CL-PF3OUDS	6.75	0.80	0.21	
3:3FTCA	14.6	1.6	0.57	IR1
5:3FTCA	14.8	1.6	0.44	
7:3FTCA	15.0	1.6	0.55	

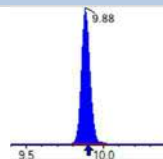
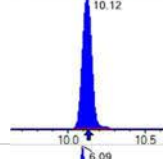
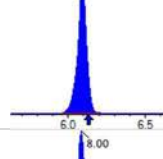
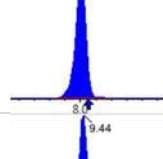
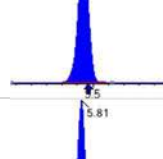
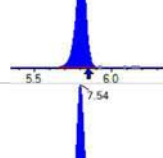
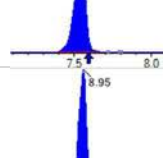
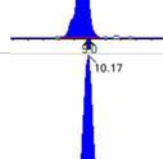
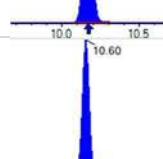
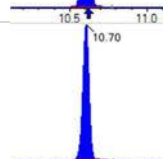
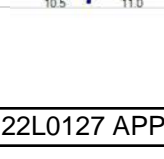
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 236528	(3.71, 1.00) (0.00, N/A, 0.0)	58.9	N/A 0.0 0.0	3.7826 [4.0000]	94.6%			
PFPeA	(262.9 / 219.0) 180008 (262.9 / 69.0) 2021	(4.99, 1.00) (0.00, N/A, -0.4)	535.4 46.0	0.0112 13154.7 92.3	2.0063 [2.0000]	100.3%			
PFHxA	(313.0 / 269.0) 129473 (313.0 / 119.0) 11226	(6.14, 1.00) (0.00, N/A, 0.1)	323.2 129.3	0.0867 88.4 91.3	0.8984 [1.0000]	89.8%			
PFHpA	(363.0 / 319.0) 123388 (363.0 / 169.0) 35629	(7.06, 1.00) (0.00, N/A, 0.1)	439.5 375.8	0.2888 92.4 100.0	0.9622 [1.0000]	96.2%			
PFOA	(413.0 / 369.0) 135597 (413.0 / 169.0) 41031	(7.88, 1.00) (0.01, N/A, 0.1)	370.6 365.9	0.3026 89.9 92.7	1.0728 [1.0000]	107.3%			
PFNA	(463.0 / 419.0) 95041 (463.0 / 169.0) 17947	(8.62, 1.00) (0.00, N/A, -0.5)	385.3 90.2	0.1888 94.1 82.8	1.0623 [1.0000]	106.2%			
PFDA	(513.0 / 469.0) 134880 (513.0 / 169.0) 11493	(9.30, 1.00) (0.00, N/A, -0.4)	206.1 250.2	0.0852 107.1 91.7	1.1454 [1.0000]	114.5%			
PFUnA	(563.0 / 519.0) 167447 (563.0 / 169.0) 16957	(9.71, 1.00) (0.00, N/A, -0.1)	325.4 172.8	0.1013 90.4 88.1	1.0825 [1.0000]	108.2%			
PFDoA	(613.0 / 569.0) 173409 (613.0 / 169.0) 22342	(9.89, 1.00) (0.00, N/A, -0.2)	400.8 119.5	0.1288 102.6 96.9	0.9148 [1.0000]	91.5%			
PFTrDA	(663.0 / 619.0) 171608 (663.0 / 169.0) 25359	(10.01, 1.01) (N/A, -0.01, -0.6)	348.8 534.2	0.1478 70.7 82.0	1.0970 [1.0000]	109.7%			
PFTeDA	(713.0 / 669.0) 122328 (713.0 / 169.0) 23721	(10.12, 1.00) (-0.01, N/A, 0.1)	351.3 158.9	0.1939 85.4 91.3	0.8133 [1.0000]	81.3%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(298.9 / 80.0) 192046 (298.9 / 99.0) 136981	(6.09, 1.00) (0.00, N/A, -0.2)	583.7 614.7	0.7133 104.9 108.9	0.8245 [0.8847]	93.2%			
PFPeS	(349.0 / 80.0) 331741 (349.0 / 99.0) 120856	(7.13, 0.89) (N/A, -0.05, -0.2)	633.9 533.1	0.3643 97.6 81.3	0.8319 [0.9384]	88.7%			
PFHxS	(399.0 / 80.0) 288409 (399.0 / 99.0) 100685	(8.00, 1.00) (0.00, N/A, -0.1)	58612.0 5444.7	0.3491 101.8 99.4	0.8531 [0.9110]	93.7%			
PFHpS	(449.0 / 80.0) 263384 (449.0 / 99.0) 80276	(8.77, 0.93) (N/A, -0.04, 0.3)	477.7 324.2	0.3048 103.9 112.8	0.9966 [0.9514]	104.7%			
PFOS	(499.0 / 80.0) 324756 (499.0 / 99.0) 75932	(9.44, 1.00) (0.01, N/A, 0.1)	82.9 115.2	0.2338 102.3 102.9	0.9911 [0.9275]	106.9%			
PFNS	(549.0 / 80.0) 417193 (549.0 / 99.0) 112596	(9.76, 1.03) (N/A, -0.01, 0.2)	528.9 327.2	0.2699 108.2 98.6	1.1073 [0.9599]	115.4%			
PFDS	(599.0 / 80.0) 470667 (599.0 / 99.0) 122034	(9.91, 1.05) (N/A, -0.01, -0.1)	624.4 471.5	0.2593 101.7 119.9	1.0124 [0.9631]	105.1%			
PFDoS	(698.9 / 80.0) 243462 (698.9 / 99.0) 55826	(10.10, 1.07) (N/A, -0.01, -0.3)	713.2 691.0	0.2293 111.6 101.0	1.0032 [0.9696]	103.5%			
4:2FTS	(327.0 / 307.0) 275487 (327.0 / 81.0) 149796	(5.80, 1.00) (0.00, N/A, 0.1)	752.5 418.2	0.5438 108.8 97.9	3.6551 [3.7381]	97.8%			
6:2FTS	(427.0 / 407.0) 160988 (427.0 / 81.0) 108204	(7.54, 1.00) (0.00, N/A, 0.1)	583.1 519.6	0.6721 93.8 101.6	3.5901 [3.7962]	94.6%			
8:2FTS	(527.0 / 507.0) 140682 (527.0 / 81.0) 102507	(8.96, 1.00) (0.00, N/A, 0.6)	381.5 250.5	0.7286 103.6 122.9	4.1872 [3.8332]	109.2%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 484651 (498.0 / 478.0) 12605	(10.17, 1.00) (0.00, N/A, 0.3)	832.3 95.7	0.0260 110.0 128.6	1.0043 [1.0000]	100.4%			
NMeFOSA	(511.9 / 219.0) 248012 (511.9 / 169.0) 155538	(10.61, 1.00) (0.00, N/A, 0.0)	734.3 766.0	0.6271 89.9 89.1	3.9866 [4.0000]	99.7%			
NEiFOSA	(526.0 / 219.0) 245699 (526.0 / 169.0) 257292	(10.70, 1.00) (0.00, N/A, 0.1)	1138.1 937.2	1.0472 93.0 99.1	4.0554 [4.0000]	101.4%			
NMeFOSAA	(570.0 / 419.0) 50032 (570.0 / 483.0) 30477	(9.50, 1.00) (0.01, N/A, 0.2)	188.5 883.7	0.6091 129.7 134.1	0.8650 [1.0000]	86.5%			
NEiFOSAA	(584.0 / 419.0) 55013 (584.0 / 526.0) 36740	(9.67, 1.00) (0.00, N/A, -0.3)	511.2 130.0	0.6678 86.7 129.9	0.7977 [1.0000]	79.8%			
NMeFOSE	(616.1 / 59.0) 110712	(10.58, 1.00) (0.01, N/A, 0.0)	600.3	N/A 0.0 0.0	4.1950 [4.0000]	104.9%			
NEiFOSE	(630.0 / 59.0) 27296	(10.68, 1.00) (0.01, N/A, 0.0)	524.5	N/A 0.0 0.0	4.0002 [4.0000]	100.0%			
HFPO-DA	(285.0 / 169.0) 109563 (285.0 / 185.0) 310924	(6.48, 1.00) (0.00, N/A, 0.1)	556.9 811.1	2.8379 111.3 101.6	1.8836 [2.0000]	94.2%			
ADONA	(377.0 / 85.0) 427063 (377.0 / 251.0) 50211	(7.39, 1.14) (N/A, -0.05, 0.1)	748.8 194.6	0.1176 93.8 99.5	1.7711 [1.8854]	93.9%			
9CI-Pf3ONS	(531.0 / 351.0) 1326021 (533.0 / 353.0) 439585	(9.71, 1.50) (N/A, -0.02, 0.0)	471.9 560.2	0.3315 104.7 111.9	1.9392 [1.8665]	103.9%			
11CI-PF3OUDS	(631.0 / 451.0) 759923 (633.0 / 453.0) 261774	(10.00, 1.54) (N/A, -0.01, -0.1)	1017.0 748.7	0.3445 117.7 107.2	1.6865 [1.8864]	89.4%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 14091 (241.0 / 117.0) 23762	(4.48, 0.90) (N/A, -0.01, 0.2)	480.6 302.7	1.6864 0.1 96.8	3.6617 [4.0000]	91.5%			IR1,
5:3FTCA	(341.0 / 236.7) 108865 (341.0 / 217.0) 176342	(6.77, 1.10) (N/A, -0.03, 0.3)	439.7 475.0	1.6198 102.5 102.2	3.7097 [4.0000]	92.7%			
7:3FTCA	(441.0 / 317.0) 123900 (441.0 / 337.0) 96110	(8.58, 1.40) (N/A, -0.04, -0.1)	202.2 337.8	0.7757 95.4 89.9	3.7412 [4.0000]	93.5%			
PFEESA	(315.0 / 135.0) 251149 (315.0 / 83.0) 79950	(6.60, 1.08) (N/A, -0.03, 0.1)	690.3 492.8	0.3183 112.6 119.6	1.6970 [1.7849]	95.1%			
PFMPA	(229.0 / 85.0) 44185	(4.19, 0.84) (N/A, -0.01, 0.0)	668.4	N/A 0.0 0.0	1.8246 [2.0000]	91.2%			
PFMBA	(279.0 / 85.0) 149771	(5.38, 1.08) (N/A, -0.03, 0.0)	1005.8	N/A 0.0 0.0	1.8946 [2.0000]	94.7%			
NFDHA	(201.0 / 85.0) 7239 (295.0 / 201.0) 39540	(6.01, 0.98) (N/A, -0.04, -0.4)	170.1 591.7	5.4617 0.7 80.7	2.4339 [2.0000]	121.7%			IR1,
13C3_PFBA_IIS	(216.0 / 172.0) 92809	(3.72, N/A) (N/A, 0.02, N/A)	898.2	N/A	1.0615 [1.0000]	106.2% {129.3%}			
13C2_PFHxA_IIS	(315.1 / 270.0) 145359	(6.14, N/A) (N/A, -0.03, N/A)	703.3	N/A	1.1048 [1.0000]	110.5% {124.4%}			
13C4_PFOA_IIS	(417.0 / 372.0) 118544	(7.88, N/A) (N/A, -0.05, N/A)	448.9	N/A	0.9471 [1.0000]	94.7% {117.5%}			
13C5_PFNA_IIS	(468.0 / 423.0) 94810	(8.62, N/A) (N/A, -0.03, N/A)	208.6	N/A	0.9498 [1.0000]	95.0% {97.6%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(515.1 / 470.1) 96459	(9.30, N/A) (N/A, -0.02, N/A)	362.0	N/A	0.9302 [1.0000]	93.0% { 140.8% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 236313	(8.00, N/A) (N/A, -0.05, N/A)	635.3	N/A	0.9989 [1.0000]	99.9% { 112.0% }			
13C4_PFOS_IIS	(502.8 / 79.9) 195699	(9.44, N/A) (N/A, -0.03, N/A)	450.4	N/A	0.9755 [1.0000]	97.5% { 123.0% }			
13C4_PFBA_EIS	(217.0 / 172.0) 753192	(3.71, N/A) (N/A, 0.02, N/A)	863.1	N/A	7.8386 [8.0000]	98.0% { 132.4% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 396394	(4.99, N/A) (N/A, -0.01, N/A)	739.6	N/A	3.7041 [4.0000]	92.6% { 122.0% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 317695	(6.13, N/A) (N/A, -0.04, N/A)	680.8	N/A	1.8566 [2.0000]	92.8% { 133.1% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 284024	(7.06, N/A) (N/A, -0.04, N/A)	562.5	N/A	1.8787 [2.0000]	93.9% { 128.4% }			
13C8_PFOA_EIS	(421.0 / 376.0) 266709	(7.88, N/A) (N/A, -0.05, N/A)	616.1	N/A	2.0361 [2.0000]	101.8% { 116.1% }			
13C9_PFNA_EIS	(472.0 / 427.0) 105876	(8.62, N/A) (N/A, -0.04, N/A)	373.0	N/A	1.0223 [1.0000]	102.2% { 129.0% }			
13C6_PFDA_EIS	(519.0 / 474.0) 127726	(9.30, N/A) (N/A, -0.03, N/A)	255.8	N/A	0.9772 [1.0000]	97.7% { 118.2% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 207561	(9.71, N/A) (N/A, -0.01, N/A)	329.0	N/A	1.1029 [1.0000]	110.3% { 136.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 236653	(9.88, N/A) (N/A, -0.01, N/A)	640.6	N/A	1.1150 [1.0000]	111.5% { 129.9% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 157162	(10.12, N/A) (N/A, -0.01, N/A)	594.6	N/A	1.2184 [1.0000]	121.8% { 139.5% }			
13C3_PFBs_EIS	(302.0 / 80.0) 852873	(6.09, N/A) (N/A, -0.04, N/A)	791.2	N/A	2.2098 [2.0000]	110.5% { 128.9% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 425128	(8.00, N/A) (N/A, -0.05, N/A)	703.5	N/A	2.1240 [2.0000]	106.2% { 123.7% }			
13C8_PFOS_EIS	(507.0 / 80.0) 596239	(9.44, N/A) (N/A, -0.03, N/A)	431.8	N/A	1.8547 [2.0000]	92.7% { 108.4% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 94535	(5.81, N/A) (N/A, -0.04, N/A)	514.4	N/A	4.3439 [4.0000]	108.6% { 112.2% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 116170	(7.54, N/A) (N/A, -0.05, N/A)	510.3	N/A	4.1654 [4.0000]	104.1% { 130.6% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 91688	(8.95, N/A) (N/A, -0.03, N/A)	277.6	N/A	3.6670 [4.0000]	91.7% { 104.2% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 969676	(10.17, N/A) (N/A, -0.01, N/A)	916.3	N/A	2.0726 [2.0000]	103.6% { 116.3% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 155950	(10.60, N/A) (N/A, -0.01, N/A)	779.6	N/A	1.3380 [2.0000]	66.9% { 76.5% }			
D5_NEtFOSA_EIS	(531.1 / 169.0) 132878	(10.70, N/A) (N/A, -0.01, N/A)	570.8	N/A	1.2209 [2.0000]	61.0% { 71.9% }			



Chemist: ABK
 Instrument: Saphira
 Type: Sciex Q3 5500

Sample I.D.: BBL0355-BS1
 DF, IV: 1, 10.0µL
 Acquisition Method: 1633 2022-12-13.dam

Quant Method: 1633 - S2022-12-15A
 Path: S2022-12-20A (12)
 Acquired: 2022/12/20 - 12:25

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
D3_MeFOSAA_EIS	(573.0 / 419.0) 319248	(9.49 , N/A) (N/A , -0.02 , N/A)	415.3	N/A	4.2336 [4.0000]	105.8% { 135.5% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 306013	(9.67 , N/A) (N/A , -0.02 , N/A)	261.0	N/A	4.8828 [4.0000]	122.1% { 136.7% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 414523	(10.57 , N/A) (N/A , -0.01 , N/A)	843.2	N/A	18.4891 [20.0000]	92.4% { 121.1% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 213787	(10.67 , N/A) (N/A , -0.01 , N/A)	1079.2	N/A	17.7078 [20.0000]	88.5% { 107.7% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 761552	(6.48 , N/A) (N/A , -0.03 , N/A)	858.6	N/A	7.3096 [8.0000]	91.4% { 116.5% }			

ANALYSIS DATA SHEET

MRL Check

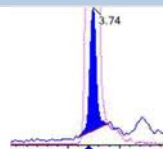
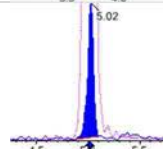
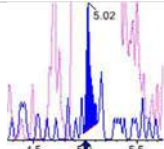
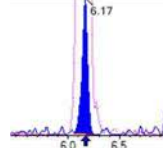
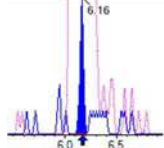
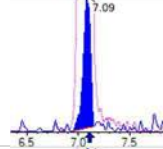
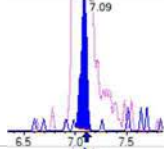
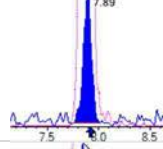
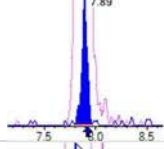
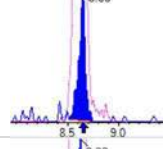
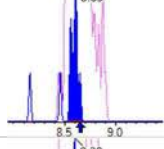
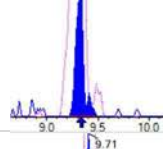
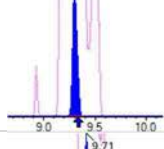
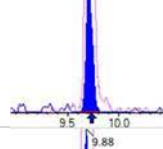
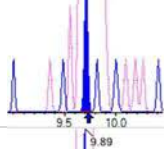
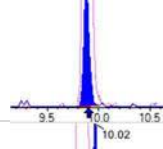
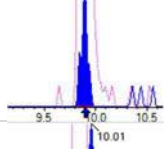
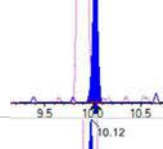
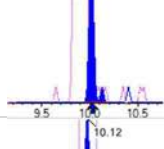
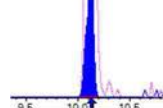
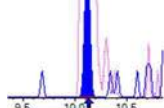
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Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BBL0355-MRL1
Sampled:		Prepared:	12/19/22 08:59
Solids:		Preparation:	1633
Batch:	BBL0355	Sequence:	SB03903
Column:	1	Calibration:	2251019
		Instrument:	Saphira
		File ID:	S2022-12-20A (37)
		Analyzed:	12/20/22 19:04
		Dilution:	1

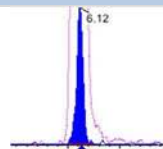
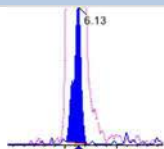
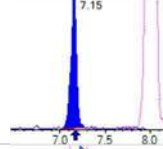
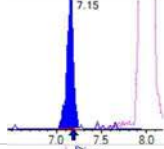
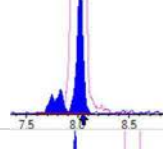
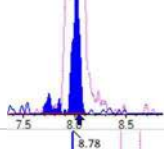
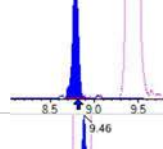
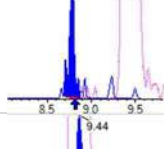
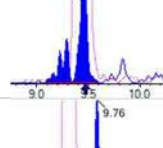
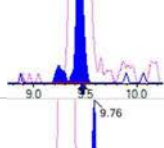
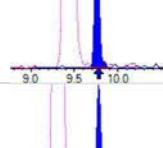
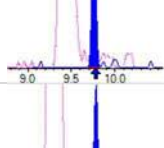
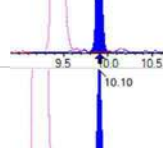
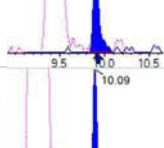
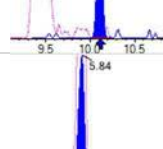
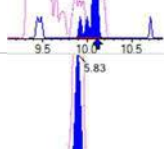
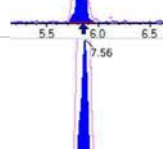
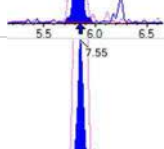
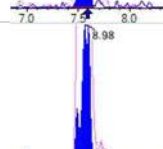
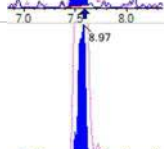

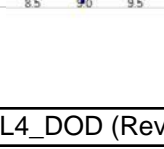
COMPOUND	CONC. (ng/L)	LOQ	DL	Q
PFBA	1.51	1.6	0.21	J
PFPEA	0.680	0.80	0.065	J
PFHXA	0.342	0.40	0.055	J
PFHPA	0.393	0.40	0.041	J
PFOA	0.440	0.40	0.15	
PFNA	0.447	0.40	0.082	IR1
PFDA	0.394	0.40	0.10	J
PFUnA	0.413	0.40	0.16	IR1
PFDOA	0.441	0.40	0.11	
PFTRDA	0.338	0.40	0.20	IR2, J
PFTEDA	0.373	0.40	0.20	J
PFBS	0.330	0.40	0.037	J
PFPEs	0.340	0.40	0.063	J
PFHXS	0.317	0.40	0.032	J
PFHPS	0.388	0.40	0.051	J
PFOS	0.400	0.40	0.064	
PFNS	0.371	0.40	0.12	J
PFDS	0.367	0.40	0.15	J
PFDOS	0.236	0.40	0.12	J
4:2FTS	1.29	1.6	0.29	J
6:2FTS	1.31	1.6	0.31	J
8:2FTS	1.09	1.6	0.082	IR2, J
PFOSA	0.371	0.40	0.10	J
NMeFOSA	1.38	1.6	0.47	J
NEtFOSA	1.19	1.6	0.41	J
NMeFOSAA	0.285	0.40	0.11	IR1, J
NEtFOSAA	0.225	0.40	0.11	IR2, J
NMeFOSE	1.39	1.6	1.0	J
NEtFOSE	1.78	1.6	1.0	
HFPO-DA	0.534	0.80	0.17	IR2, J

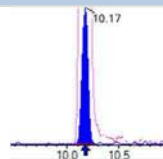
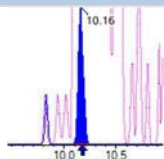
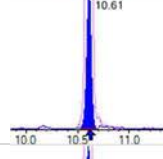
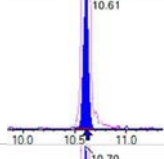
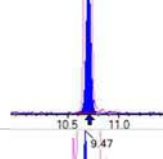
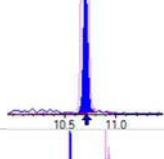
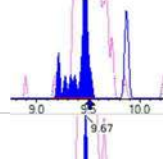
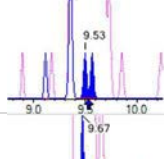
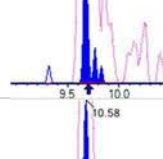
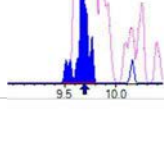
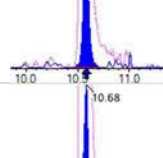
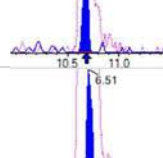
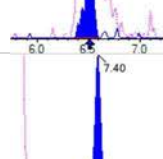
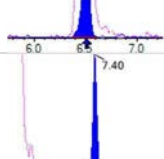
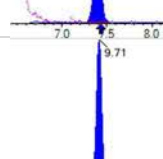
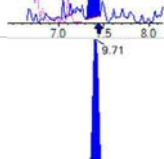
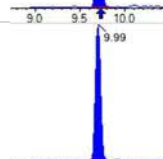
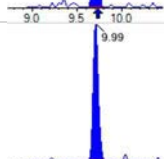
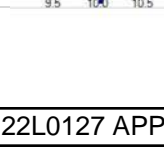
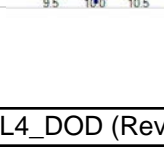
ANALYSIS DATA SHEET**MRL Check**

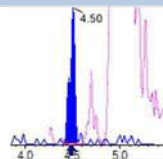
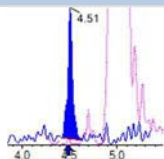
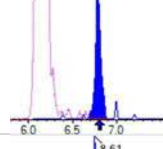
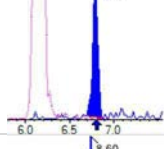
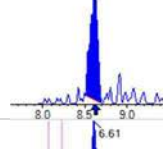
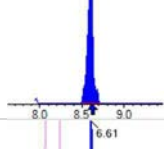
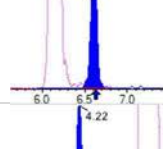
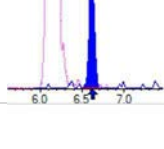
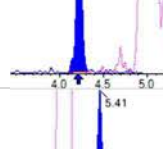
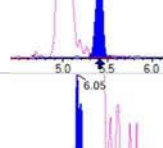
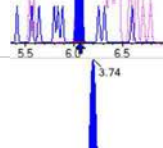
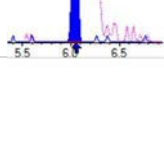
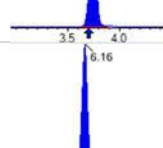
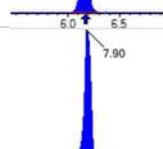
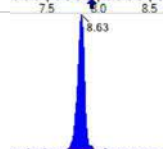

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Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Matrix:	Water	Laboratory ID:	BBL0355-MRL1
Sampled:		File ID:	S2022-12-20A (37)
		Prepared:	12/19/22 08:59
Solids:		Analyzed:	12/20/22 19:04
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Batch:	BBL0355	Dilution:	1
Column:	1	Sequence:	SB03903
		Calibration:	2251019
		Instrument:	Saphira

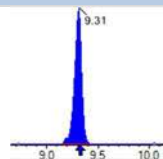
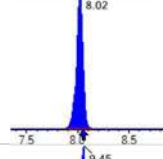
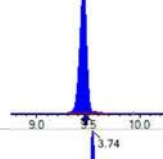
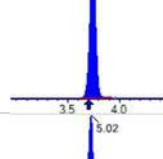
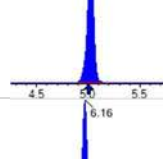
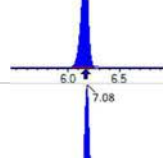
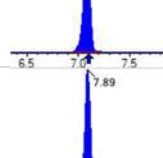
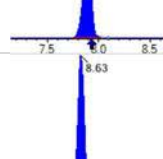
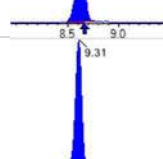
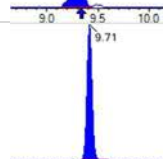

COMPOUND	CONC. (ng/L)	LOQ	DL	Q
ADONA	0.636	0.80	0.12	J
PFEESA	0.501	0.80	0.11	IR2, J
PFMPA	0.588	0.80	0.054	J
PFMBA	0.684	0.80	0.091	J
NFDHA	0.474	0.80	0.30	IR1, J
9CL-PF3ONS	0.651	0.80	0.21	J
11CL-PF3OUDS	0.701	0.80	0.21	J
3:3FTCA	1.03	1.6	0.57	IR1, J
5:3FTCA	1.21	1.6	0.44	J
7:3FTCA	1.66	1.6	0.55	

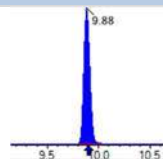
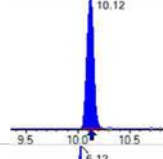
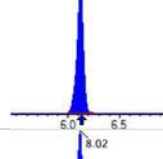
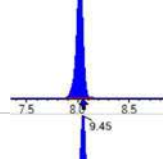
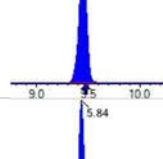
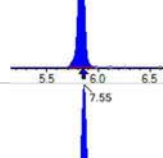
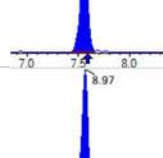
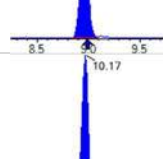
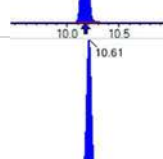
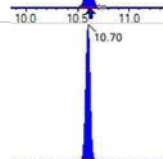
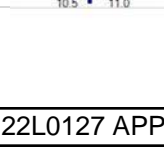
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBA	(212.9 / 169.0) 21364	(3.74, 1.00) (0.00, N/A, 0.0)	40.1	N/A 0.0 0.0	0.3784 [0.4000]	94.6%			
PFPeA	(262.9 / 219.0) 15177 (262.9 / 69.0) 218	(5.02, 1.00) (0.00, N/A, 0.0)	135.5 14.6	0.0144 16848.5 118.2	0.1701 [0.2000]	85.0%			
PFHxA	(313.0 / 269.0) 11756 (313.0 / 119.0) 752	(6.17, 1.00) (0.00, N/A, 0.1)	70.4 24.9	0.0640 65.2 67.3	0.0856 [0.1000]	85.6%			
PFHpA	(363.0 / 319.0) 10645 (363.0 / 169.0) 2833	(7.09, 1.00) (0.00, N/A, -0.1)	50.9 44.4	0.2661 85.1 92.1	0.0983 [0.1000]	98.3%			
PFOA	(413.0 / 369.0) 13942 (413.0 / 169.0) 4885	(7.89, 1.00) (0.00, N/A, -0.1)	54.9 117.1	0.3504 104.0 107.4	0.1101 [0.1000]	110.1%			
PFNA	(463.0 / 419.0) 10077 (463.0 / 169.0) 1122	(8.65, 1.00) (0.02, N/A, 3.1)	55.9 19.7	0.1114 55.5 48.8	0.1118 [0.1000]	111.8%			IR1,
PFDA	(513.0 / 469.0) 11906 (513.0 / 169.0) 1070	(9.32, 1.00) (0.01, N/A, 1.2)	57.8 9006.8	0.0899 113.0 96.7	0.0985 [0.1000]	98.5%			
PFUnA	(563.0 / 519.0) 16923 (563.0 / 169.0) 796	(9.71, 1.00) (0.00, N/A, 0.0)	73.6 31.5	0.0470 42.0 40.9	0.1033 [0.1000]	103.3%			IR1,
PFDoA	(613.0 / 569.0) 19598 (613.0 / 169.0) 3331	(9.88, 1.00) (0.00, N/A, -0.8)	159.1 70.3	0.1700 135.3 127.9	0.1103 [0.1000]	110.3%			
PFTrDA	(663.0 / 619.0) 12384 (663.0 / 169.0) 4448	(10.02, 1.01) (N/A, 0.00, 0.5)	199.0 850.1	0.3592 171.8 199.4	0.0845 [0.1000]	84.5%			IR2,
PFTeDA	(713.0 / 669.0) 11080 (713.0 / 169.0) 2534	(10.12, 1.00) (0.00, N/A, 0.2)	168.2 25.5	0.2287 100.8 107.7	0.0933 [0.1000]	93.3%			

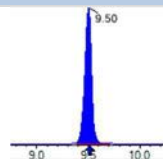
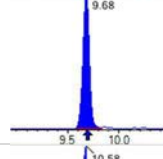
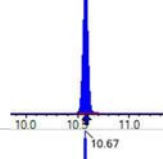
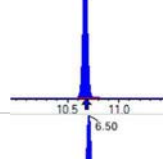
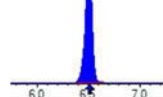
Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ RT ion[s])	S / N	Ion Ratio IR Vs MP% IR Vs CV%	Concentration [True] ng/mL	Q.C. Rec. {Area%CV}	Primary Transition	Confirmation Transition	Flag
PFBS	(298.9 / 80.0) 17700 (298.9 / 99.0) 11045	(6.12, 1.00) (0.00, N/A, -0.6)	335.3 88.0	0.6240 91.8 95.3	0.0825 [0.0885]	93.3%			
PFPeS	(349.0 / 80.0) 32121 (349.0 / 99.0) 10706	(7.15, 0.89) (N/A, -0.02, 0.3)	221.5 139.4	0.3333 89.3 74.3	0.0851 [0.0938]	90.7%			
PFHxS	(399.0 / 80.0) 25321 (399.0 / 99.0) 9121	(8.02, 1.00) (0.00, N/A, 0.3)	1746.8 686.4	0.3602 105.1 102.6	0.0791 [0.0911]	86.9%			
PFHpS	(449.0 / 80.0) 25487 (449.0 / 99.0) 5898	(8.78, 0.93) (N/A, -0.02, 0.2)	184.7 47.3	0.2314 78.9 85.6	0.0969 [0.0951]	101.8%			
PFOS	(499.0 / 80.0) 32627 (499.0 / 99.0) 10086	(9.46, 1.00) (0.01, N/A, 0.9)	240.3 436913.5	0.3091 135.3 136.1	0.1000 [0.0927]	107.9%			
PFNS	(549.0 / 80.0) 34761 (549.0 / 99.0) 8963	(9.76, 1.03) (N/A, -0.01, -0.1)	144.1 97.7	0.2579 103.3 94.2	0.0927 [0.0960]	96.6%			
PFDS	(599.0 / 80.0) 42452 (599.0 / 99.0) 12271	(9.90, 1.05) (N/A, -0.02, -0.3)	197.1 77.9	0.2891 113.4 133.7	0.0917 [0.0963]	95.3%			
PFDoS	(698.9 / 80.0) 14278 (698.9 / 99.0) 3460	(10.10, 1.07) (N/A, -0.01, 0.9)	94.2 85.0	0.2423 117.9 106.7	0.0591 [0.0970]	61.0%			QC,
4:2FTS	(327.0 / 307.0) 24434 (327.0 / 81.0) 15027	(5.84, 1.00) (0.00, N/A, 0.4)	372.2 97.3	0.6150 123.0 110.7	0.3224 [0.3738]	86.2%			
6:2FTS	(427.0 / 407.0) 13592 (427.0 / 81.0) 9357	(7.56, 1.00) (0.01, N/A, 0.6)	114.6 94.5	0.6884 96.1 104.1	0.3268 [0.3796]	86.1%			
8:2FTS	(527.0 / 507.0) 10072 (527.0 / 81.0) 10669	(8.98, 1.00) (0.01, N/A, 0.8)	302102.1 134.0	1.0592 150.6 178.6	0.2718 [0.3833]	70.9%			IR2,

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 42770 (498.0 / 478.0) 1233	(10.17, 1.00) (0.00, N/A, 0.9)	230.4 8300.0	0.0288 122.0 142.6	0.0928 [0.1000]	92.8%			
NMeFOSA	(511.9 / 219.0) 18839 (511.9 / 169.0) 14219	(10.61, 1.00) (0.00, N/A, 0.0)	202.5 339.9	0.7548 108.3 107.3	0.3447 [0.4000]	86.2%			
NEIFOSA	(526.0 / 219.0) 18650 (526.0 / 169.0) 20069	(10.70, 1.00) (0.01, N/A, 0.0)	397.3 191.6	1.0761 95.5 101.8	0.2981 [0.4000]	74.5%			
NMeFOSAA	(570.0 / 419.0) 4105 (570.0 / 483.0) 541	(9.47, 1.00) (-0.03, N/A, -3.7)	123969.1 37.9	0.1318 28.1 29.0	0.0713 [0.1000]	71.3%			IR1,
NEIFOSAA	(584.0 / 419.0) 3688 (584.0 / 526.0) 3977	(9.67, 1.00) (-0.01, N/A, 0.0)	91.8 1093.2	1.0785 140.0 209.8	0.0563 [0.1000]	56.3%			QC,IR2,
NMeFOSE	(616.1 / 59.0) 8268	(10.58, 1.00) (0.00, N/A, 0.0)	104.4	N/A 0.0 0.0	0.3471 [0.4000]	86.8%			
NEtFOSE	(630.0 / 59.0) 2730	(10.68, 1.00) (0.01, N/A, 0.0)	95.7	N/A 0.0 0.0	0.4453 [0.4000]	111.3%			
HFPO-DA	(285.0 / 169.0) 7734 (285.0 / 185.0) 30633	(6.51, 1.00) (0.00, N/A, 0.3)	126.0 260.8	3.9607 155.3 141.8	0.1334 [0.2000]	66.7%			QC,IR2,
ADONA	(377.0 / 85.0) 38193 (377.0 / 251.0) 5912	(7.40, 1.14) (N/A, -0.04, -0.3)	376.9 38.6	0.1548 123.4 131.0	0.1589 [0.1885]	84.3%			
9CI-Pf3ONS	(531.0 / 351.0) 110949 (533.0 / 353.0) 34727	(9.71, 1.49) (N/A, -0.01, 0.3)	306.5 107.1	0.3130 98.8 105.6	0.1628 [0.1867]	87.2%			
11CI-PF3OUDS	(631.0 / 451.0) 78734 (633.0 / 453.0) 22141	(9.99, 1.54) (N/A, -0.01, 0.1)	1796.2 286.6	0.2812 96.1 87.5	0.1754 [0.1886]	93.0%			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 985 (241.0 / 117.0) 1874	(4.50, 0.90) (N/A, 0.02, -0.1)	59.8 38.3	1.9028 0.1 109.2	0.2573 [0.4000]	64.3%			QC,IR1,
5:3FTCA	(341.0 / 236.7) 8444 (341.0 / 217.0) 15486	(6.79, 1.10) (N/A, -0.01, -0.2)	120.7 85.2	1.8339 116.1 115.7	0.3019 [0.4000]	75.5%			
7:3FTCA	(441.0 / 317.0) 13079 (441.0 / 337.0) 10621	(8.61, 1.40) (N/A, -0.01, 0.5)	37.0 845.0	0.8121 99.9 94.1	0.4143 [0.4000]	103.6%			
PFEESA	(315.0 / 135.0) 17665 (315.0 / 83.0) 8978	(6.61, 1.07) (N/A, -0.01, -0.1)	233.8 128.9	0.5083 179.8 190.9	0.1252 [0.1785]	70.2%			IR2,
PFMPA	(229.0 / 85.0) 3541	(4.22, 0.84) (N/A, 0.02, 0.0)	134.1	N/A 0.0 0.0	0.1471 [0.2000]	73.5%			
PFMBA	(279.0 / 85.0) 13435	(5.41, 1.08) (N/A, 0.01, 0.0)	344.8	N/A 0.0 0.0	0.1709 [0.2000]	85.4%			
NFDHA	(201.0 / 85.0) 635 (295.0 / 201.0) 3856	(6.05, 0.98) (N/A, -0.01, 0.4)	18.9 252.8	6.0682 0.8 89.7	0.1185 [0.2000]	59.3%			QC,IR1,
13C3_PFBA_IIS	(216.0 / 172.0) 82684	(3.74, N/A) (N/A, 0.04, N/A)	930.9	N/A	0.9457 [1.0000]	94.6% {115.1%}			
13C2_PFHxA_IIS	(315.1 / 270.0) 145059	(6.16, N/A) (N/A, -0.01, N/A)	760.5	N/A	1.1025 [1.0000]	110.2% {124.2%}			
13C4_PFOA_IIS	(417.0 / 372.0) 132100	(7.90, N/A) (N/A, -0.03, N/A)	496.5	N/A	1.0554 [1.0000]	105.5% {130.9%}			
13C5_PFNA_IIS	(468.0 / 423.0) 84875	(8.63, N/A) (N/A, -0.02, N/A)	315.9	N/A	0.8503 [1.0000]	85.0% {87.4%}			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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	(515.1 / 470.1) 104975	(9.31, N/A) (N/A, -0.01, N/A)	449.3	N/A	1.0123 [1.0000]	101.2% { 153.3% }			
18O2_PFHxS_IIS	(403.0 / 83.9) 246280	(8.02, N/A) (N/A, -0.03, N/A)	654.2	N/A	1.0410 [1.0000]	104.1% { 116.7% }			
13C4_PFOS_IIS	(502.8 / 79.9) 196604	(9.45, N/A) (N/A, -0.02, N/A)	399.8	N/A	0.9800 [1.0000]	98.0% { 123.6% }			
13C4_PFBA_EIS	(217.0 / 172.0) 680063	(3.74, N/A) (N/A, 0.04, N/A)	944.9	N/A	7.9442 [8.0000]	99.3% { 119.5% }			
13C5_PFPeA_EIS	(267.9 / 223.0) 394210	(5.02, N/A) (N/A, 0.02, N/A)	900.1	N/A	3.6913 [4.0000]	92.3% { 121.3% }			
13C5_PFHxA_EIS	(318.0 / 273.0) 302816	(6.16, N/A) (N/A, -0.01, N/A)	719.9	N/A	1.7733 [2.0000]	88.7% { 126.9% }			
13C4_PFHpA_EIS	(367.0 / 322.0) 239930	(7.08, N/A) (N/A, -0.02, N/A)	660.7	N/A	1.5903 [2.0000]	79.5% { 108.5% }			
13C8_PFOA_EIS	(421.0 / 376.0) 267231	(7.89, N/A) (N/A, -0.03, N/A)	700.5	N/A	1.8307 [2.0000]	91.5% { 116.3% }			
13C9_PFNA_EIS	(472.0 / 427.0) 106644	(8.63, N/A) (N/A, -0.02, N/A)	312.5	N/A	1.1503 [1.0000]	115.0% { 129.9% }			
13C6_PFDA_EIS	(519.0 / 474.0) 131161	(9.31, N/A) (N/A, -0.02, N/A)	225.6	N/A	0.9221 [1.0000]	92.2% { 121.3% }			
13C7_PFUnA_EIS	(570.0 / 525.0) 219774	(9.71, N/A) (N/A, -0.01, N/A)	529.9	N/A	1.0730 [1.0000]	107.3% { 144.9% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-[min], Δ RT- CV[min], Δ 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) 221717	(9.88, N/A) (N/A, -0.01, N/A)	541.1	N/A	0.9599 [1.0000]	96.0% { 121.7% }			
13C2_PFTeDA_EIS	(715.0 / 670.0) 124120	(10.12, N/A) (N/A, -0.01, N/A)	368.3	N/A	0.8842 [1.0000]	88.4% { 110.2% }			
13C3_PFBs_EIS	(302.0 / 80.0) 785199	(6.12, N/A) (N/A, -0.01, N/A)	699.4	N/A	1.9521 [2.0000]	97.6% { 118.7% }			
13C3_PFHxS_EIS	(402.0 / 80.0) 402308	(8.02, N/A) (N/A, -0.03, N/A)	892.2	N/A	1.9287 [2.0000]	96.4% { 117.1% }			
13C8_PFOS_EIS	(507.0 / 80.0) 593433	(9.45, N/A) (N/A, -0.02, N/A)	608.4	N/A	1.8375 [2.0000]	91.9% { 107.9% }			
13C2_4:2FTS_EIS	(329.0 / 81.0) 95064	(5.84, N/A) (N/A, -0.01, N/A)	515.6	N/A	4.1915 [4.0000]	104.8% { 112.8% }			
13C2_6:2FTS_EIS	(429.0 / 81.0) 107756	(7.55, N/A) (N/A, -0.04, N/A)	442.2	N/A	3.7073 [4.0000]	92.7% { 121.2% }			
13C2_8:2FTS_EIS	(529.0 / 81.0) 101115	(8.97, N/A) (N/A, -0.02, N/A)	382.7	N/A	3.8804 [4.0000]	97.0% { 114.9% }			
13C8_PFOsa_EIS	(506.0 / 78.0) 926574	(10.17, N/A) (N/A, 0.00, N/A)	625.2	N/A	1.9714 [2.0000]	98.6% { 111.1% }			
D3_NMeFOSA_EIS	(515.0 / 169.0) 137002	(10.61, N/A) (N/A, -0.01, N/A)	811.5	N/A	1.1700 [2.0000]	58.5% { 67.2% }			
D5_NEiFOSA_EIS	(531.1 / 169.0) 137221	(10.70, N/A) (N/A, -0.01, N/A)	1193.5	N/A	1.2550 [2.0000]	62.8% { 74.3% }			

Analyte	(Q1 / Q3) Area Counts*min	R.T. (R.T [min], R.R.T.) (Δ RT-I[μ min], Δ RT- CV[μ min], Δ 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) 317869	(9.50, N/A) (N/A, -0.01, N/A)	392.1	N/A	4.1959 [4.0000]	104.9% { 134.9% }			
D5_EtFOSAA_EIS	(589.0 / 419.0) 290535	(9.68, N/A) (N/A, -0.01, N/A)	271.2	N/A	4.6145 [4.0000]	115.4% { 129.8% }			
D7_NMeFOSE_EIS	(623.2 / 58.9) 374111	(10.58, N/A) (N/A, 0.00, N/A)	738.5	N/A	16.6097 [20.0000]	83.0% { 109.3% }			
D9_NEtFOSE_EIS	(639.2 / 58.9) 192124	(10.67, N/A) (N/A, -0.01, N/A)	1135.5	N/A	15.8402 [20.0000]	79.2% { 96.8% }			
13C3_HFPODA_EIS	(287.0 / 169.0) 758882	(6.50, N/A) (N/A, -0.01, N/A)	774.1	N/A	7.2991 [8.0000]	91.2% { 116.0% }			

PREPARATION BATCH SUMMARY

EPA 1633

Laboratory:	APPL, LLC	Work Order:	22L0127
Client:	AECOM	Project:	Red Hill AFFF Assessment Sampling
Batch:	BBL0355	Batch Matrix:	Water
		Preparation:	1633

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT g	FINAL VOL. ml
AF-RHMW04-WGN01B-2212W2	22L0127-01	12/19/22 08:59	554.59	2.00
AF-RHMW10-WGN01B-2212W2	22L0127-02	12/19/22 08:59	541.54	2.00
AF-RHMW10-WGN01B-2212W2	22L0127-02RE1	12/19/22 08:59	541.54	2.00
Blank	BBL0355-BLK1	12/19/22 08:59	500.00	2.00
LCS	BBL0355-BS1	12/19/22 08:59	500.00	2.00
MRL Check	BBL0355-MRL1	12/19/22 08:59	500.00	2.00

PREPARATION BENCH SHEET

Organics

BBL0355

Print Date/Time: 12/20/2022 1:58 pm

Matrix: Water

Prepared using: PFAS - 1633

Lab Number	Sample and Source ID	Date Due	Extract by	Prepared	Initial (g)	Final (ml)	ul Spike	ul Surrogate	Extraction Comments
22L0083-02RE2	AF-RHMW03-WGN01LF-2212W2	12/15/2022	01/09/2023	12/19/2022 8:59:00AM	553.54	2		200	Re-extract added 12/16/2022 by ABK
22L0083-02RE3	AF-RHMW03-WGN01LF-2212W2	12/15/2022	01/09/2023	12/19/2022 8:59:00AM	553.54	2		200	Re-extract added 12/16/2022 by ABK
22L0083-03RE2	AF-RHMW02-WGN01LF-2212W2	12/15/2022	01/09/2023	12/19/2022 8:59:00AM	544.64	2		200	Re-extract added 12/16/2022 by ABK
22L0083-03RE3	AF-RHMW02-WGN01LF-2212W2	12/15/2022	01/09/2023	12/19/2022 8:59:00AM	544.64	2		200	Re-extract added 12/16/2022 by ABK
22L0127-01	AF-RHMW04-WGN01B-2212W2	12/21/2022	01/12/2023	12/19/2022 8:59:00AM	554.59	2		200	"Report relevant surrogates"
22L0127-01RE1	AF-RHMW04-WGN01B-2212W2	12/21/2022	01/12/2023	12/19/2022 8:59:00AM	554.59	2		200	"Report relevant surrogates"
22L0127-02	AF-RHMW10-WGN01B-2212W2	12/21/2022	01/12/2023	12/19/2022 8:59:00AM	541.54	2		200	"Report relevant surrogates"
22L0127-02RE1	AF-RHMW10-WGN01B-2212W2	12/21/2022	01/12/2023	12/19/2022 8:59:00AM	541.54	2		200	"Report relevant surrogates"
BBL0355-BLK1	Blank			12/19/2022 8:59:00AM	500	2	0	200	
BBL0355-BS1	LCS			12/19/2022 8:59:00AM	500	2	200	200	
BBL0355-MRL1	MRL Check			12/19/2022 8:59:00AM	500	2	20	200	

Spiking Solution(s)
22L0269 PFAS - MIX 1633 10ng/mL

Surrogate Solution(s)
22L0272 MPFAC-HIF-ES 20.0ng/mL

Start Date/Time

Stop Date/Time

Batch Comments:

Standard	Description	LotNum
22C0296	Envi-carb	122395
22K0511	Reagent -0.3M Formic Acid	M13H051
22L0094	Reagent - 0.05MFA wash	x
22L0175	Reagent - 1.0% Ammonia Hydroxide	219481
22L0224	Am. Ac. preservative	P28T056

Spiking Witnessed By

Date

Preparation Reviewed By

Date

Extracts Received By

Date

PREPARATION BENCH SHEET

Organics

Print Date/Time: 12/20/2022 1:58 pm

BBL0355

(Continued)

Matrix: Water

Prepared using: PFAS - 1633

Analyses
1633

Spiking Solution(s)
22L0269 PFAS - MIX 1633 10ng/mL

Surrogate Solution(s)
22L0272 MPFAC-HIF-ES 20.0ng/mL

Spiked by: DAG 12/19/22 9:50 AM

Balance #: WB2

Cartridge: Biotage

Concentration: 12/19/22 4:10-5:50,12/20/22 725-10

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: SB03856
 Calibration: 2251019

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

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	SB03856-CAL1	S2022-12-15A (1)	12/15/22 12:33
Cal Standard	SB03856-CAL2	S2022-12-15A (2)	12/15/22 12:46
Cal Standard	SB03856-CAL3	S2022-12-15A (3)	12/15/22 12:59
Cal Standard	SB03856-CAL4	S2022-12-15A (4)	12/15/22 13:11
Cal Standard	SB03856-CAL5	S2022-12-15A (5)	12/15/22 13:24
Cal Standard	SB03856-CAL6	S2022-12-15A (6)	12/15/22 13:37
Cal Standard	SB03856-CAL7	S2022-12-15A (7)	12/15/22 13:50
Cal Standard	SB03856-CAL8	S2022-12-15A (8)	12/15/22 14:02
Initial Cal Blank	SB03856-ICB1	S2022-12-15A (9)	12/15/22 14:15
Secondary Cal Check	SB03856-SCV1	S2022-12-15A (10)	12/15/22 14:28

INJECTION LOG - ANALYSIS SEQUENCE SUMMARY

EPA 1633

Laboratory: APPL, LLC
 Client: AECOM
 Sequence: SB03903
 Calibration: 2251019

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

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Blank	SB03903-CCB1	S2022-12-20A (1)	12/20/22 09:40
Low Cal Check	SB03903-LCV1	S2022-12-20A (2)	12/20/22 09:52
Calibration Check	SB03903-CCV1	S2022-12-20A (3)	12/20/22 10:05
Calibration Blank	SB03903-CCB2	S2022-12-20A (4)	12/20/22 10:43
Calibration Blank	SB03903-CCB3	S2022-12-20A (5)	12/20/22 10:56
Blank	BBL0355-BLK1	S2022-12-20A (11)	12/20/22 12:12
LCS	BBL0355-BS1	S2022-12-20A (12)	12/20/22 12:25
AF-RHMW04-WGN01B-2212W2	22L0127-01	S2022-12-20A (14)	12/20/22 12:50
AF-RHMW10-WGN01B-2212W2	22L0127-02	S2022-12-20A (16)	12/20/22 13:16
AF-RHMW10-WGN01B-2212W2	22L0127-02RE1	S2022-12-20A (17)	12/20/22 13:29
Calibration Check	SB03903-CCV2	S2022-12-20A (22)	12/20/22 14:32
Calibration Blank	SB03903-CCB4	S2022-12-20A (23)	12/20/22 14:45
MRL Check	BBL0355-MRL1	S2022-12-20A (37)	12/20/22 19:04
Calibration Check	SB03903-CCV3	S2022-12-20A (38)	12/20/22 19:17
Calibration Blank	SB03903-CCB5	S2022-12-20A (39)	12/20/22 19:30

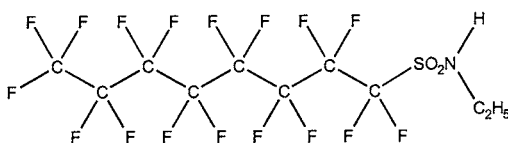


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSA-M **LOT NUMBER:** NEtFOSA0821M
COMPOUND: N-ethylperfluoro-1-octanesulfonamide

STRUCTURE: **CAS #:** 4151-50-2



MOLECULAR FORMULA: $C_{10}H_6F_{17}NO_2S$ **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)

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: 08/16/2021
 (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:

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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.

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.

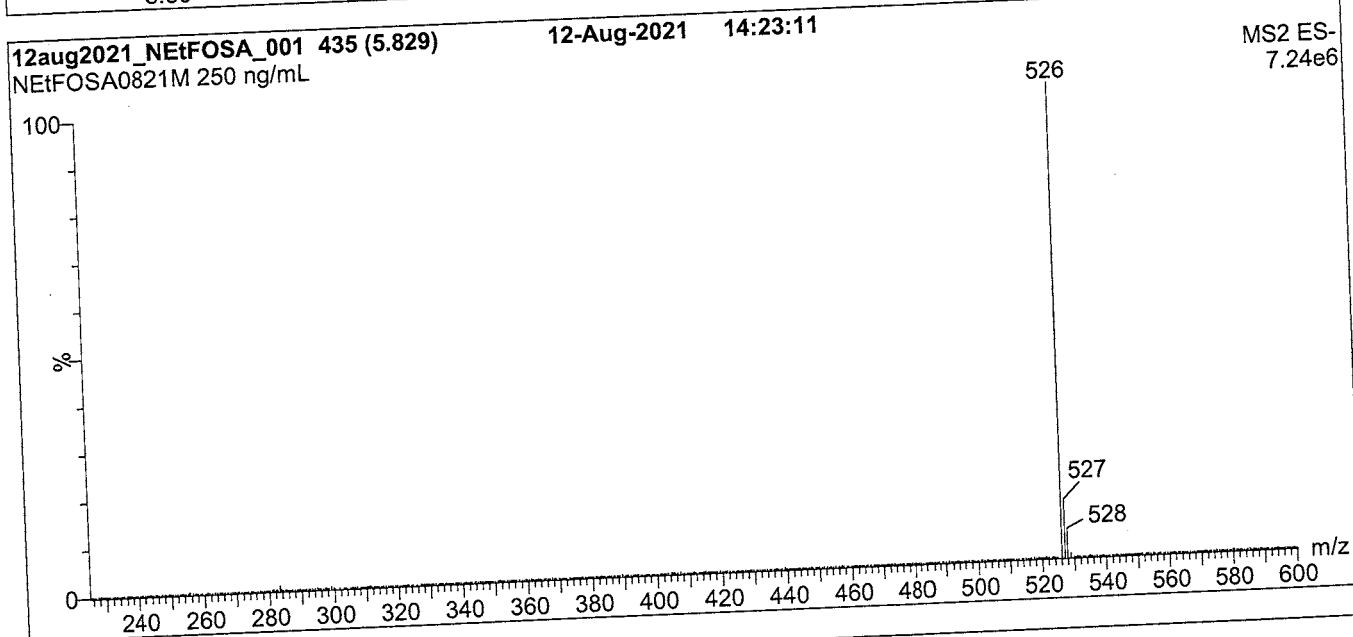
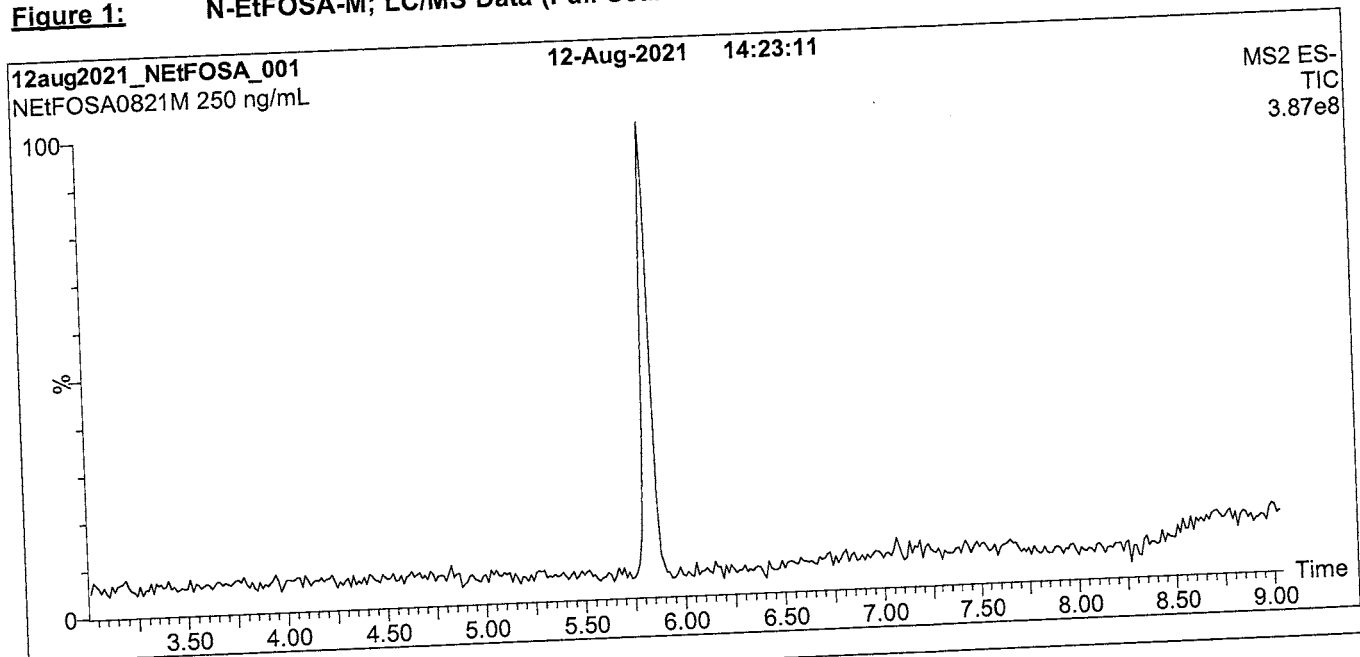
QUALITY MANAGEMENT:

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 or contact us directly at info@well-labs.com

Figure 1: N-EtFOSA-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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ L/min

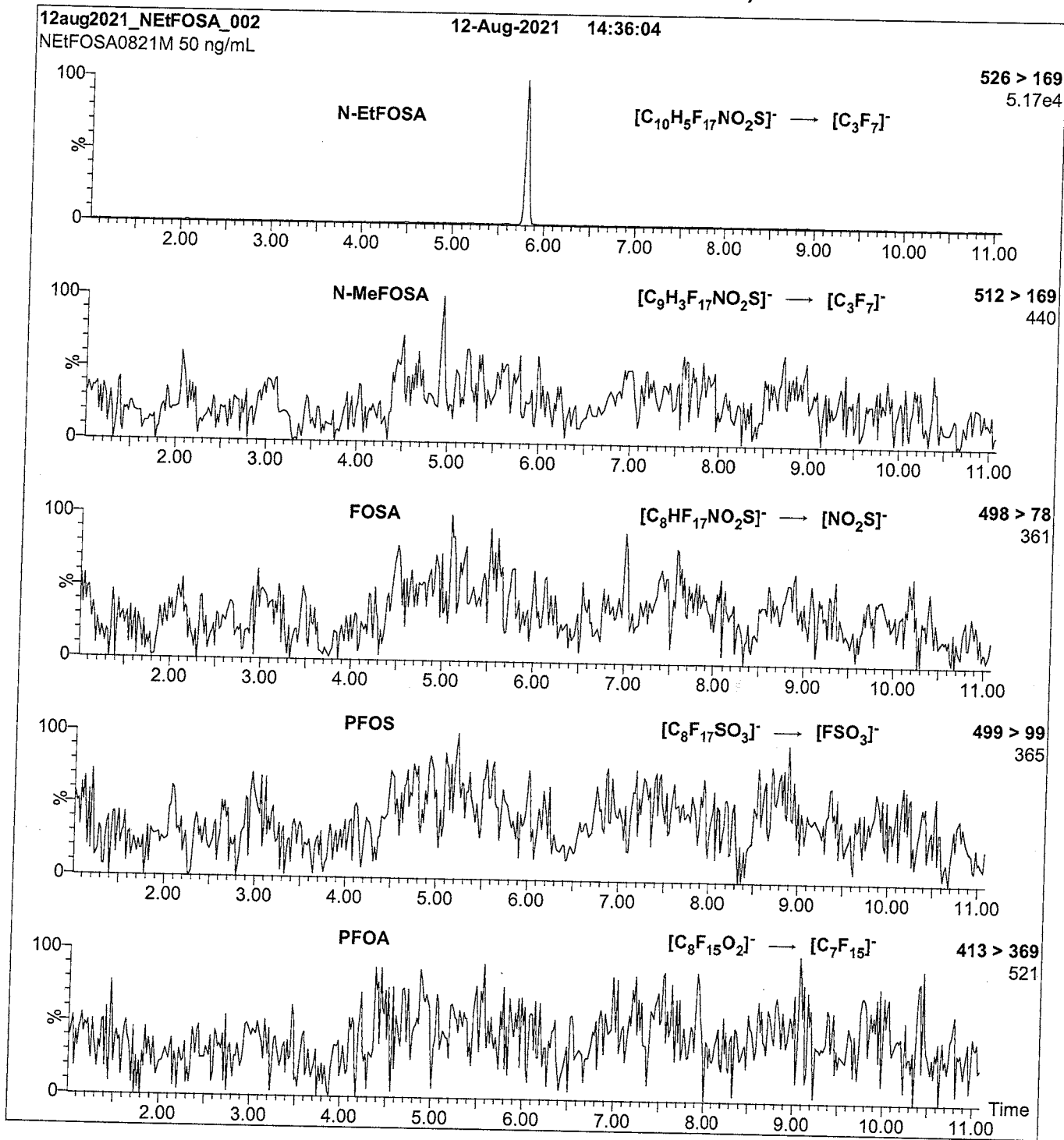
MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 1.00
Cone Voltage (V) = 44.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

NEtFOSA0821M (3 of 4)
rev0

Figure 2: N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)



Conditions for Figure 2:

Injection: On-column (N-EtFOSA-M)

Mobile phase: Same as Figure 1

Flow: 300 μ L/min

MS Parameters:

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 24

Analytical Standard Record

21J0007

Description:	PFAS - SAS N-EtFOSA 50ug/mL	Expires:	08/12/2026
Standard Type:	Analyte Spike	Prepared:	08/12/2021
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1	Department:	PFAS (Lot# OSA0821M)
Vials:	1	Last Edit:	12/07/2021 16:05 by HGH

Analyte	Parent	CAS Number	Concentration	Units
N-ETFOSA		4151-50-2	50	ug/mL

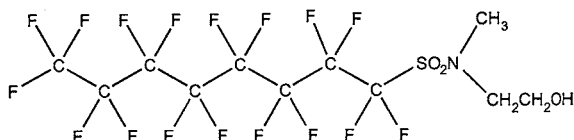


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSE-M **LOT NUMBER:** NMeFOSE0921M
COMPOUND: 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol

STRUCTURE: **CAS #:** 24448-09-7



MOLECULAR FORMULA: C₁₁H₈F₁₇NO₃S **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:

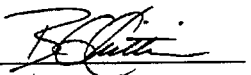
Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

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:

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

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

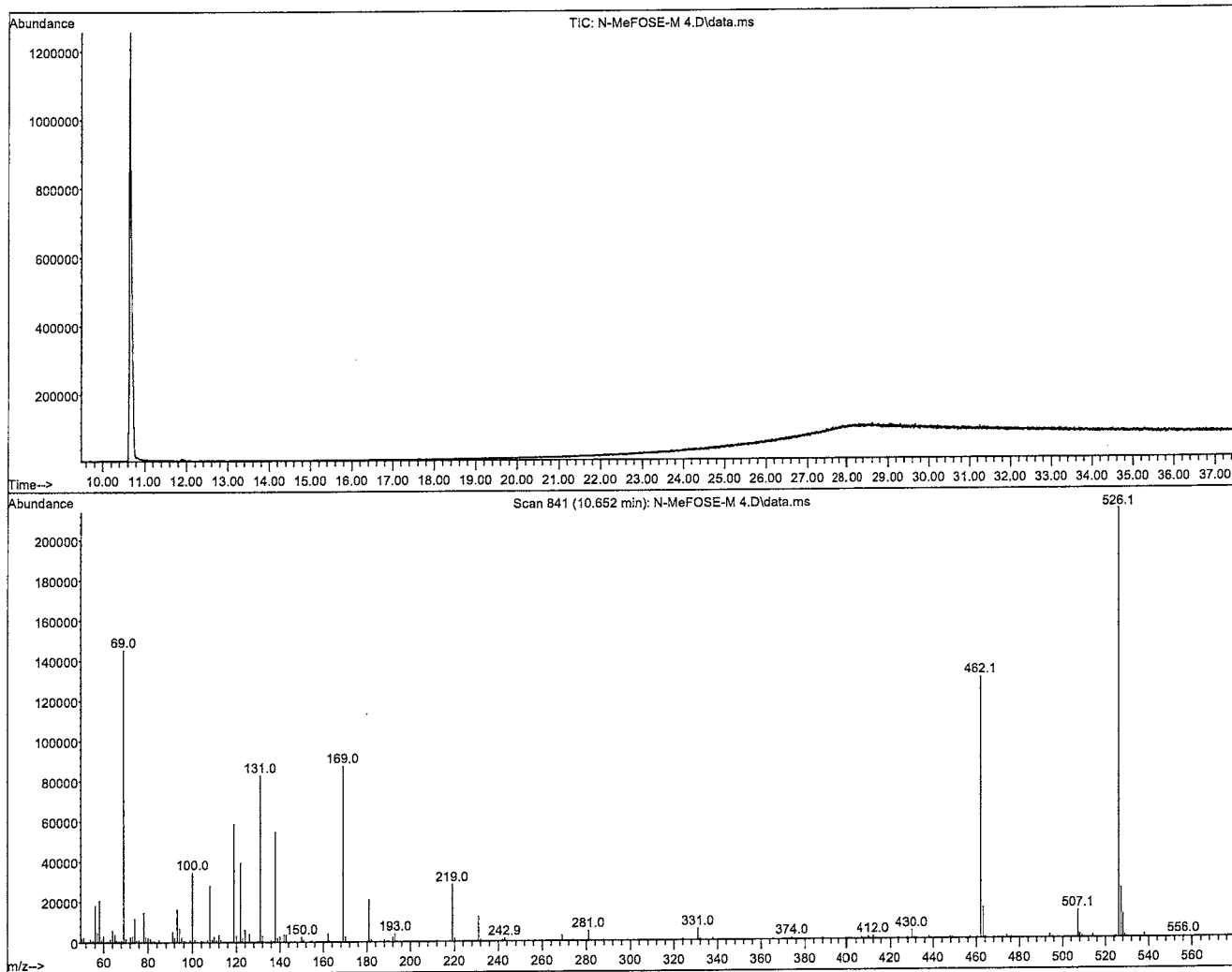
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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Figure 1: 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 μ m film thickness) Agilent J&W

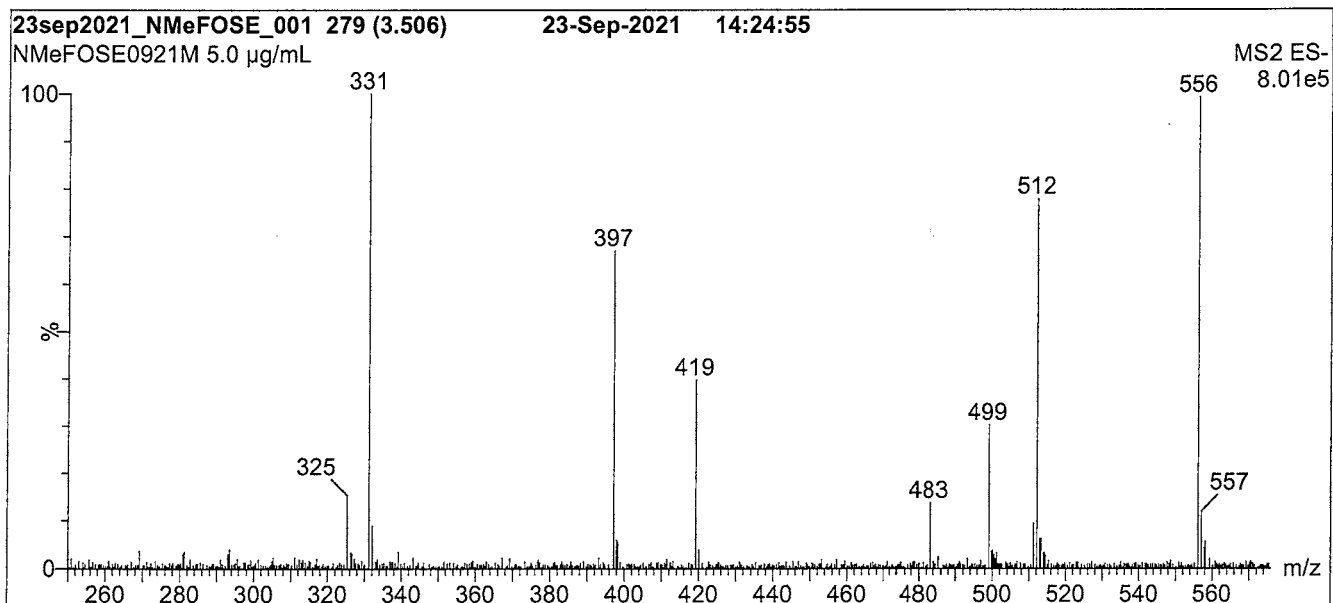
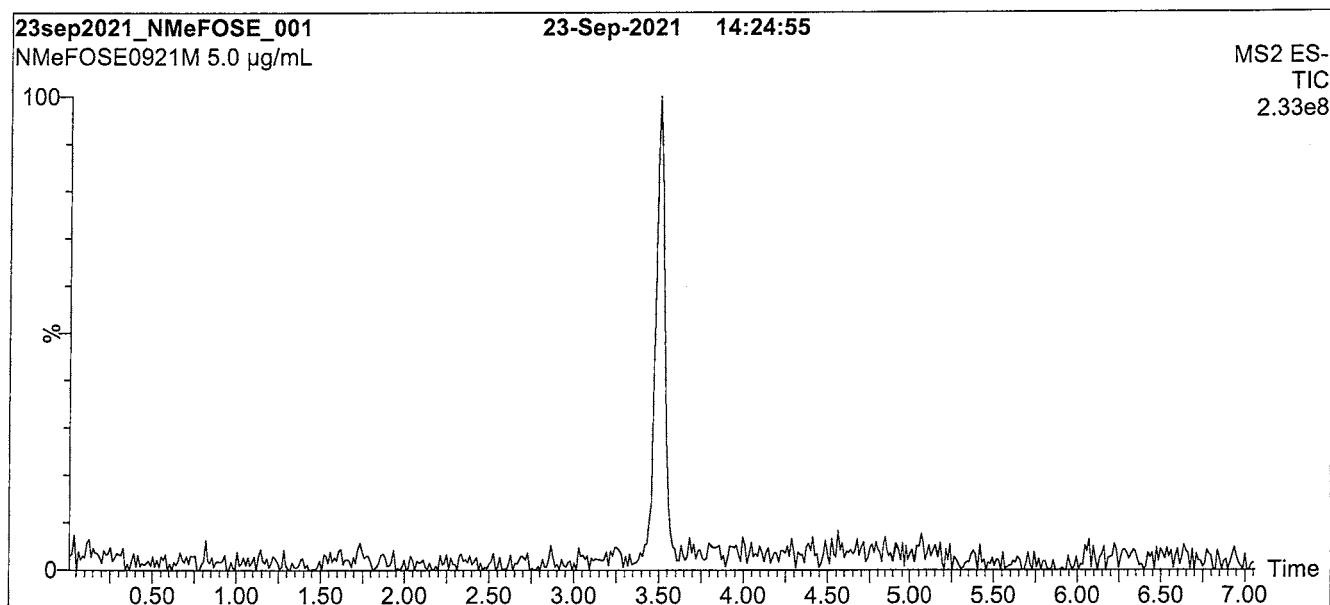
Flow: Constant at 1 mL/min

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 RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

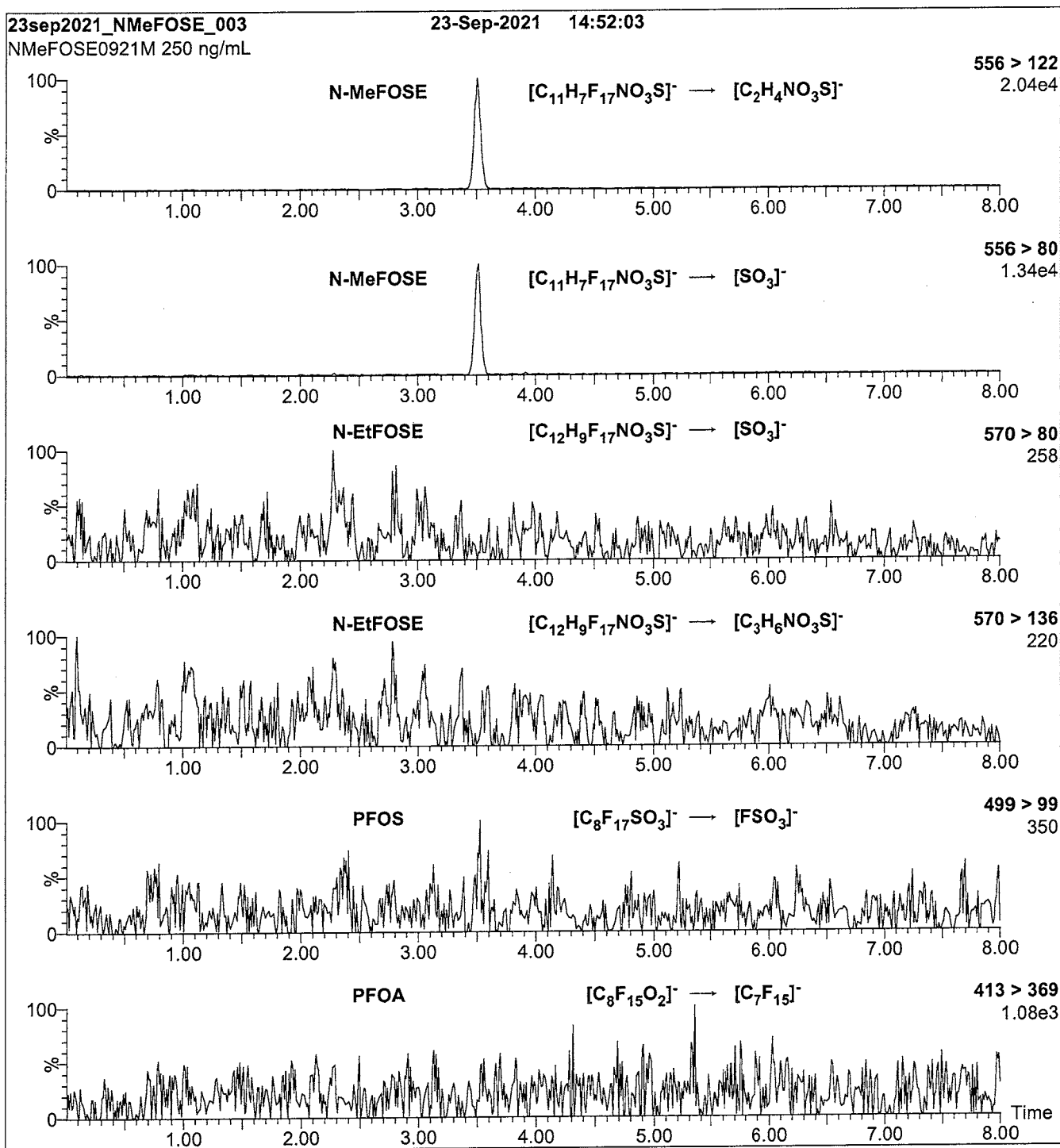
Start: 30% H₂O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

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)

MS Parameters:

Mobile phase: Same as Figure 2

Collision Gas (mbar) = 3.14e-3

Collision Energy (eV) = 36

Flow: 300 μ L/min

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Analytical Standard Record

21J0014

Description:	PFAS - SAS N-MeFOSE 50ug/mL	Expires:	09/23/2026
Standard Type:	Analyte Spike	Prepared:	09/22/2021
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFAS (N-MeFOSE0921M)
Vials:	1	Last Edit:	12/07/2021 16:06 by HGH

Analyte	Parent	CAS Number	Concentration	Units
N-MEFOSE		24448-09-7	50	ug/mL

Analytical Standard Record

21J0014

Description:	PFAS - SAS N-MeFOSE 50ug/mL	Expires:	09/23/2026
Standard Type:	Analyte Spike	Prepared:	09/22/2021
Solvent:	MeOH	Prepared By:	Wellington Laboratories (Lot#:
Final Volume (mls):	1.2	Department:	PFAS N-MEFOSE0921M)
Vials:	1	Last Edit:	12/07/2021 16:06 by HGH

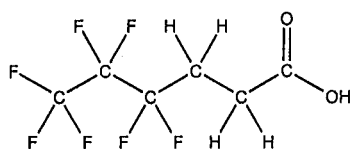
Analyte	Parent	CAS Number	Concentration	Units
N-MEFOSE		24448-09-7	50	ug/mL



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

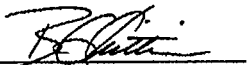
DOCUMENTATION/ DATA ATTACHED:

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

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

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LIMITED WARRANTY:

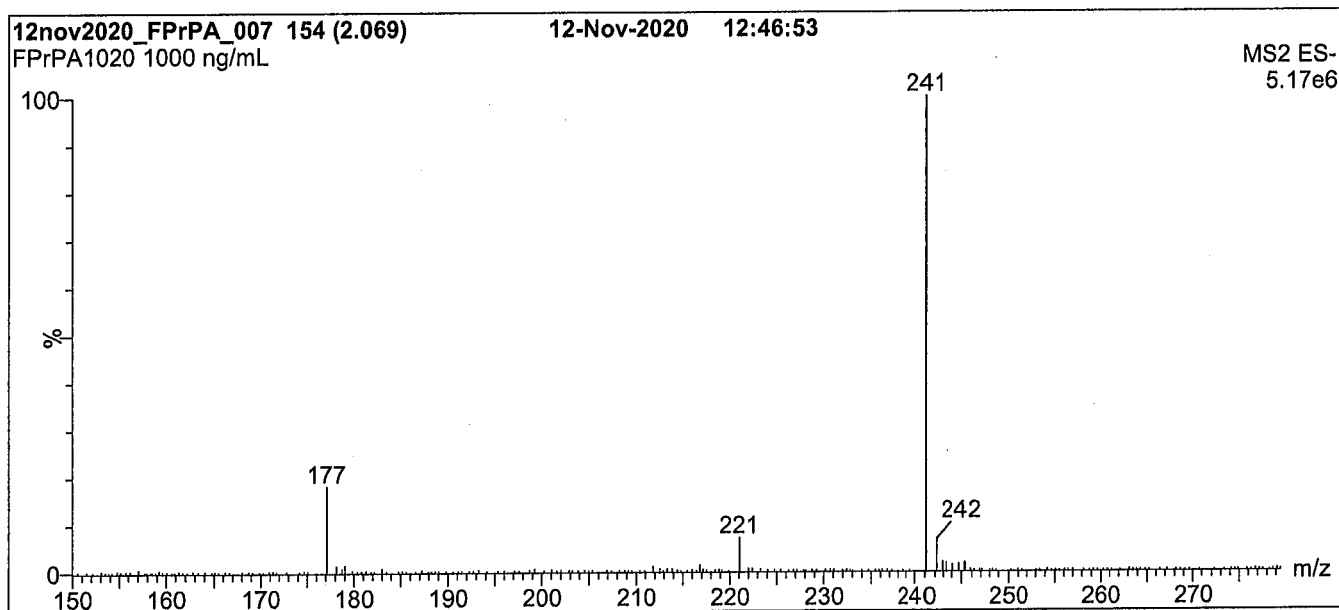
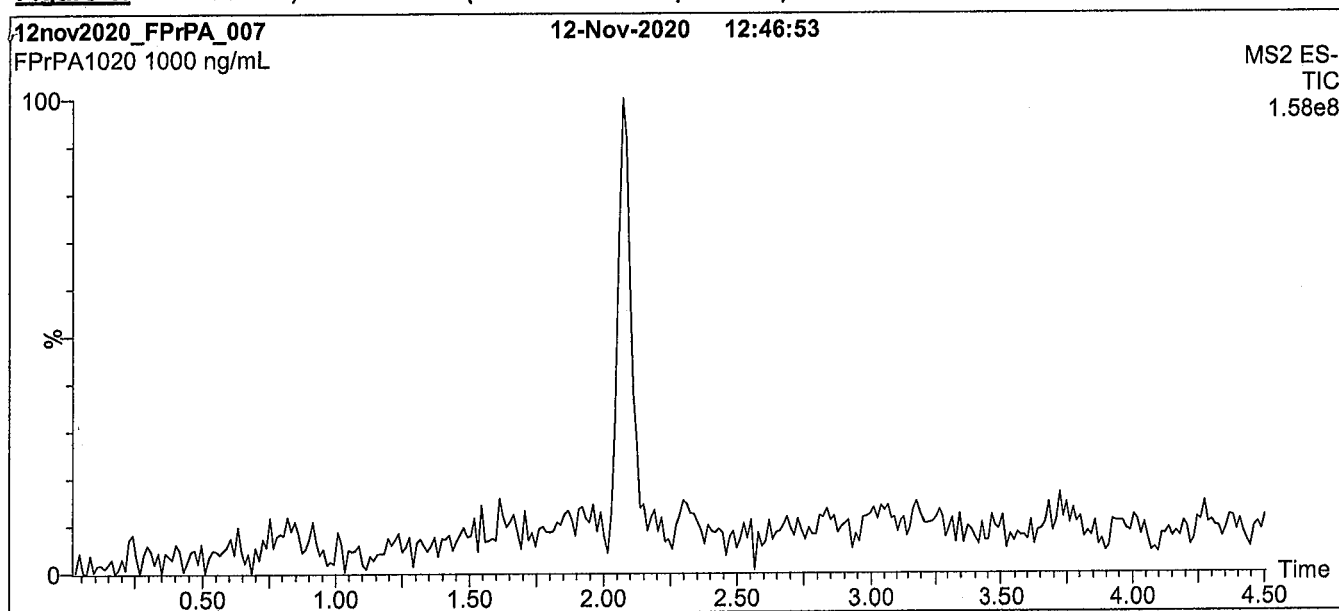
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For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ L/min

MS Parameters:

Experiment: Full Scan (150 - 850 amu)

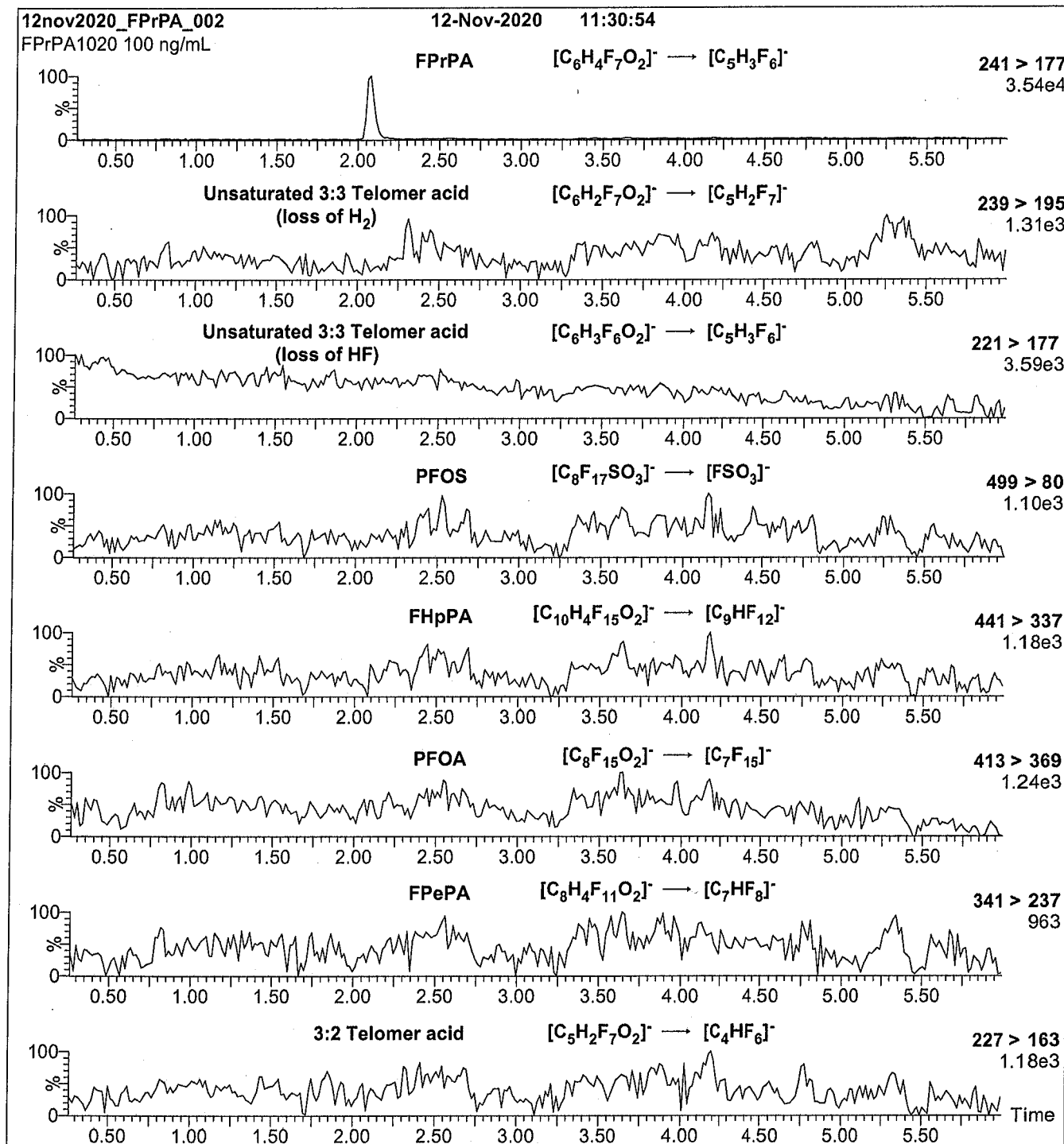
Source: Electrospray (negative)

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 μ 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		

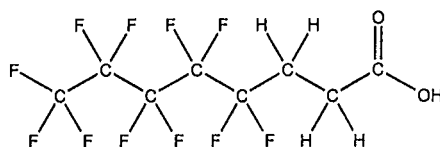
Analyte	Parent	CAS Number	Concentration	Units
3:3 FTA		113507-82-7	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FPePA **LOT NUMBER:** FPePA1120
COMPOUND: 3-Perfluoropentyl propanoic acid
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) 11/11/2020
EXPIRY DATE: (mm/dd/yyyy) 11/11/2025
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 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

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:

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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.

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:

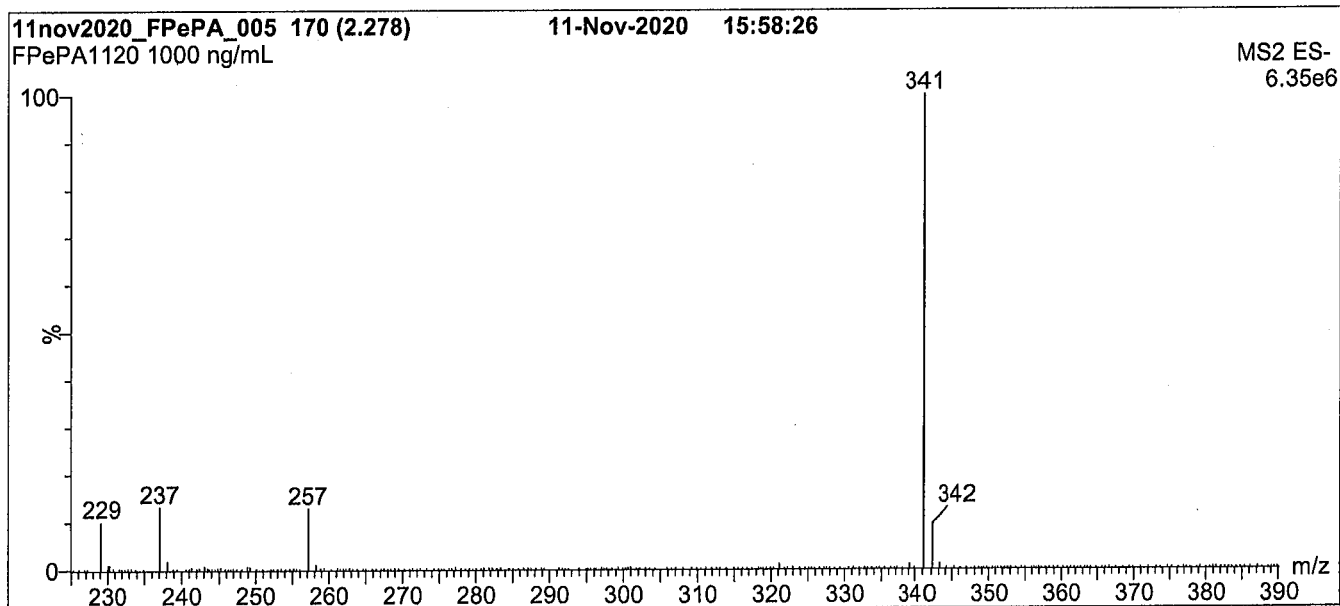
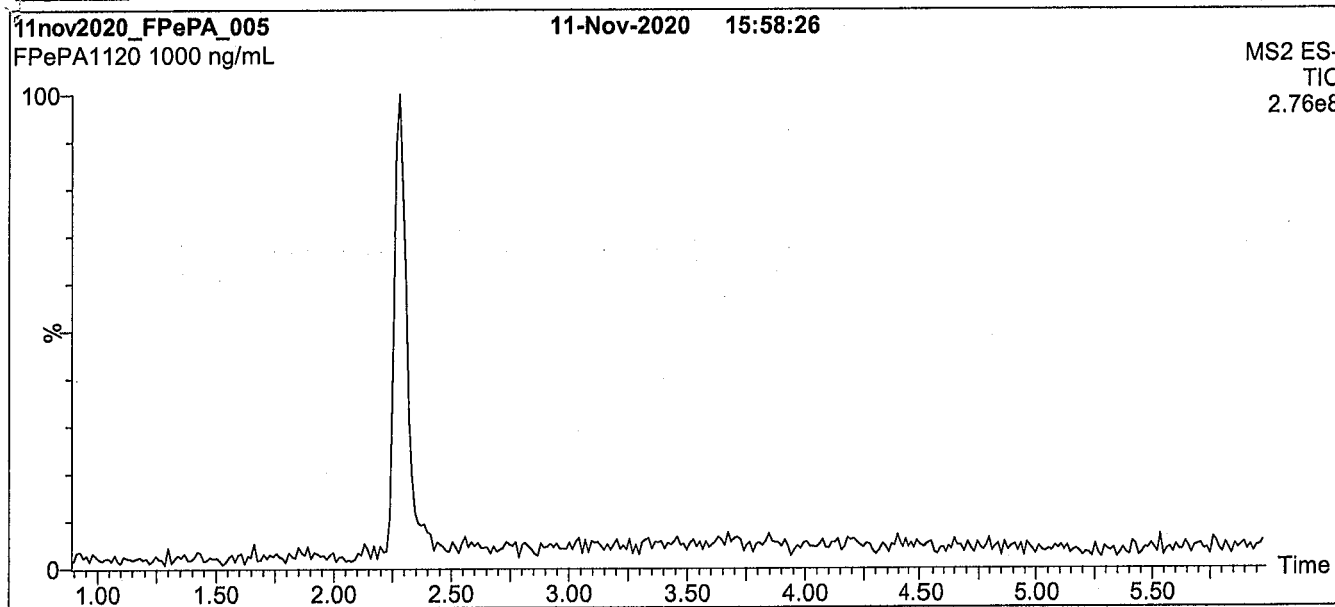
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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 or contact us directly at 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 RP₁₈
1.7 μ m, 2.1 x 100 mm

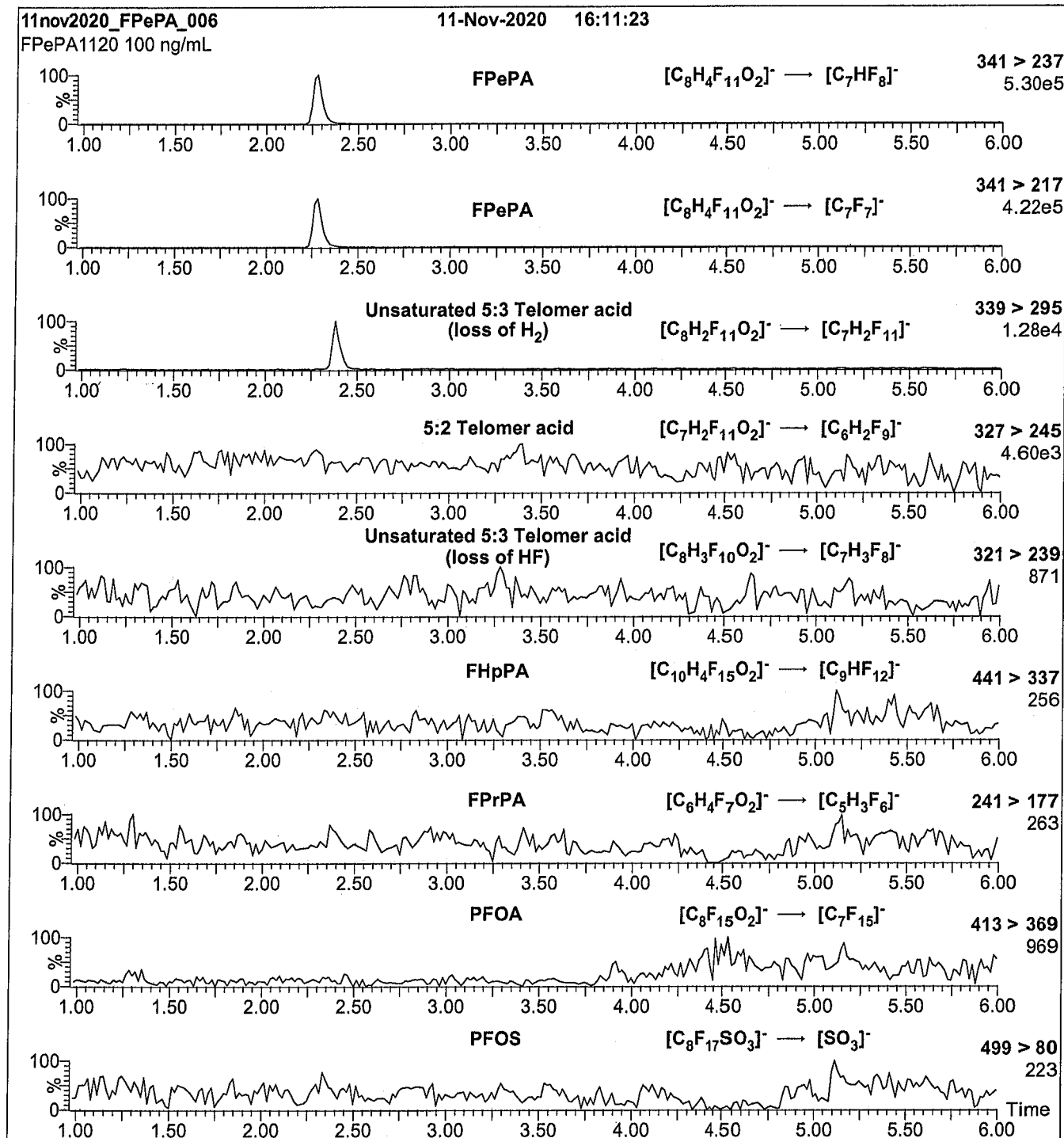
Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ 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 μ 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		

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

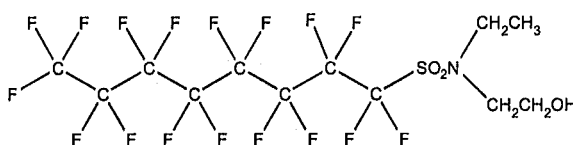


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSE-M **LOT NUMBER:** NEtFOSE0921M
COMPOUND: 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol

STRUCTURE: **CAS #:** 1691-99-2



MOLECULAR FORMULA: C₁₂H₁₀F₁₇NO₃S **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:

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UNCERTAINTY:

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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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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:

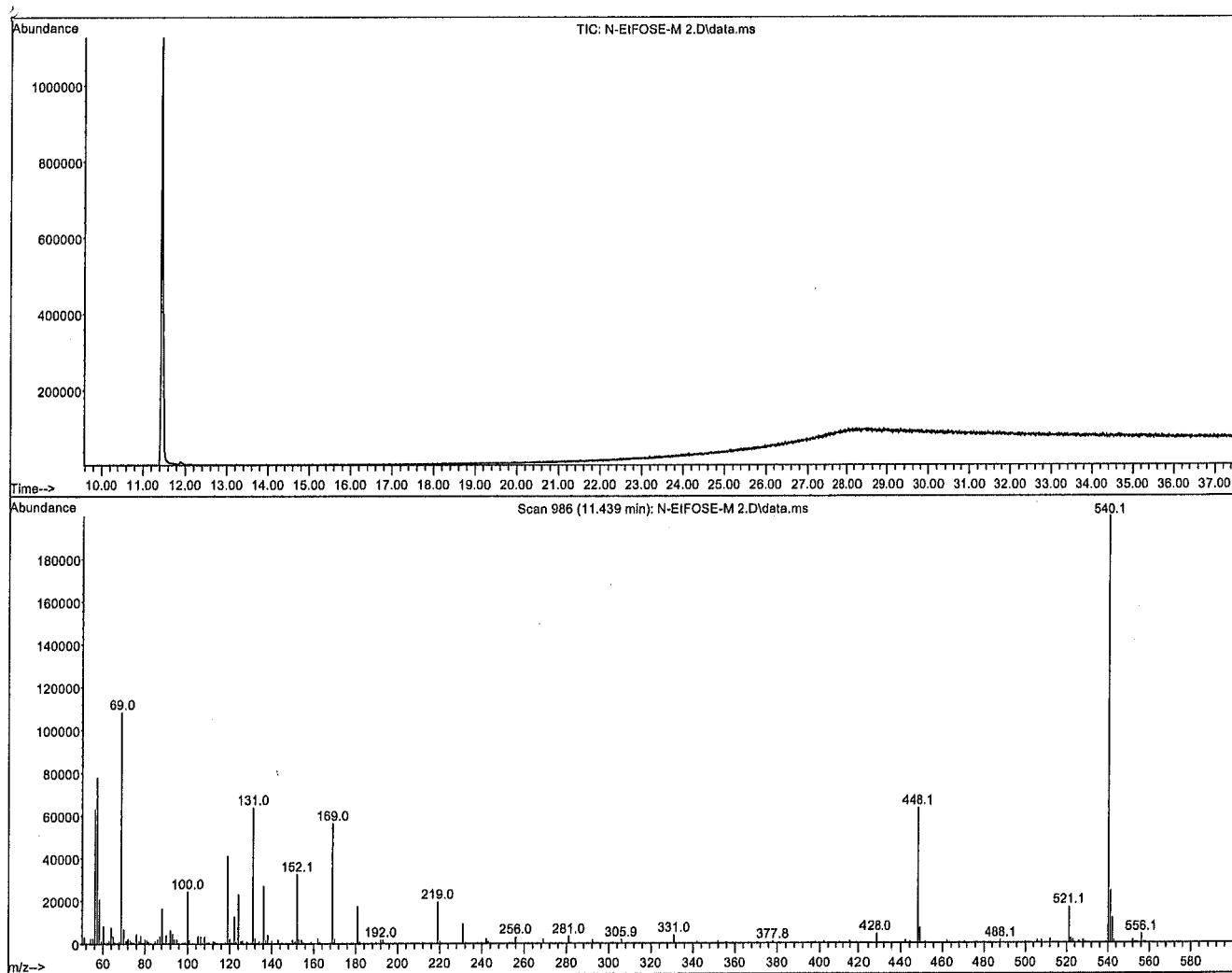
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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Figure 1: 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 μ m film thickness) Agilent J&W

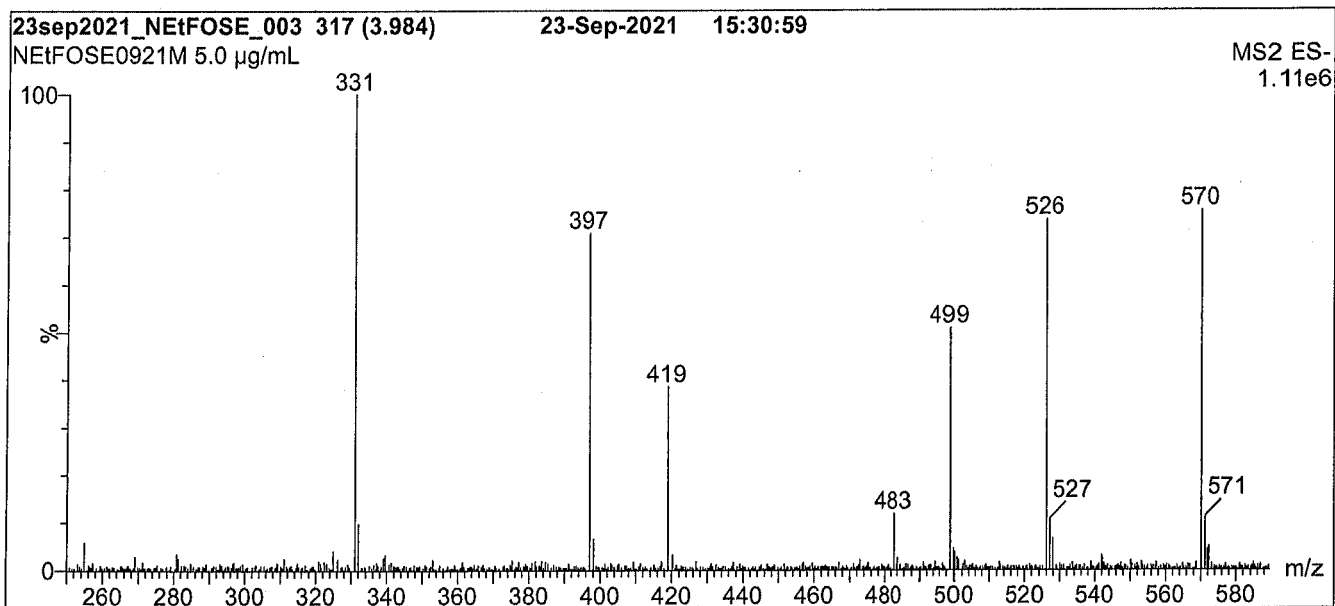
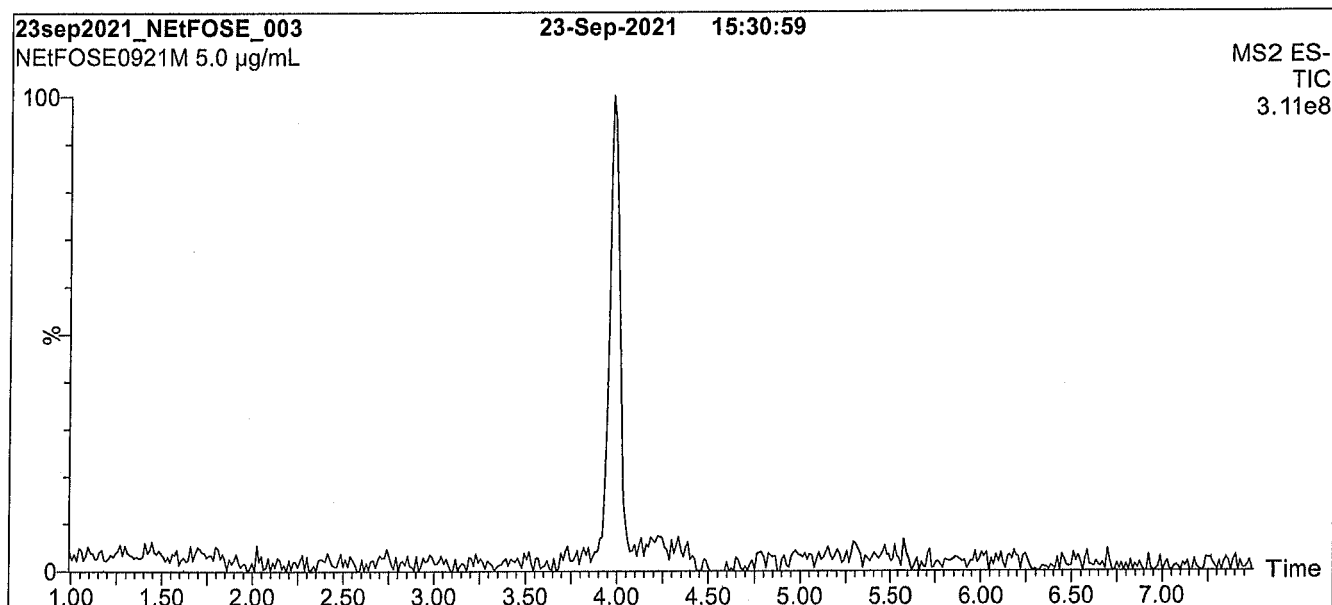
Flow: Constant at 1 mL/min

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 RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 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)

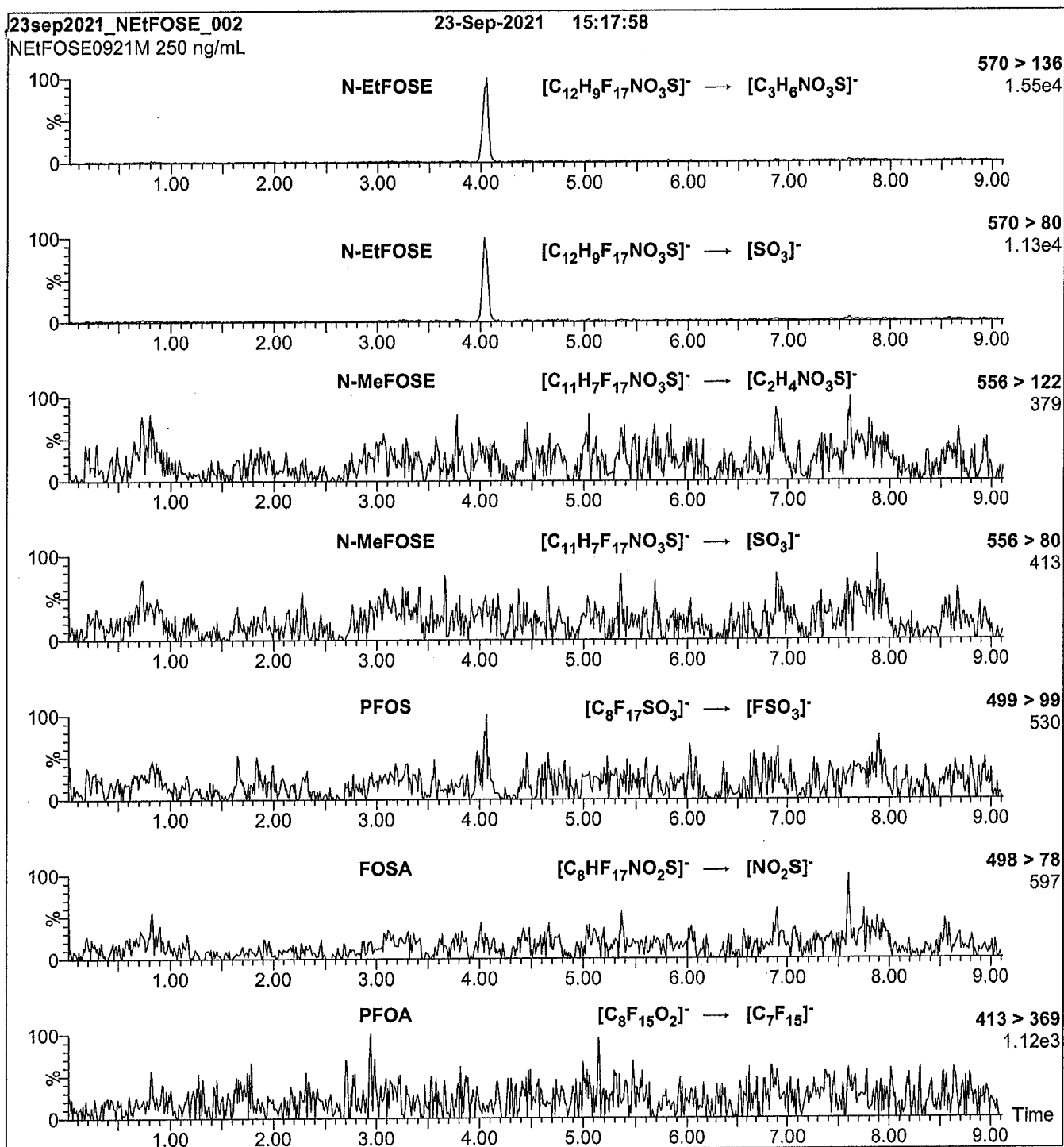
Source: Electrospray (negative)

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 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.14e-3

Collision Energy (eV) = 32

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Analytical Standard Record

21L0006

Description:	PFAS - SAS EtFOSE 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 17:22 by HGH
Comments:	5:3 FTCA 50.0ug/mL		

Analyte	Parent	CAS Number	Concentration	Units
N-ETFOSE		1691-99-2	50	ug/mL

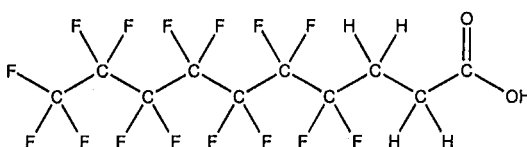


WELLINGTON LABORATORIES

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

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

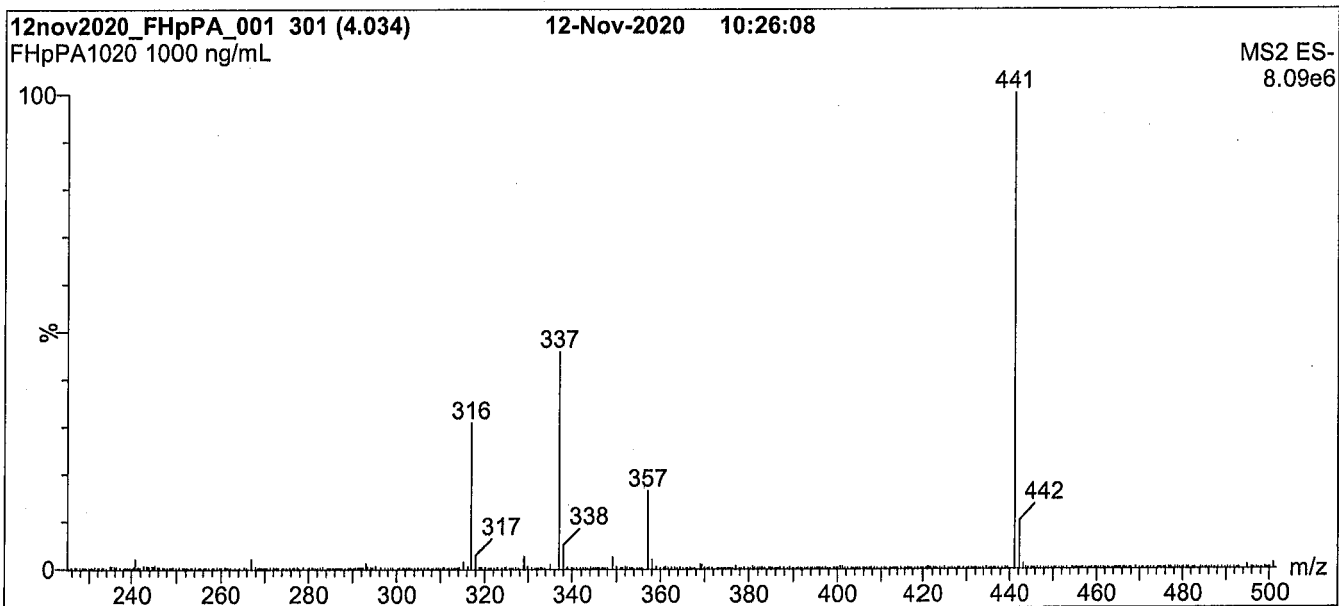
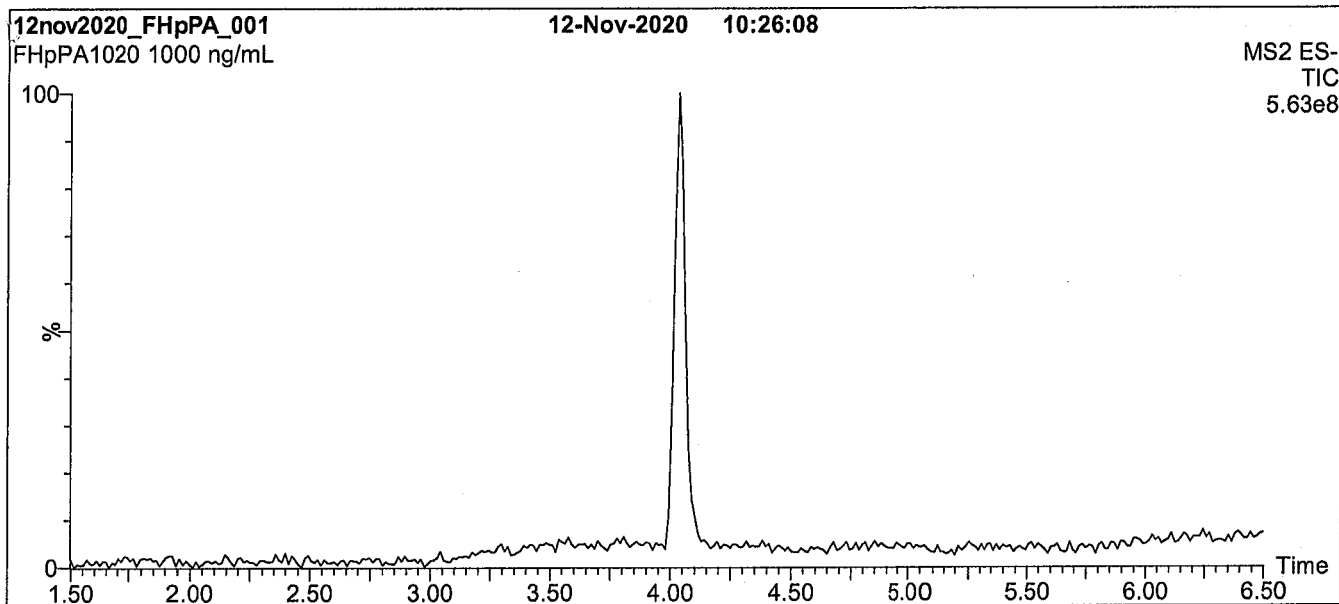
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Figure 1: FHpPA; LC/MS Data (TIC and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

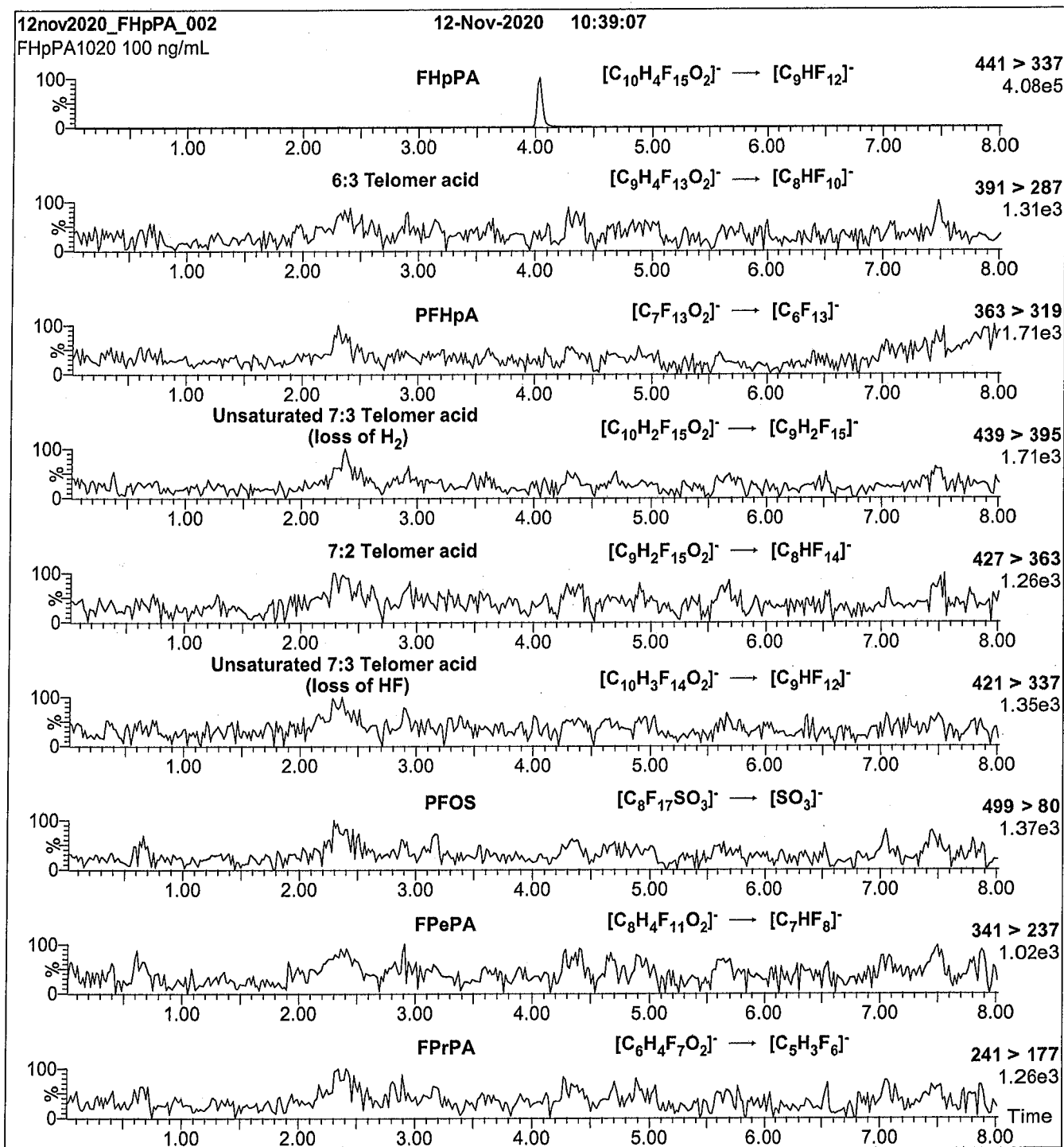
Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ 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 μ 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		

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

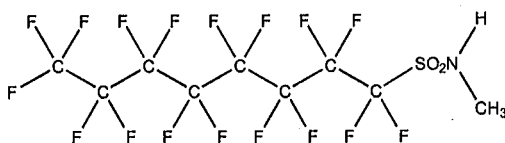


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M **LOT NUMBER:** NMeFOSA0721M
COMPOUND: N-methylperfluoro-1-octanesulfonamide

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

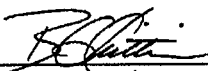
DOCUMENTATION/ DATA ATTACHED:

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:  **Date:** 08/04/2021
 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

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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.

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LIMITED WARRANTY:

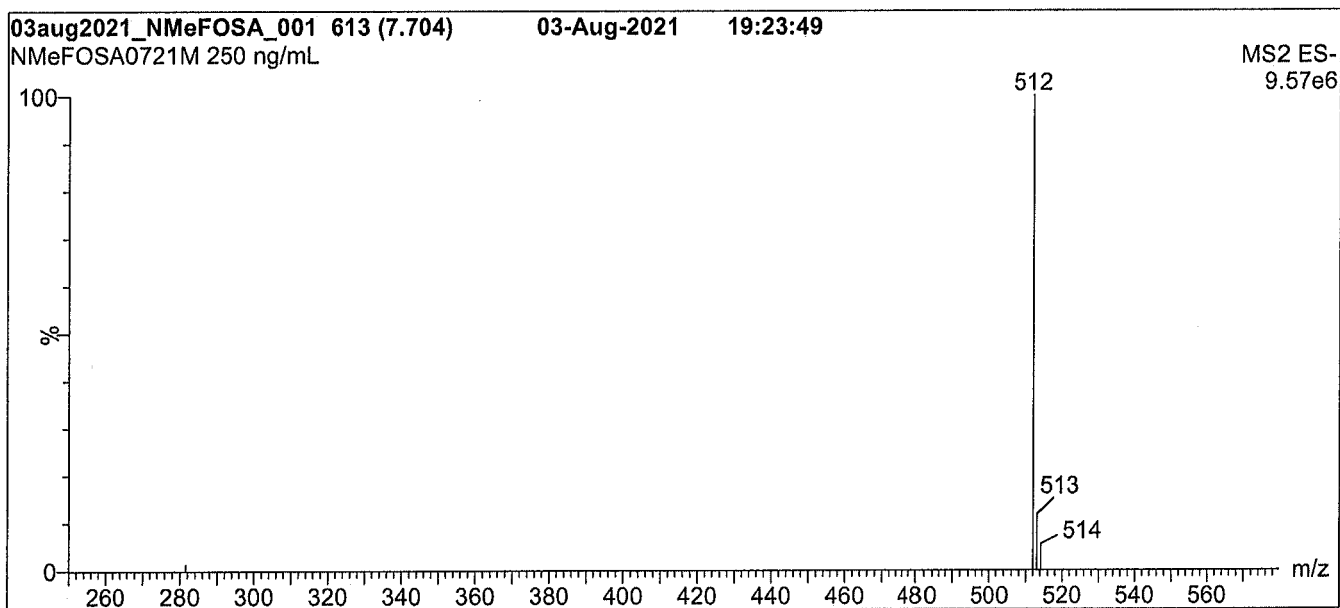
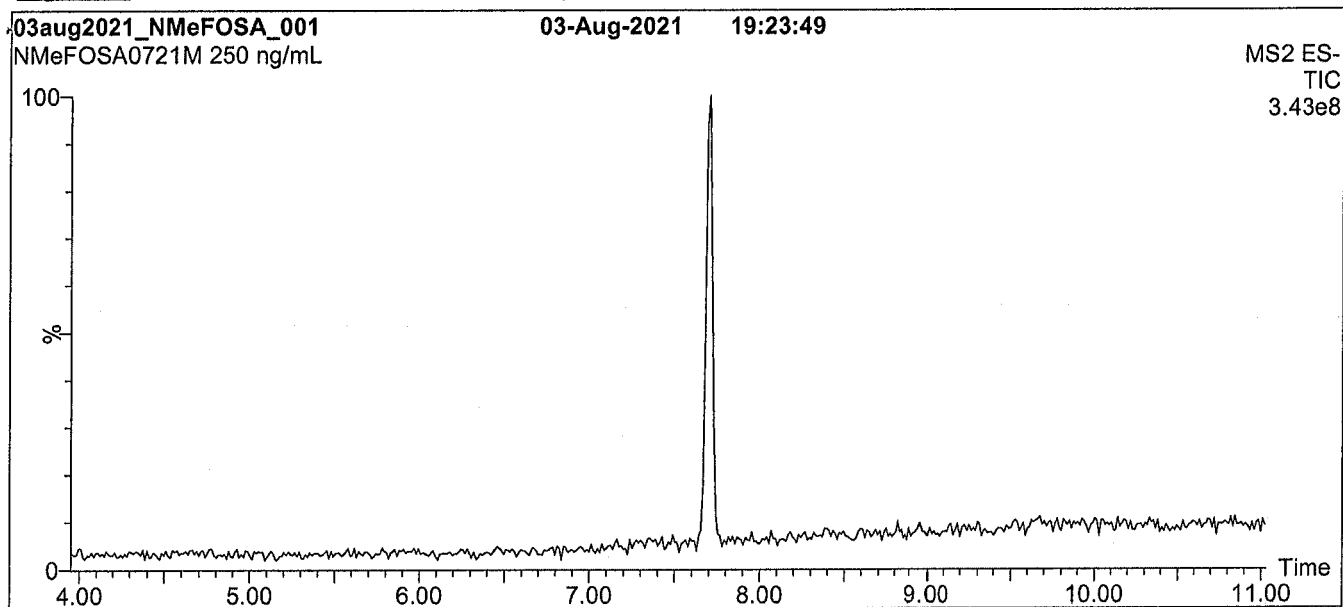
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QUALITY MANAGEMENT:

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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 or contact us directly at info@well-labs.com

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 RP₁₈
1.7 μ m, 2.1 x 100 mm

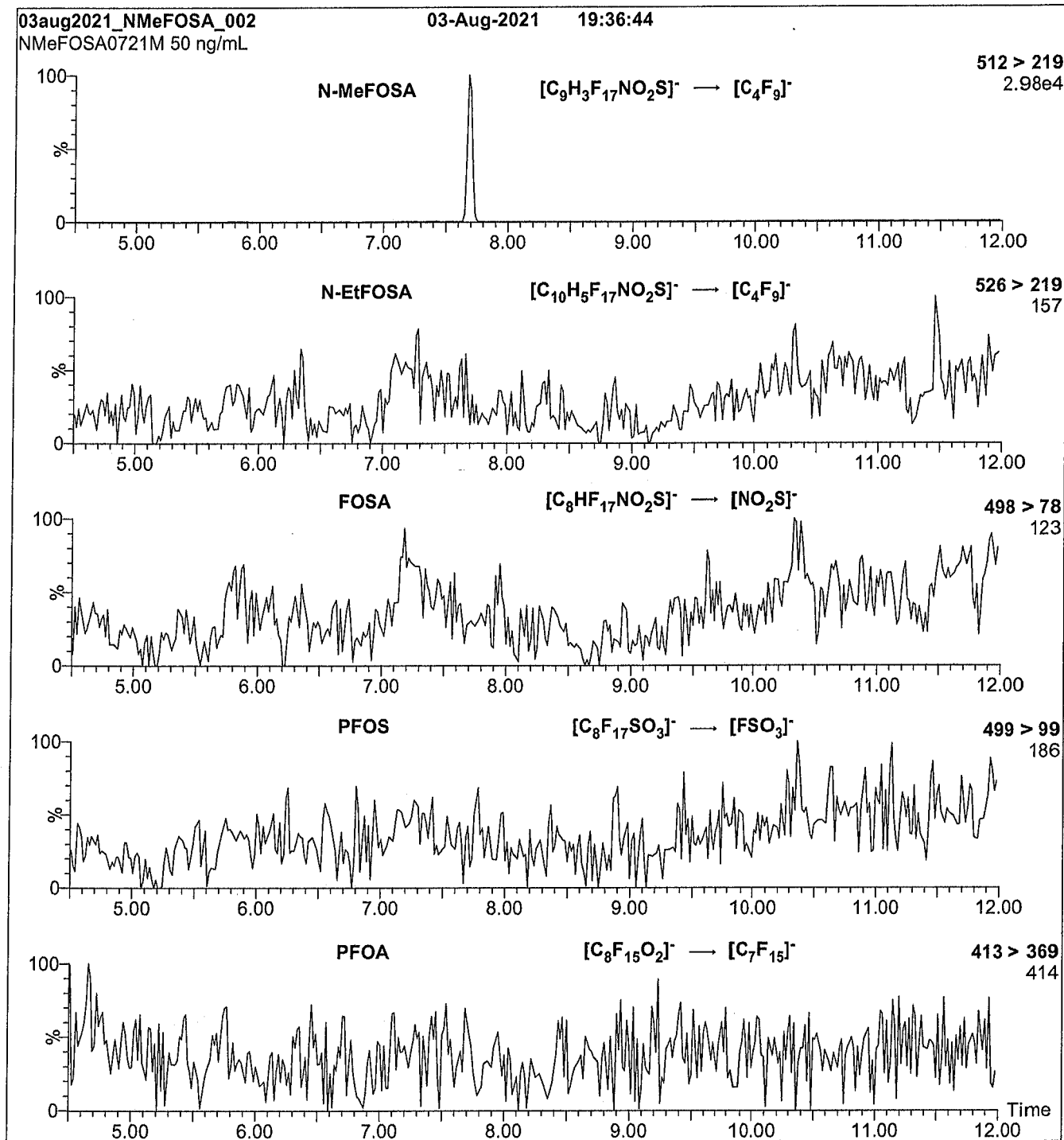
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ 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 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.41e-3

Collision Energy (eV) = 24

Analytical Standard Record

21L0008

Description:	PFAS - SAS N-MeFOSA 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 16:18 by HGH

Analyte	Parent	CAS Number	Concentration	Units
N-MEFOSA		31506-32-8	50	ug/mL

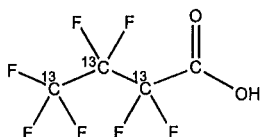


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: M3PFBA **LOT NUMBER:** M3PFBA0721
COMPOUND: Perfluoro-n-(2,3,4-¹³C₃)butanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA: ¹³C₃¹²CHF₇O₂ **MOLECULAR WEIGHT:** 217.02
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99%¹³C
 (2,3,4-¹³C₃)
LAST TESTED: (mm/dd/yyyy) 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-(¹³C₃)propanoic acid and also contains ~1.0% of perfluoro-n-(1,2,3,4-¹³C₄)butanoic acid due to the naturally occurring isotopic abundance of ¹³C in the unlabelled carbon atom.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

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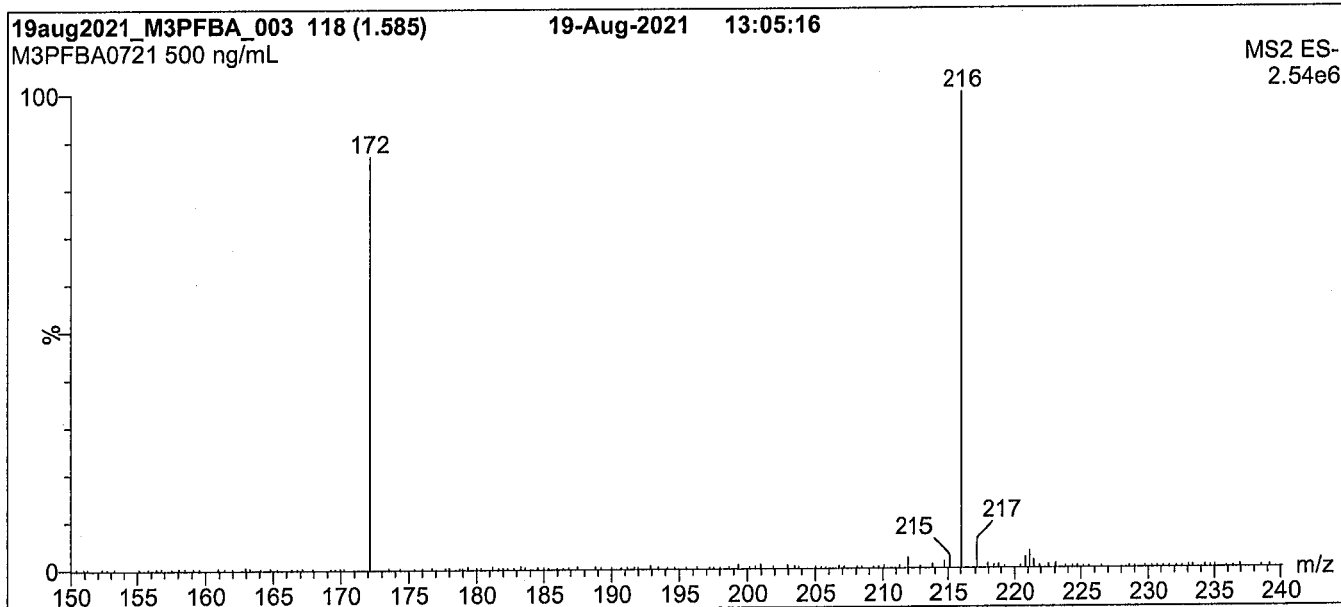
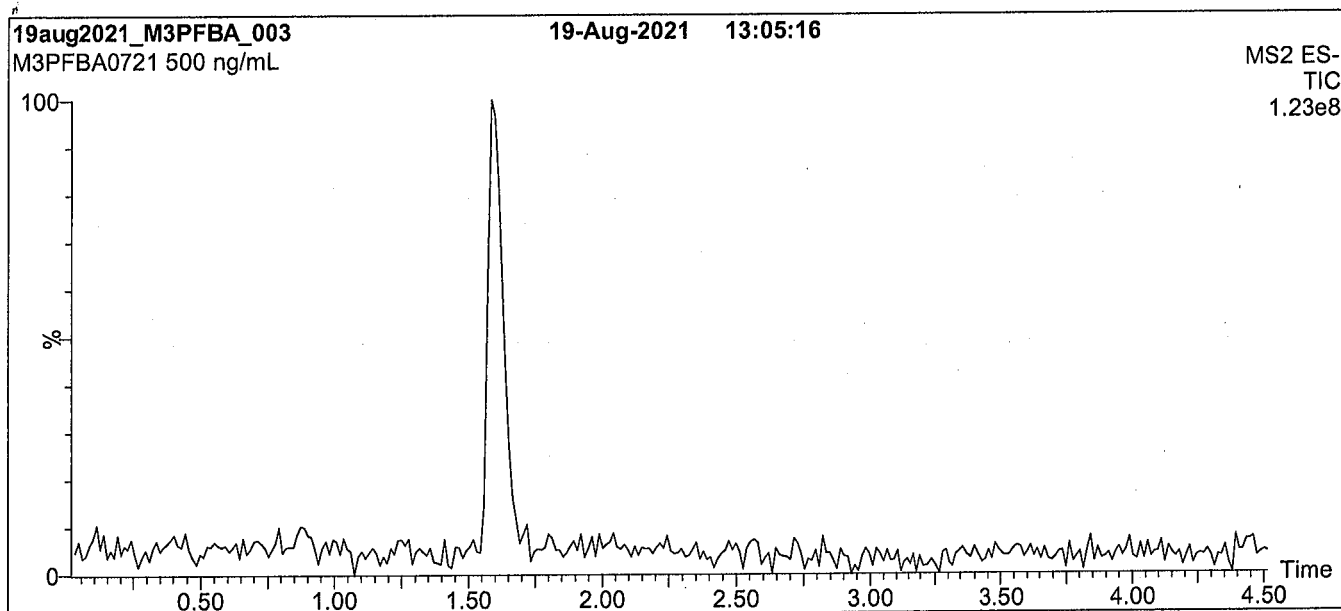
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Figure 1: M3PFBA; LC/MS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

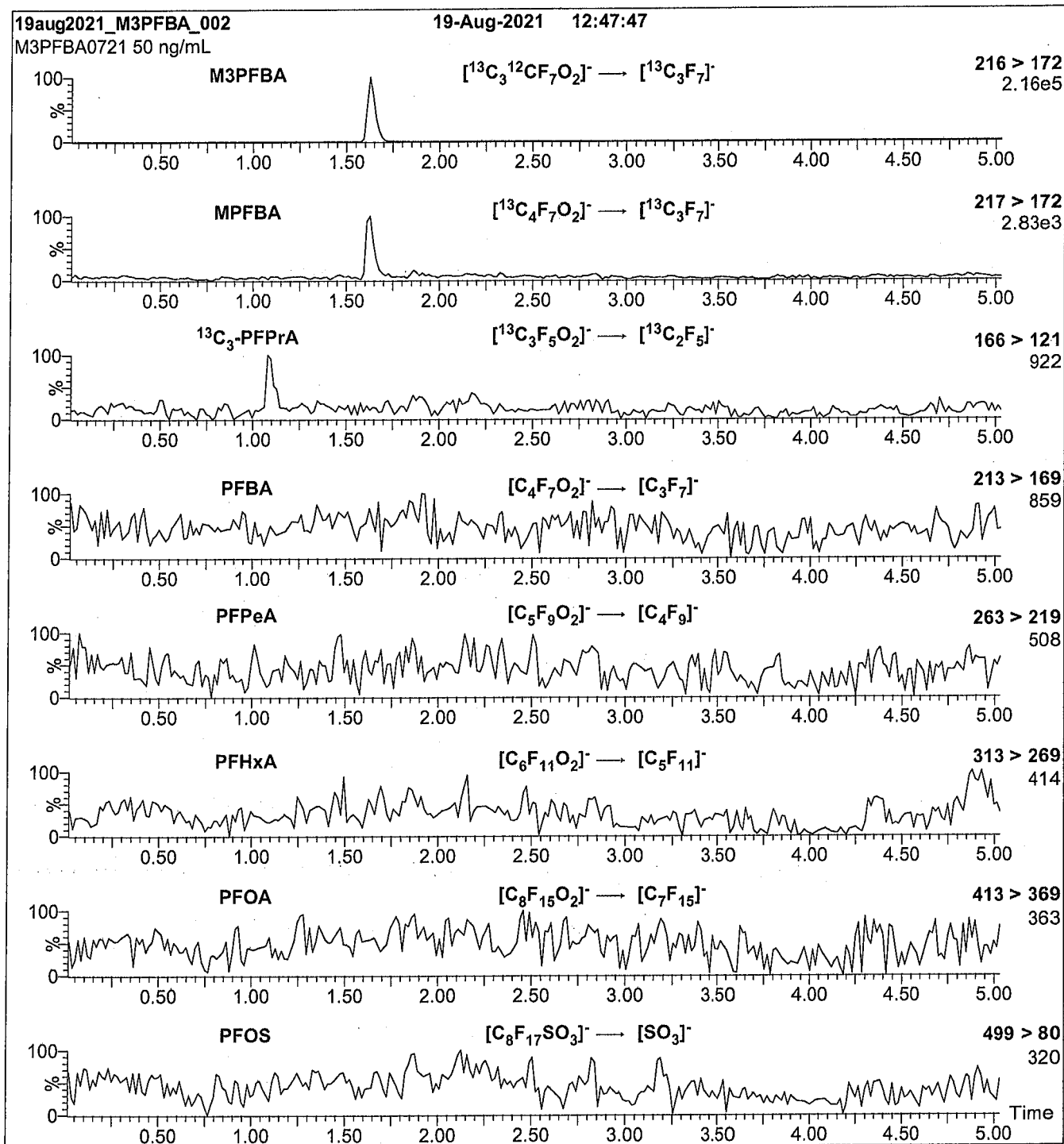
Mobile phase: Gradient
Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.5 min.
Time: 12 min

Flow: 300 μ 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

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

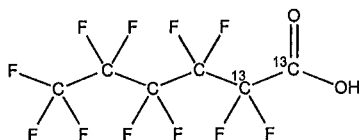


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFHxA **LOT NUMBER:** MPFHxA0921
COMPOUND: Perfluoro-n-(1,2-¹³C₂)hexanoic acid

STRUCTURE: **CAS #:** 960315-47-3



MOLECULAR FORMULA: ¹³C₂¹²C₄HF₁₁O₂ **MOLECULAR WEIGHT:** 316.04
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 10/04/2021
EXPIRY DATE: (mm/dd/yyyy) 10/04/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

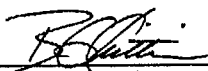
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

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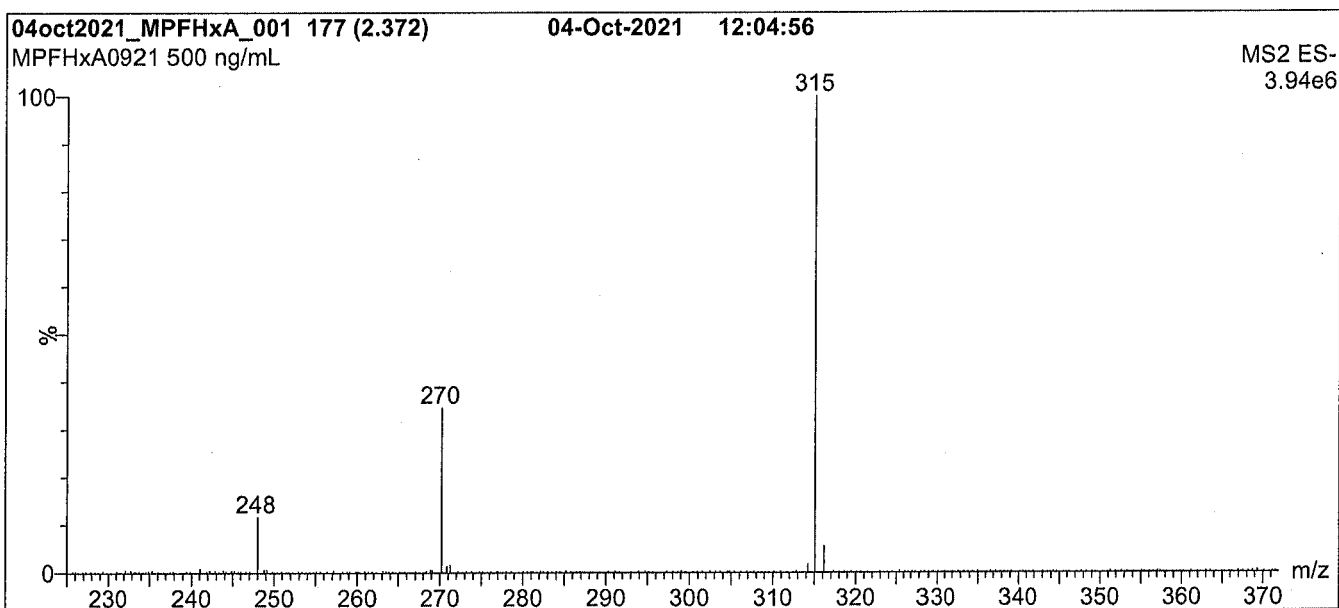
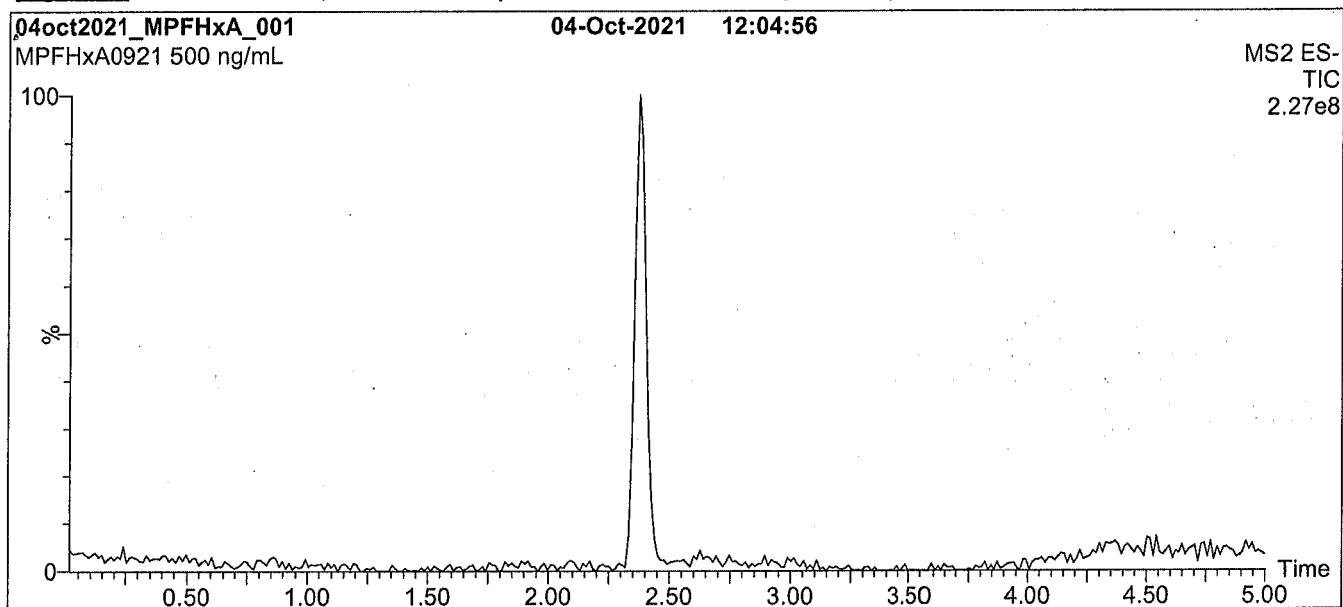
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Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

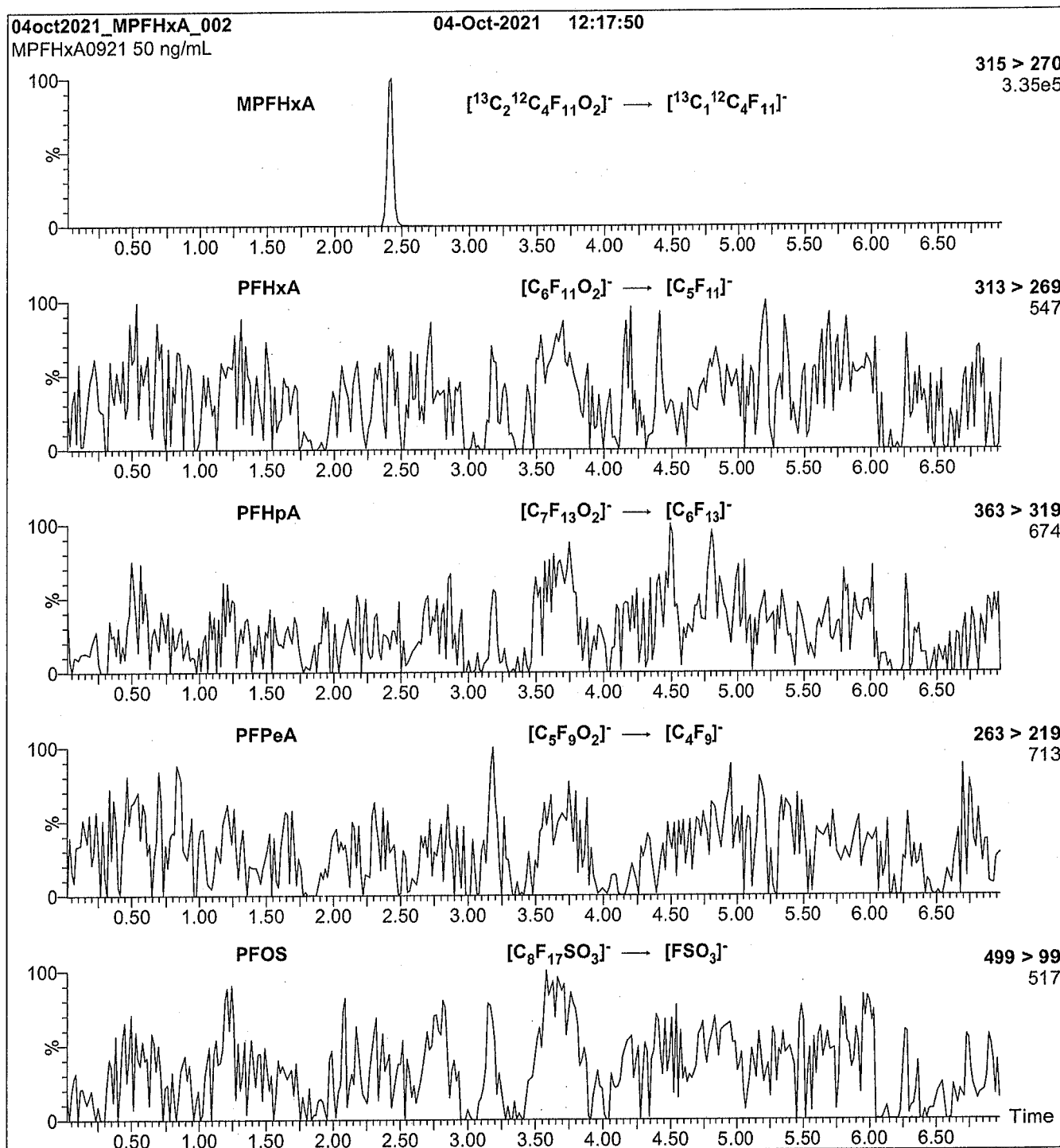
Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 12 min

Flow: 300 μ 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

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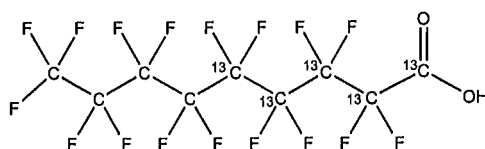
Analyte	Parent	CAS Number	Concentration	Units
13C2-PFHxA		13C2-PFHxA	50	ug/mL



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFNA **LOT NUMBER:** MPFNA1021
COMPOUND: Perfluoro-n-(1,2,3,4,5-¹³C₅)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% ¹³C
 (1,2,3,4,5-¹³C₅)
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)
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ADDITIONAL INFORMATION:

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

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LIMITED WARRANTY:

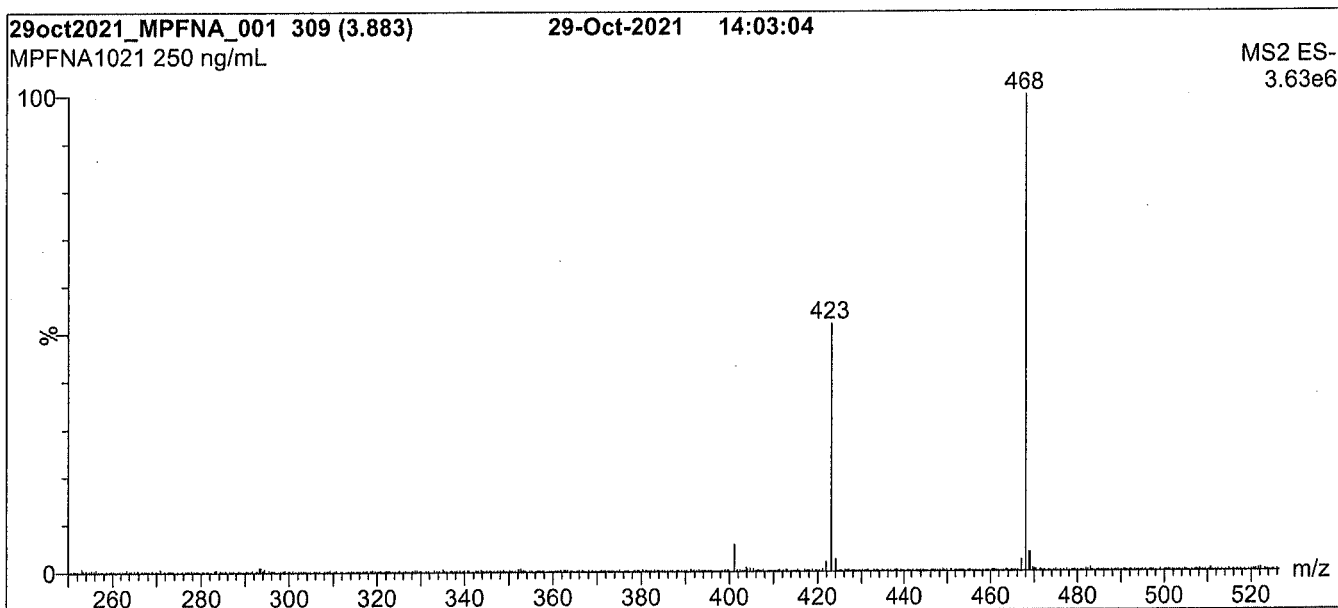
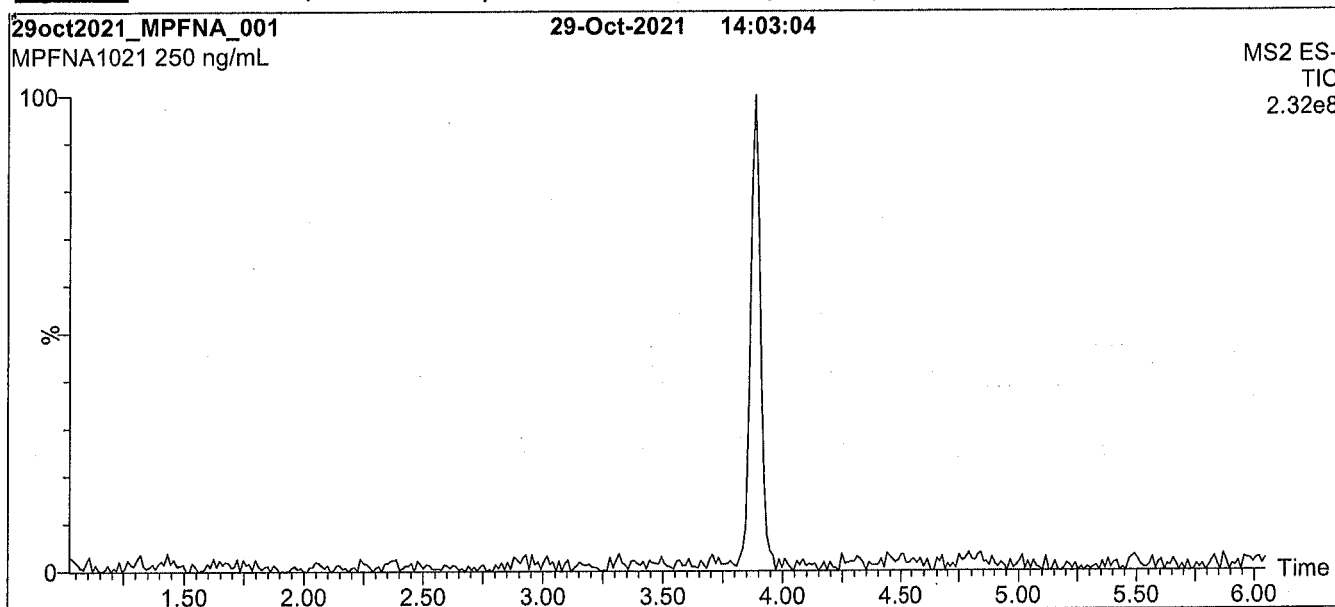
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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).



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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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)

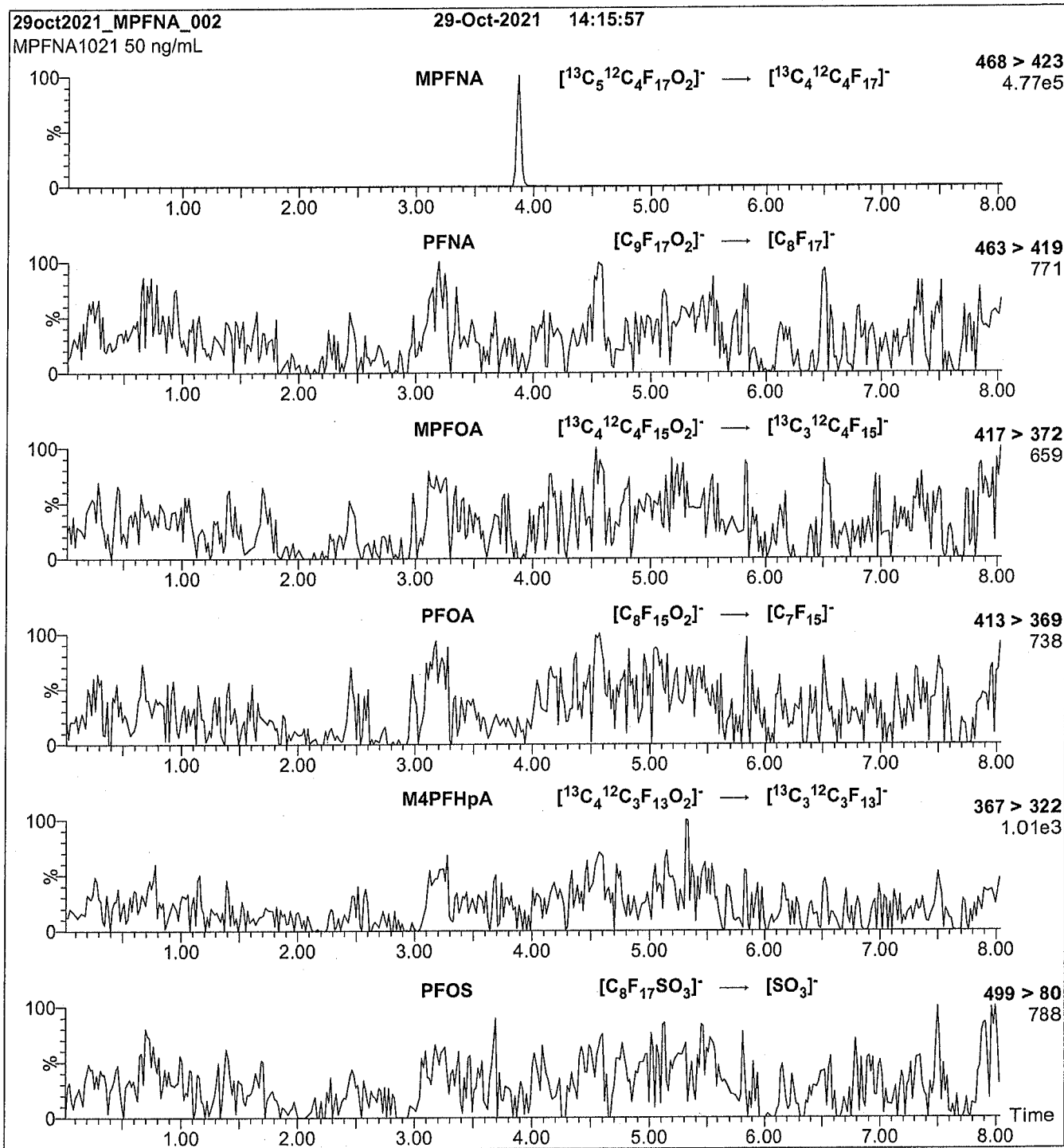
Source: Electrospray (negative)

Capillary Voltage (kV) = 2.00

Cone Voltage (V) = 10.00

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

Desolvation Gas Flow (L/hr) = 1000

Figure 2: 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
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Vials:	1	Last Edit:	01/20/2022 15:48 by HGH

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

INTENDED USE:

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HANDLING:

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UNCERTAINTY:

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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.

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:

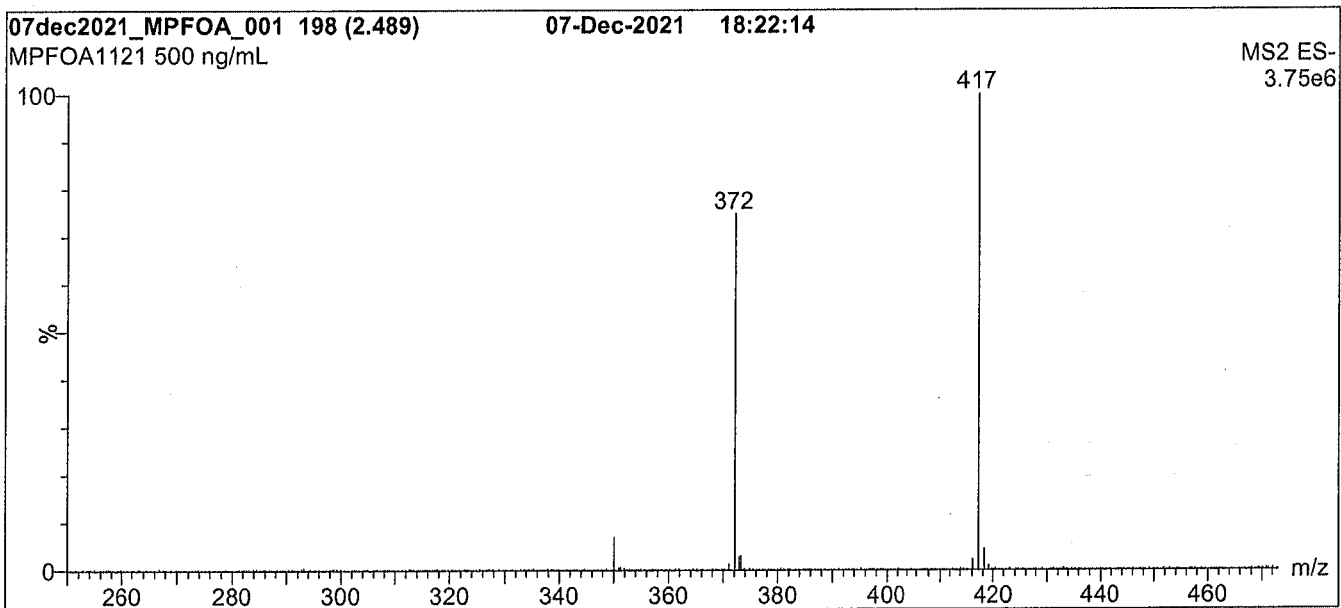
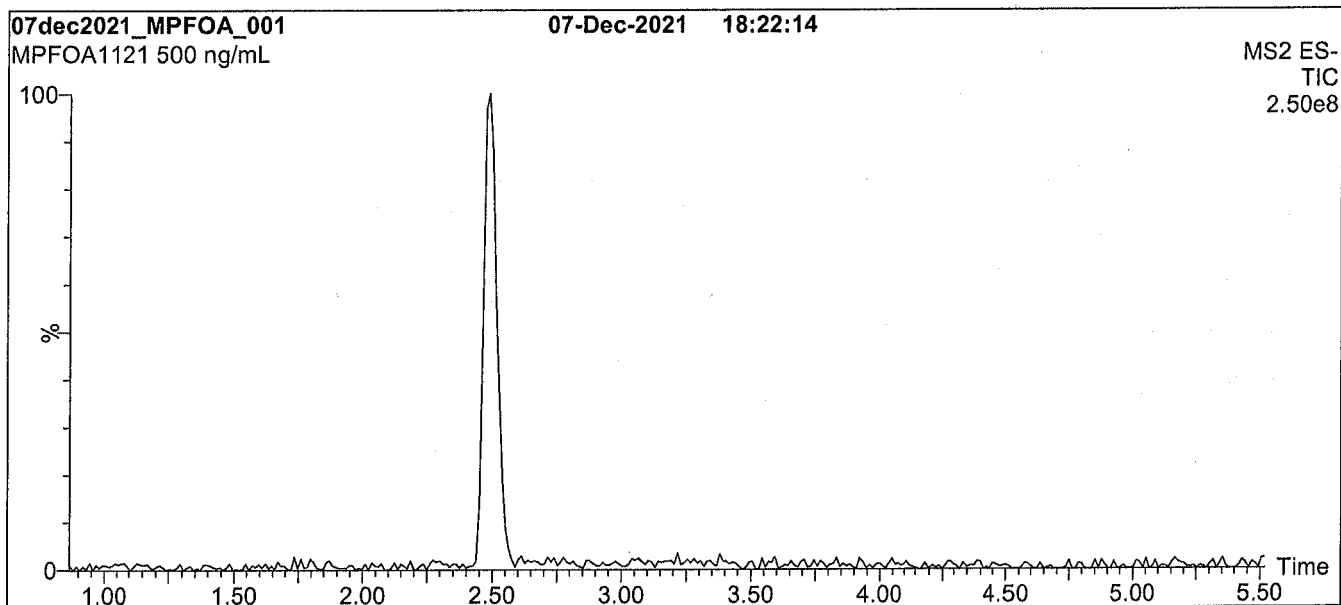
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QUALITY MANAGEMENT:

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Figure 1: 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 RP₁₈
1.7 μ m, 2.1 x 100 mm

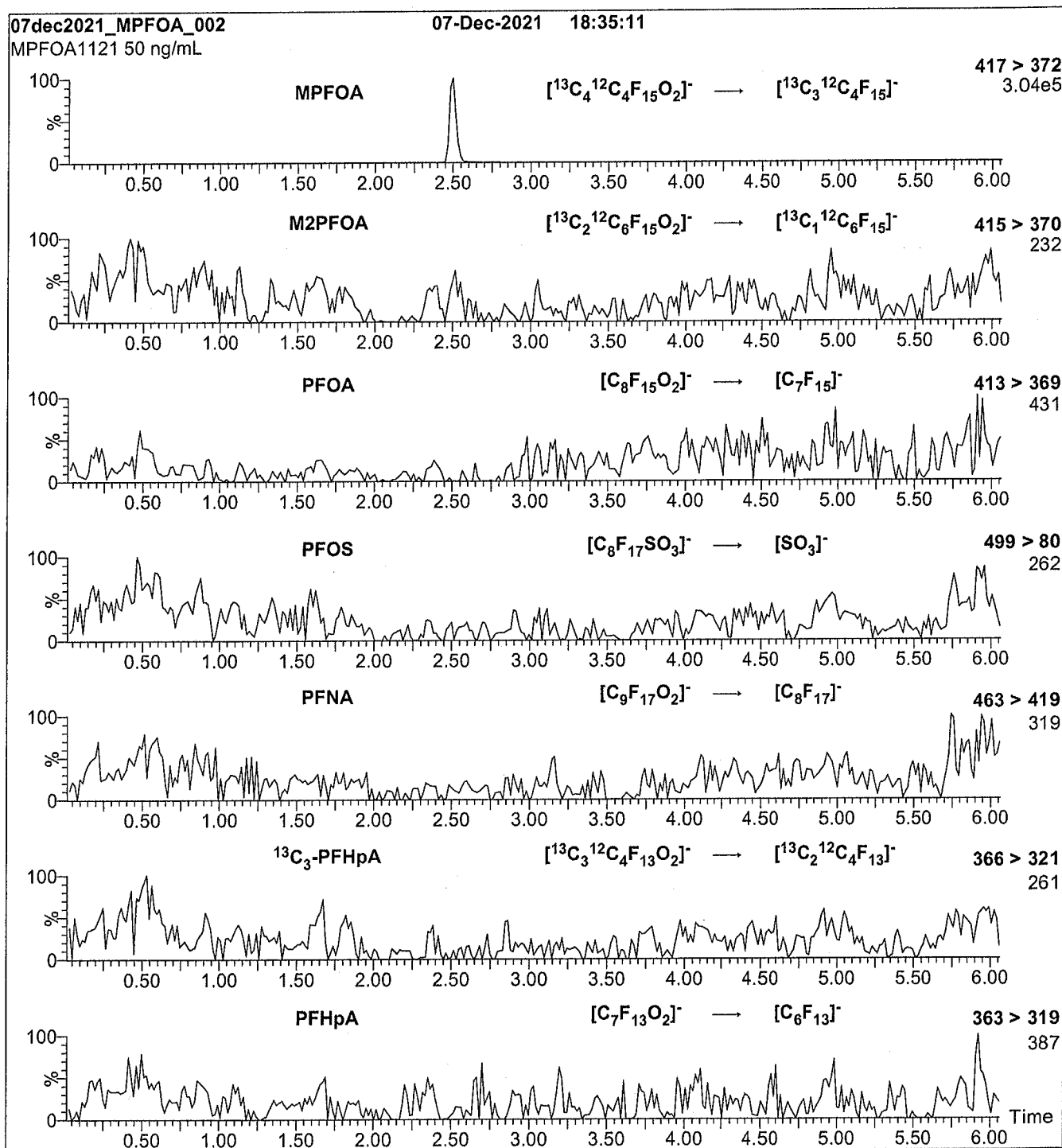
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ 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

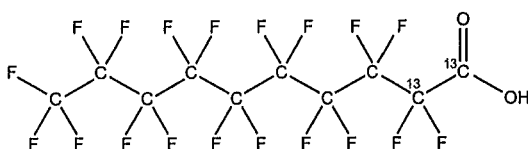


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFDA **LOT NUMBER:** MPFDA1221
COMPOUND: Perfluoro-n-(1,2-¹³C₂)decanoic acid

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



MOLECULAR FORMULA: ¹³C₂¹²C₈HF₁₉O₂ **MOLECULAR WEIGHT:** 516.07
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
 (1,2-¹³C₂)
LAST TESTED: (mm/dd/yyyy) 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

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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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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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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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:

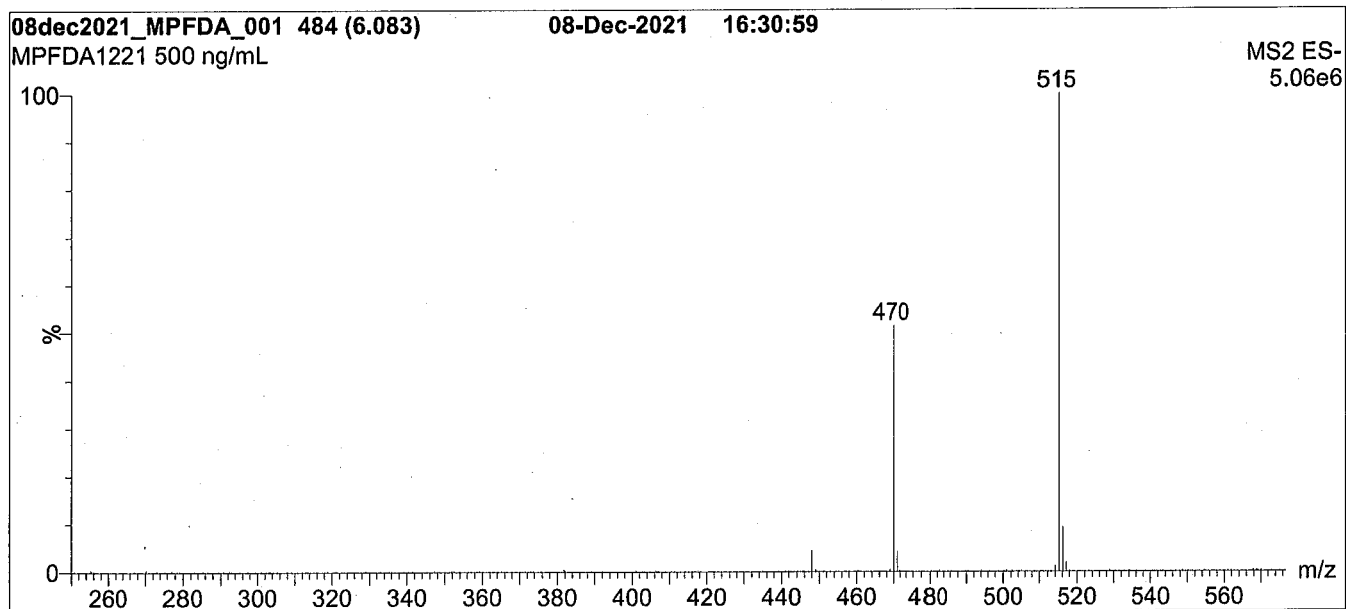
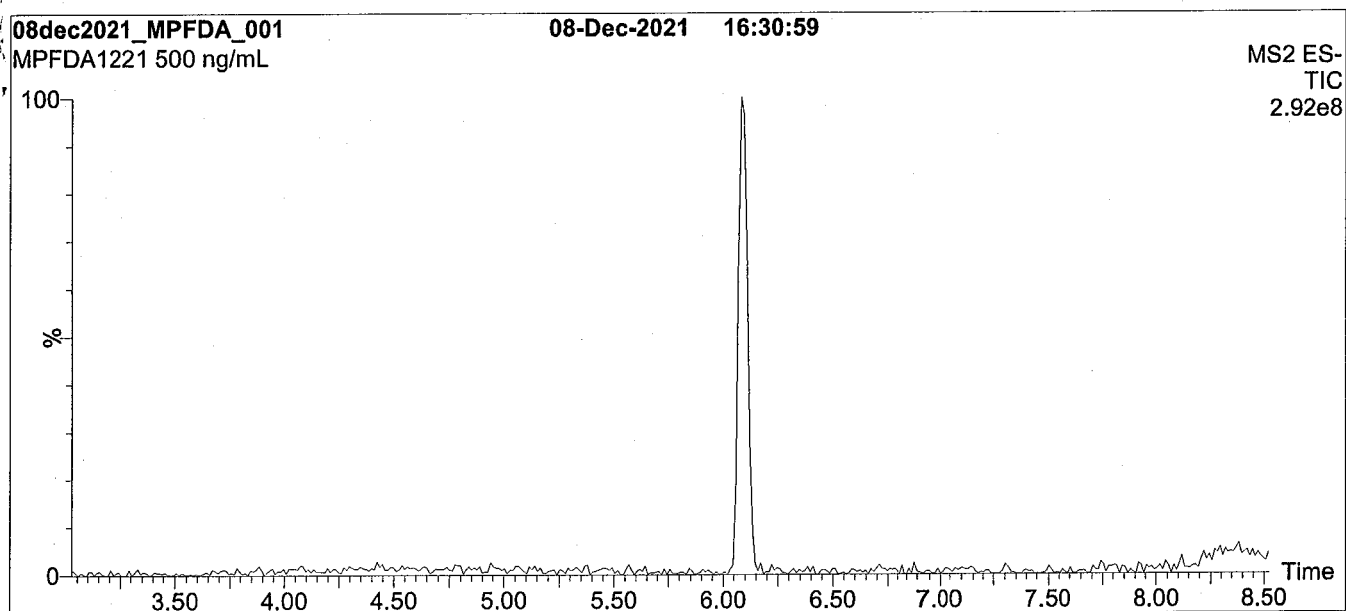
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QUALITY MANAGEMENT:

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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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

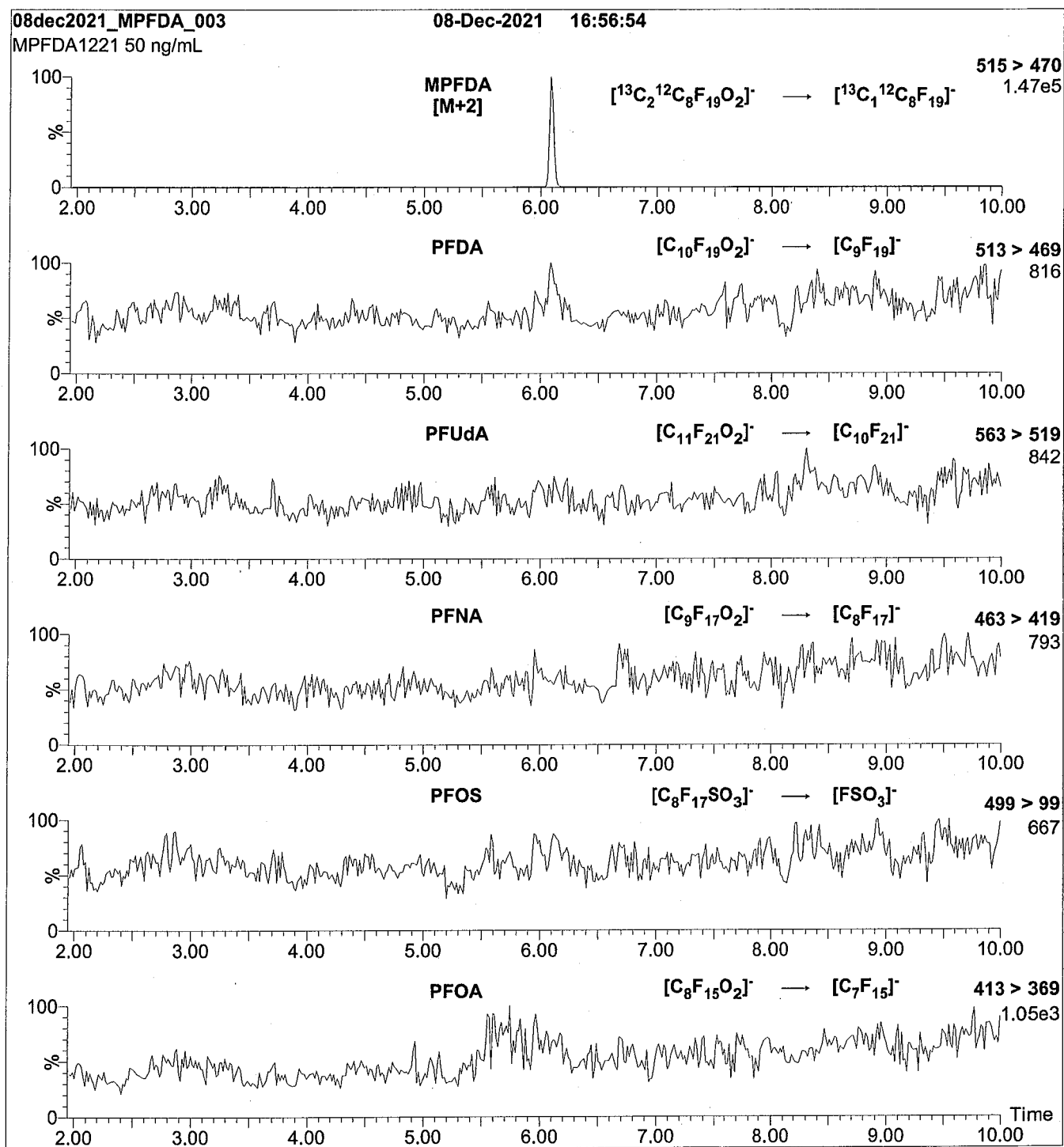
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

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

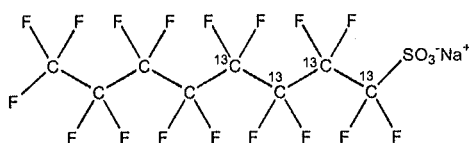


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFOS **LOT NUMBER:** MPFOS0821
COMPOUND: Sodium perfluoro-1-(1,2,3,4-¹³C₄)octanesulfonate

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



MOLECULAR FORMULA: ¹³C₄¹²C₄F₁₇SO₃Na **MOLECULAR WEIGHT:** 526.08
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
 47.9 ± 2.4 µg/mL (MPFOS acid)
 47.8 ± 2.4 µg/mL (MPFOS anion)
CHEMICAL PURITY: >98% **ISOTOPIC PURITY:** ≥99% ¹³C
LAST TESTED: (mm/dd/yyyy) 08/18/2021 (1,2,3,4-¹³C₄)
EXPIRY DATE: (mm/dd/yyyy) 08/18/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

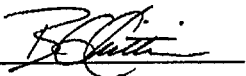
DOCUMENTATION/ DATA ATTACHED:

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 ~0.4% sodium perfluoro-1-(¹³C₃)heptanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager **Date:** 08/19/2021
 (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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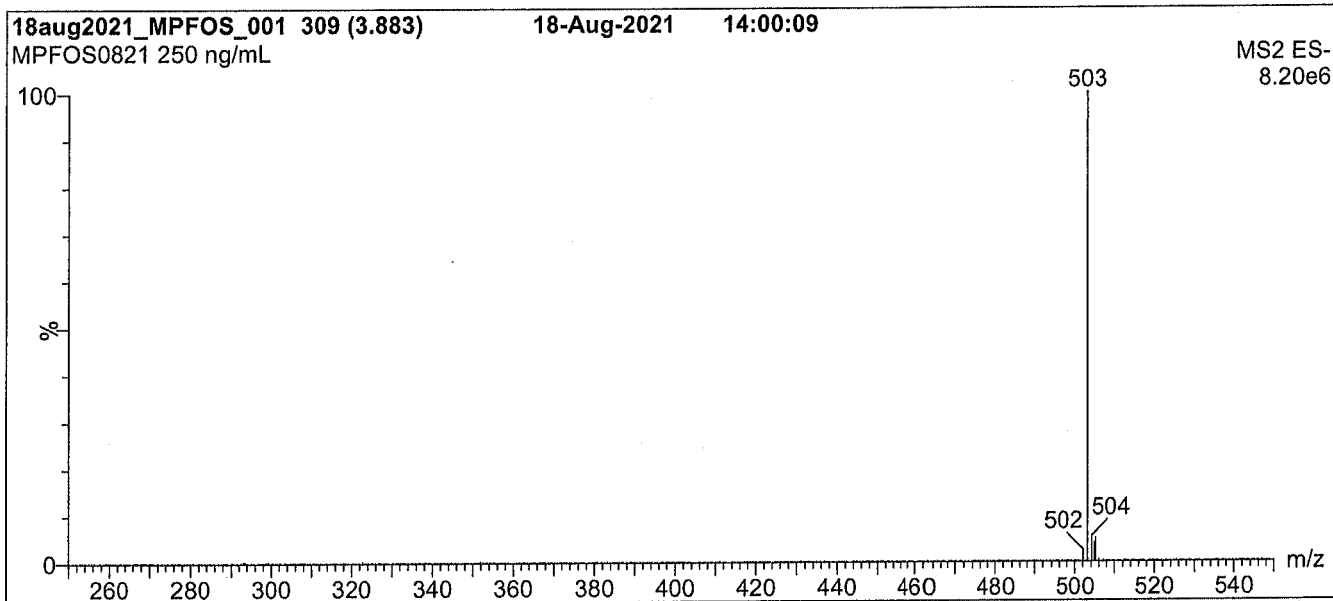
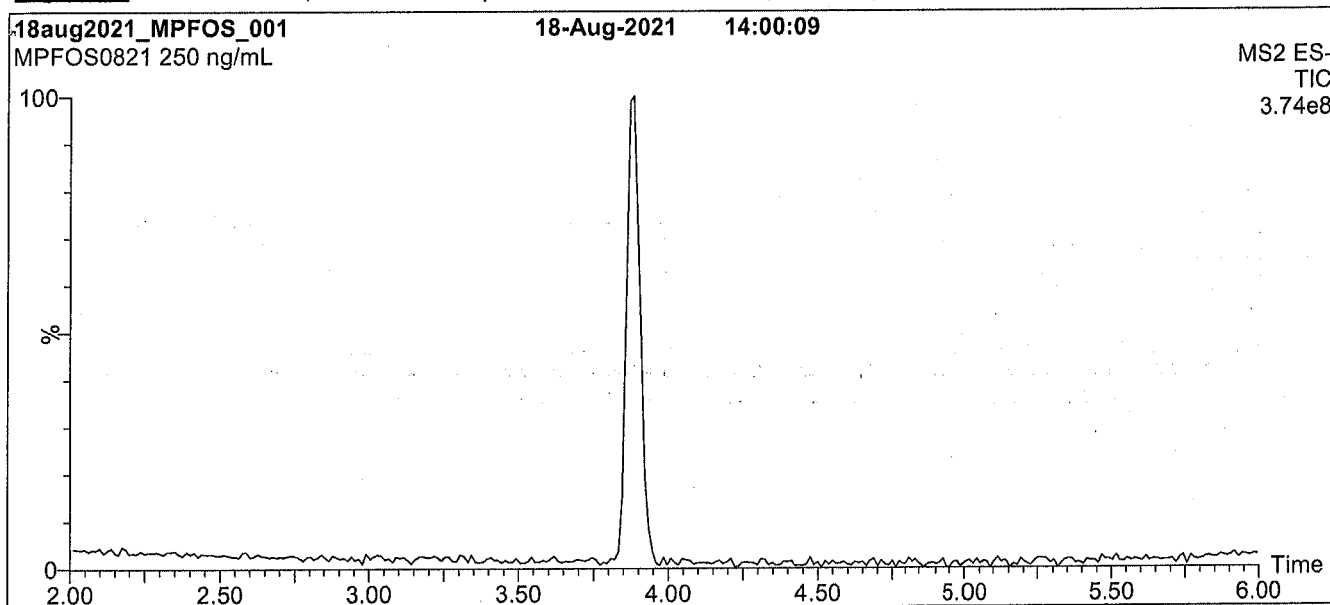
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Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

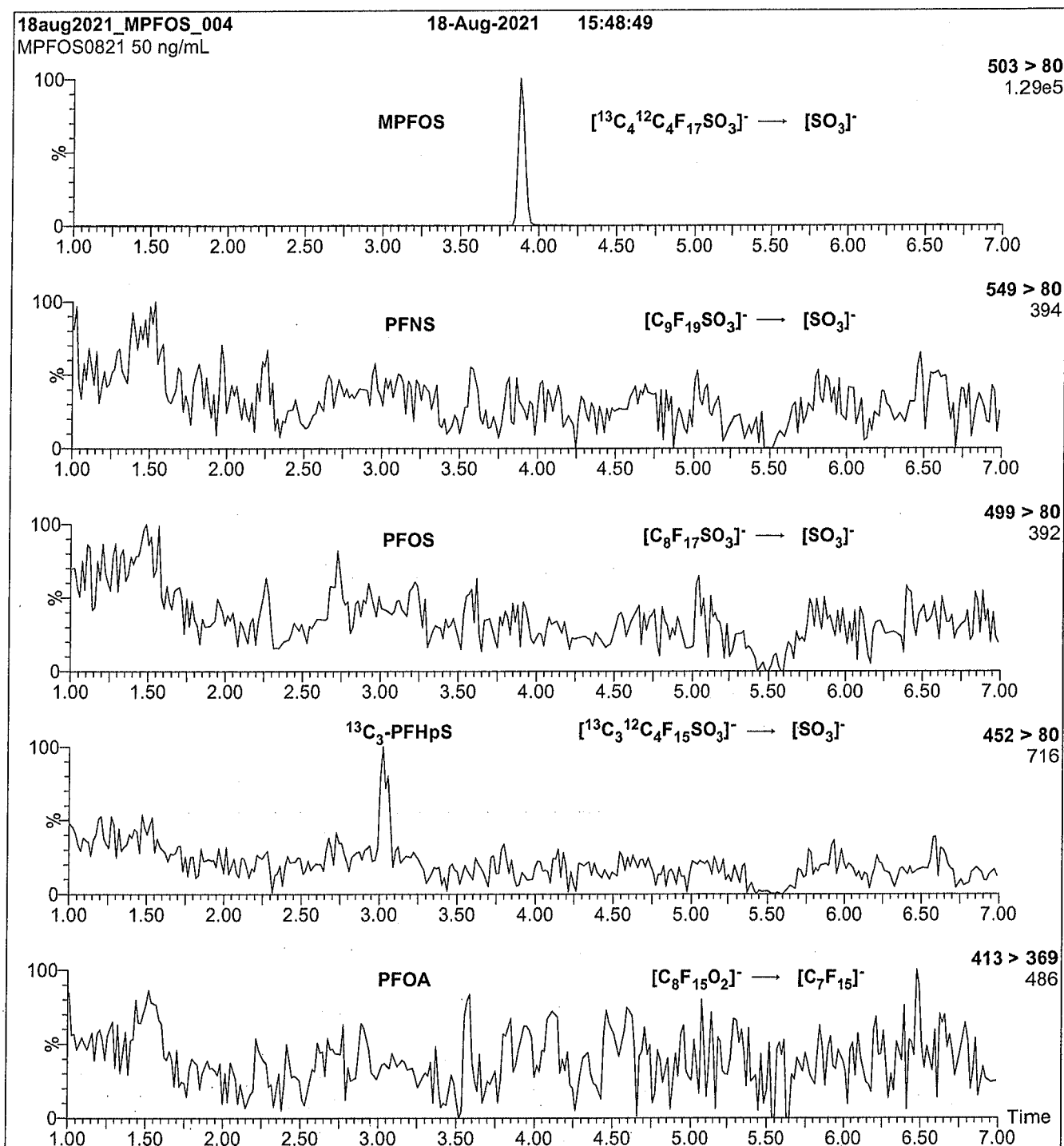
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ 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

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

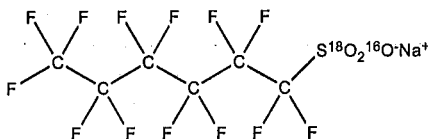


WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: MPFHxS **LOT NUMBER:** MPFHxS1021
COMPOUND: Sodium perfluoro-1-hexane(¹⁸O₂)sulfonate

STRUCTURE: **CAS #:** 1585941-14-5



MOLECULAR FORMULA: C₆F₁₃S¹⁸O₂¹⁶ONa **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% (¹⁸O₂)
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 (C₆F₁₃S¹⁸O₂¹⁶O) has been observed to be up to 10% lower than for PFHxS (C₆F₁₃S¹⁸O₃) when both compounds are injected together. This difference may vary between instruments.
- Contains ~0.6% of sodium perfluoro-1-octane(¹⁸O₂)sulfonate (¹⁸O₂-PFOS) and ~0.3% of sodium perfluoro-1-heptane(¹⁸O₂)sulfonate (¹⁸O₂-PFHpS).
- Due to the isotopic purity of the starting material (¹⁸O₂ >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:

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HANDLING:

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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:

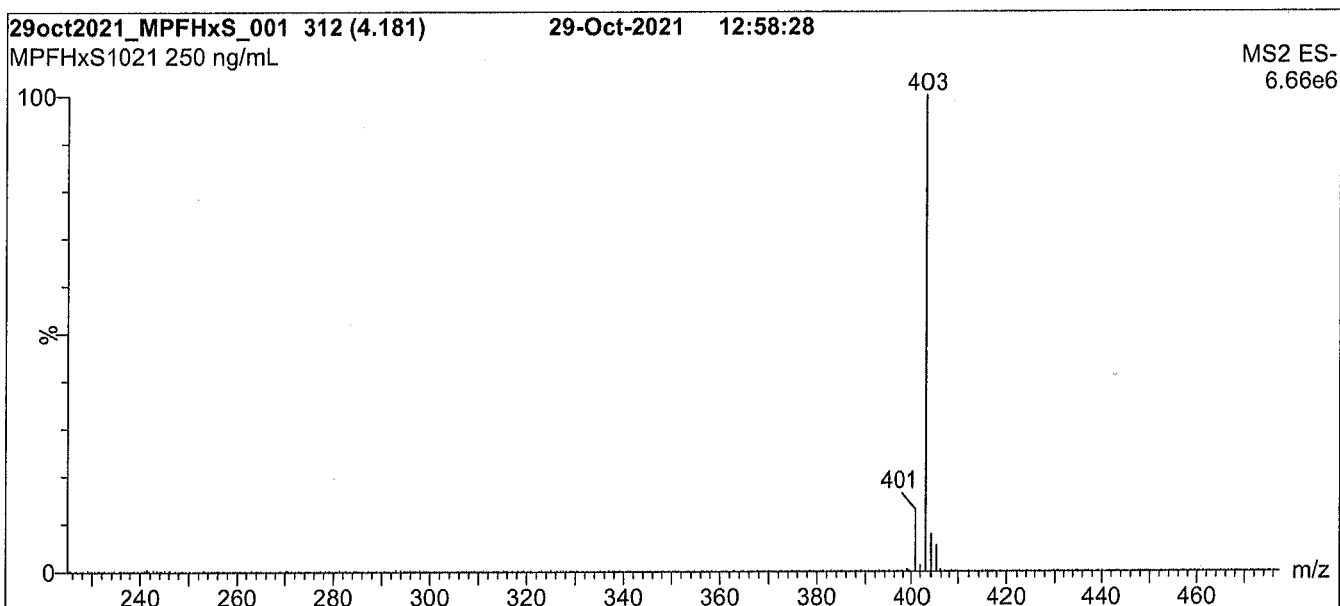
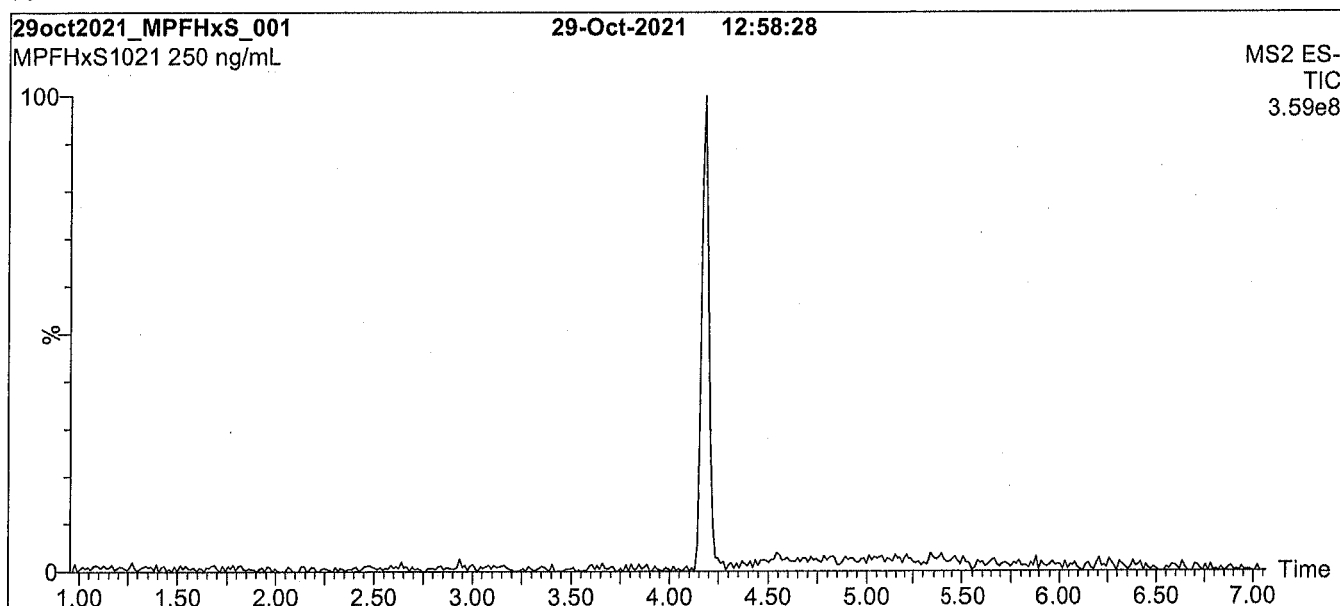
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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 or contact us directly at info@well-labs.com

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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

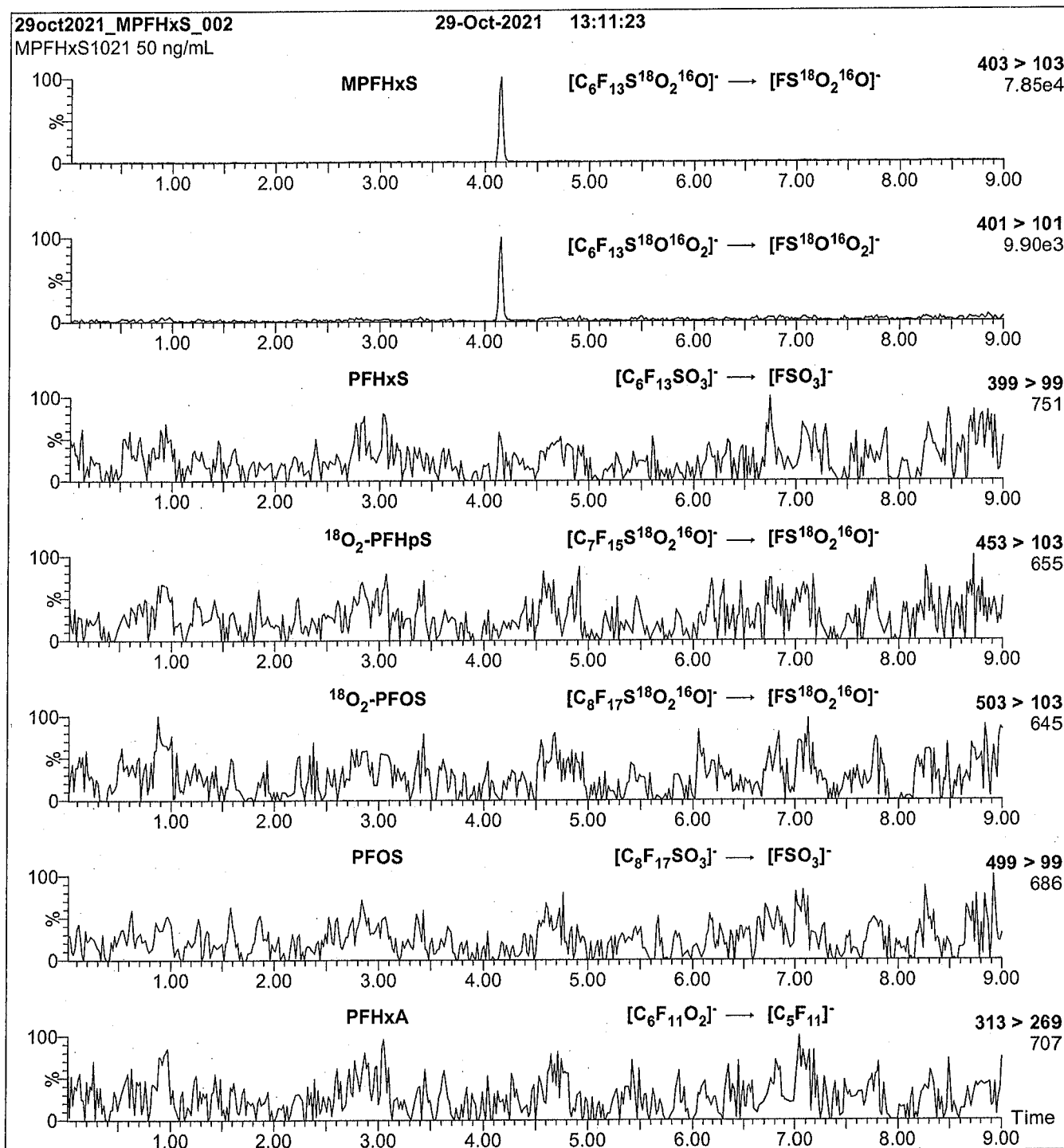
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 9 min and hold for
1 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ 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: MPFHxS; LC/MS/MS Data (Selected MRM Transitions)**Conditions for Figure 2:**

Injection: On-column (MPFHxS)

Mobile phase: Same as Figure 1

Flow: 300 μ 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

Analyte	Parent	CAS Number	Concentration	Units
1802-PFHXS		1802-PFHXS	50	ug/mL

Analytical Standard Record

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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

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	(mLs)
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.		

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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

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mL)
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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
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Vials:	1	Last Edit:	01/20/2022 15:49 by HGH
Comments:	mpfna had more left over than others.		

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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)
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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

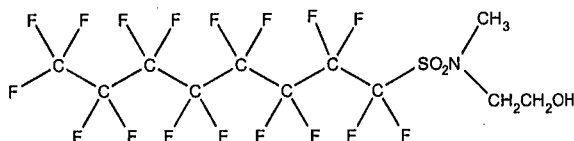


WELLINGTON LABORATORIES

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: $C_{11}H_8F_{17}NO_3S$ **MOLECULAR WEIGHT:** 557.22
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **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

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

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LIMITED WARRANTY:

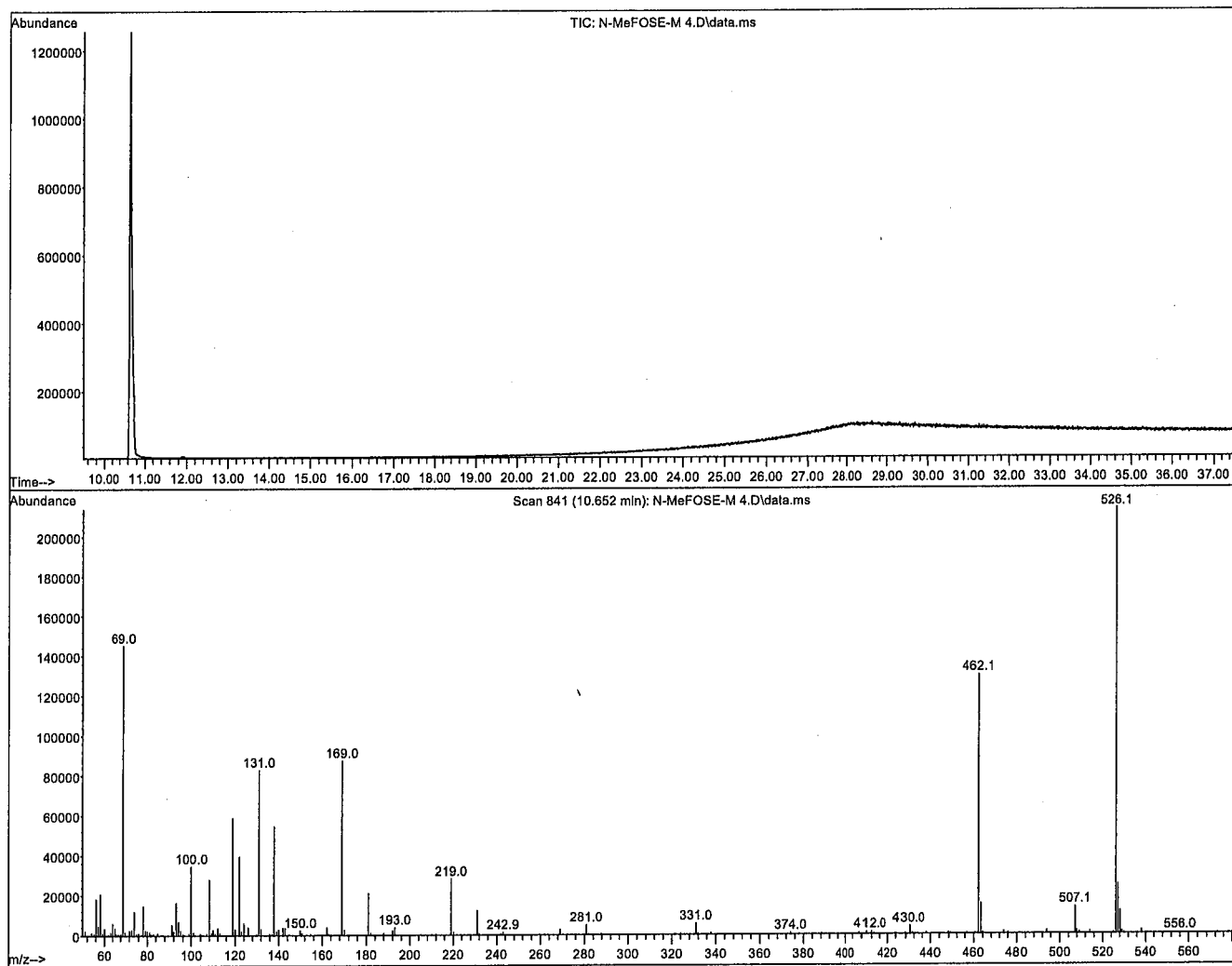
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Figure 1: N-MeFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

Agilent 7890A HRGC
 Agilent 5975C MSD

Chromatographic Conditions:

Column: 30 m DB-5 (0.25 mm id, 0.25 μ m film thickness) Agilent J&W

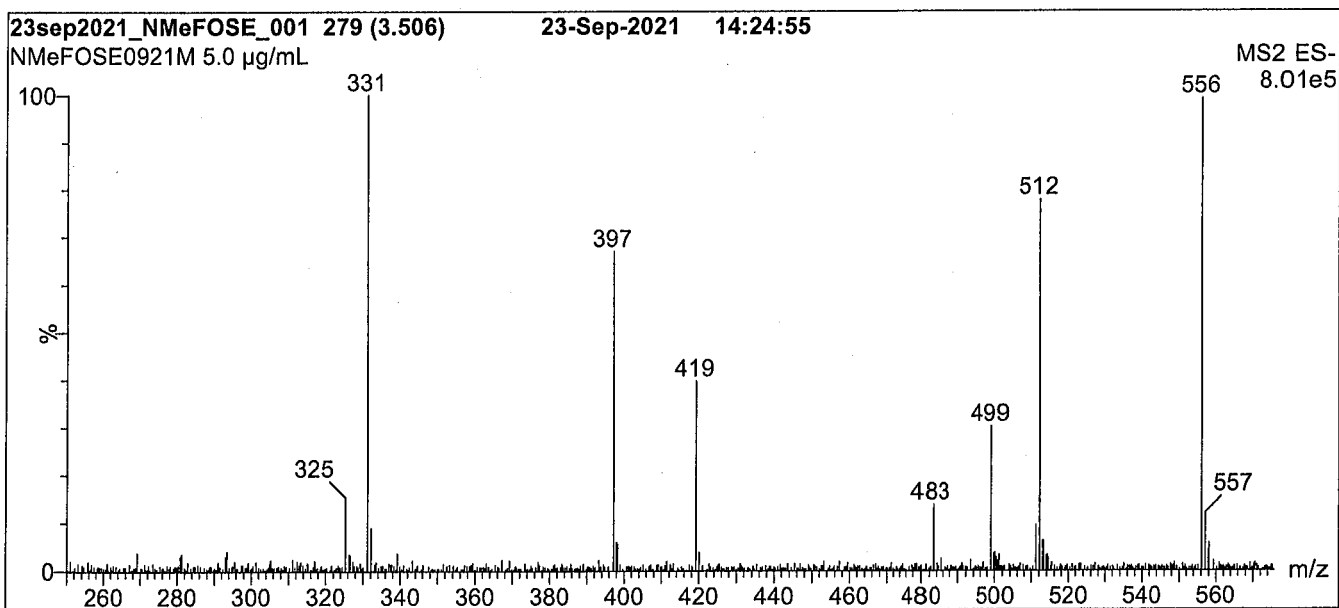
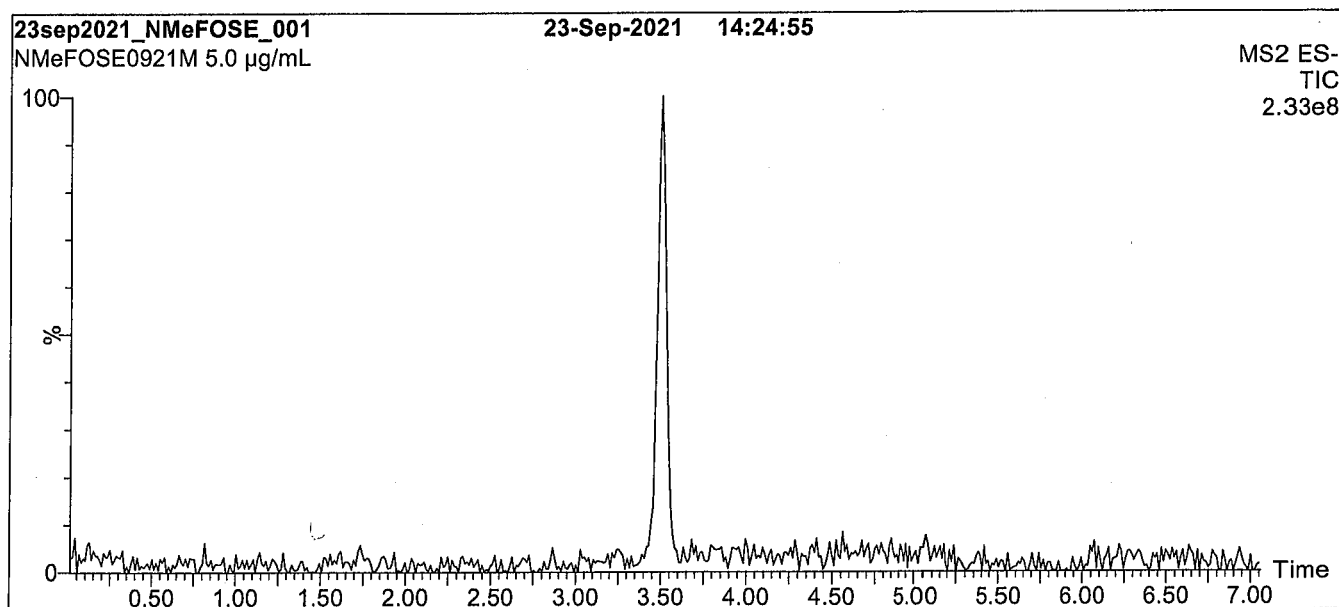
Flow: Constant at 1 mL/min

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 RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 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)

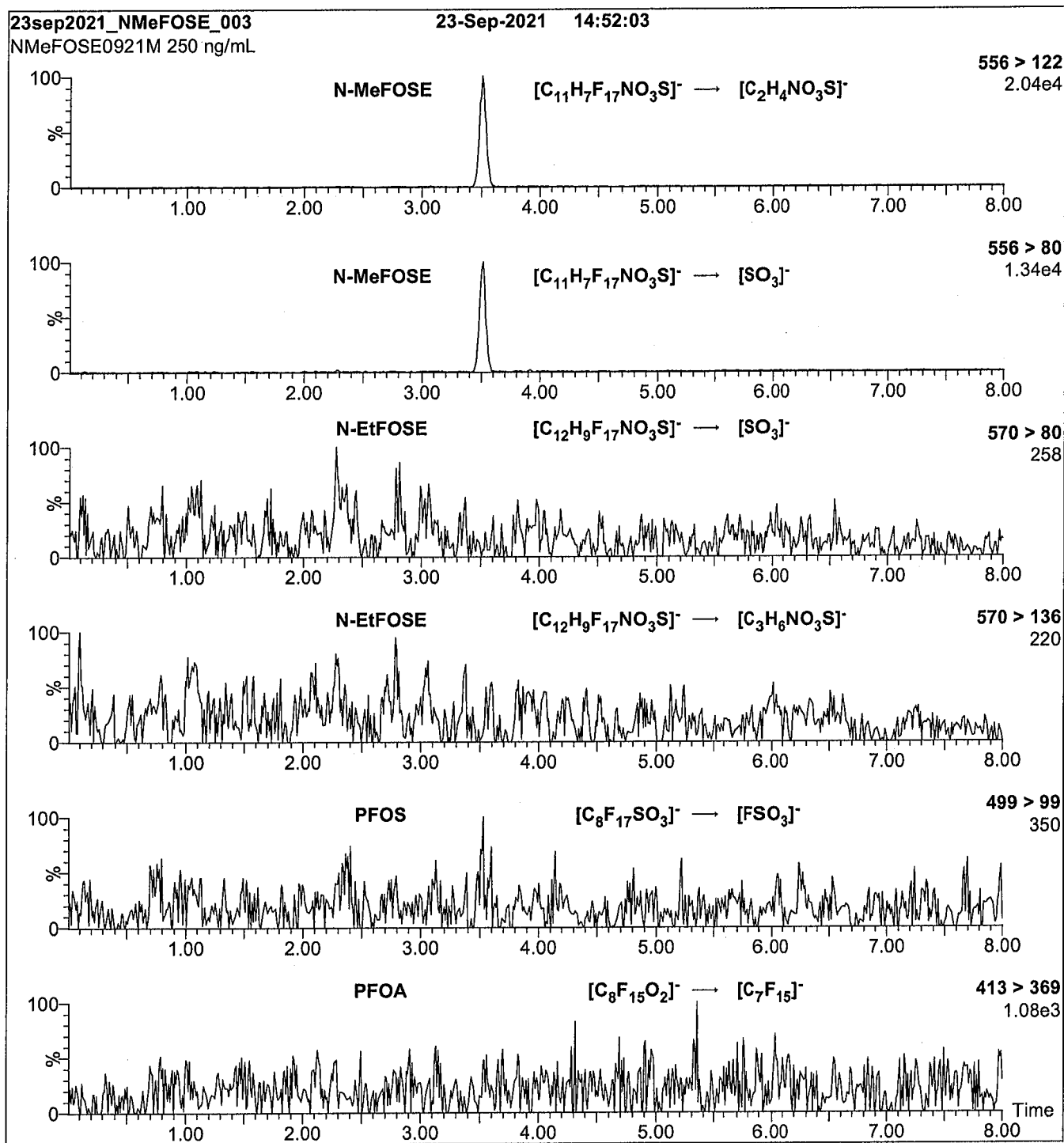
Source: Electrospray (negative)

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 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.14e-3

Collision Energy (eV) = 36

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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

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LIMITED WARRANTY:

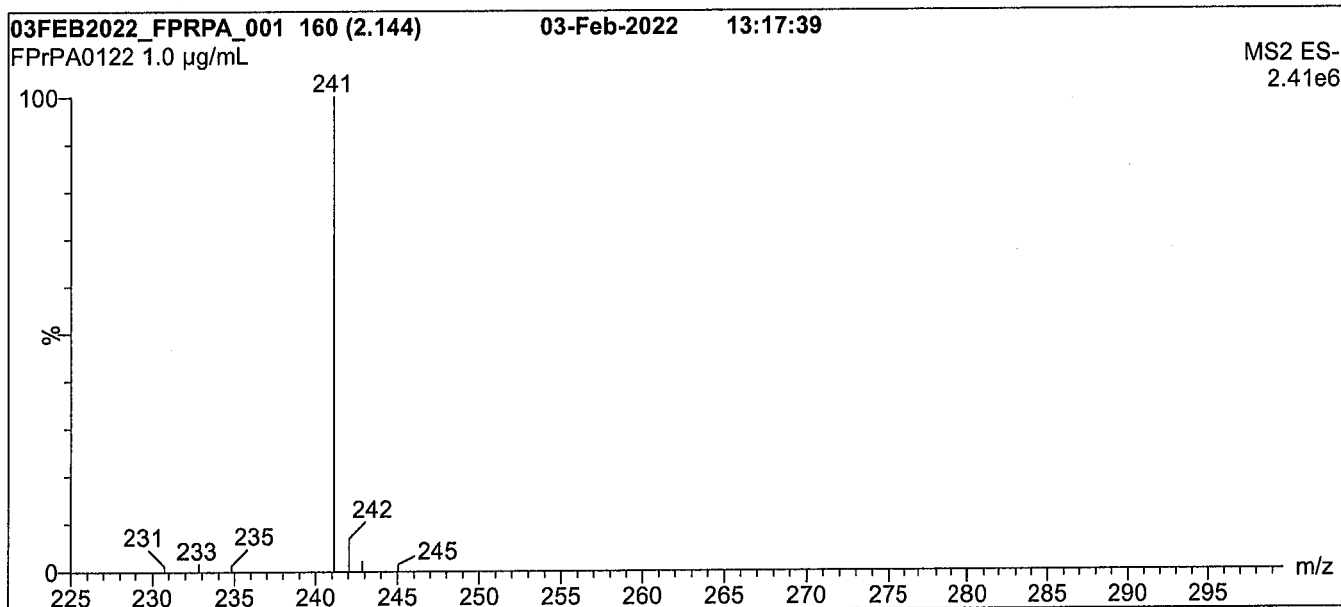
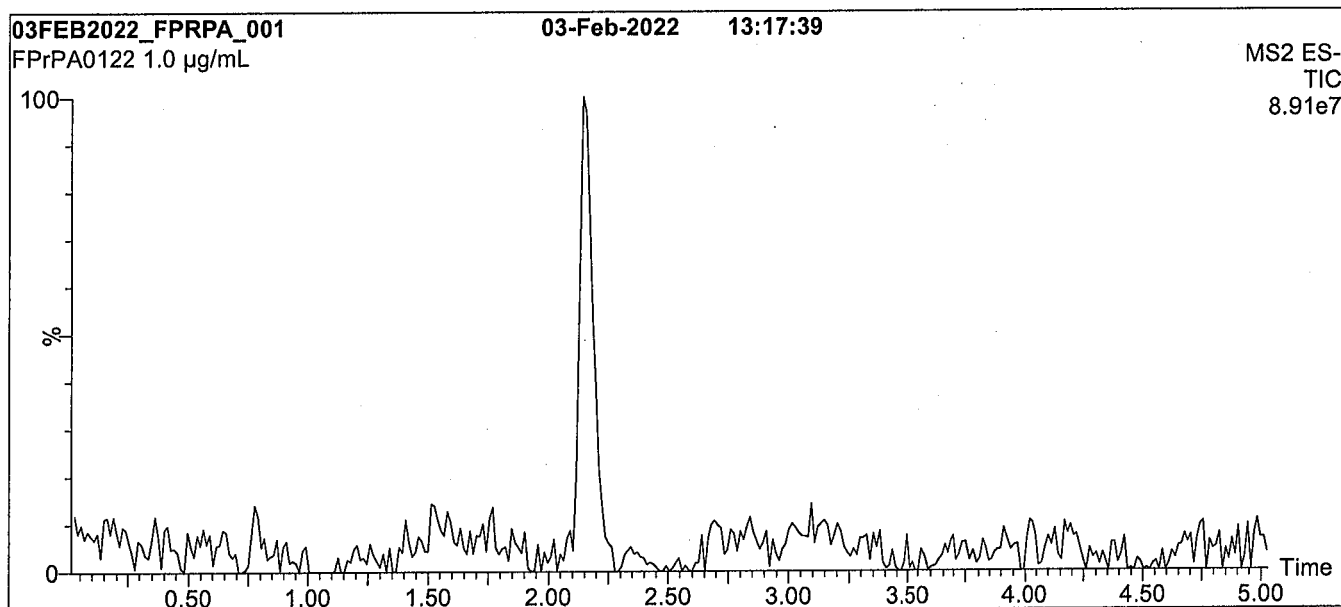
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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 or contact us directly at 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 RP₁₈
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient

Start: 60% H₂O / 40% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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)

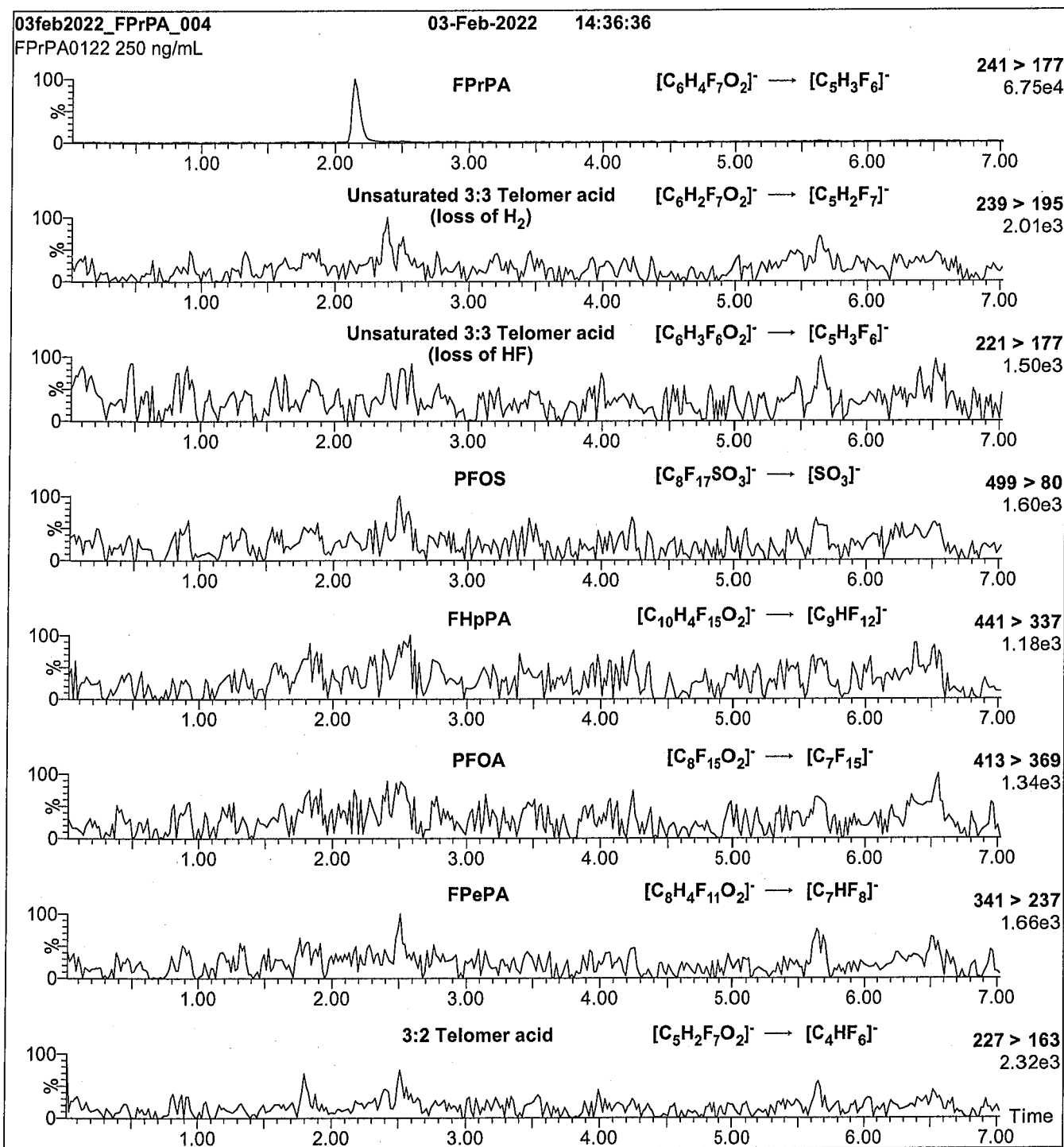
Source: Electrospray (negative)

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 μ 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

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:

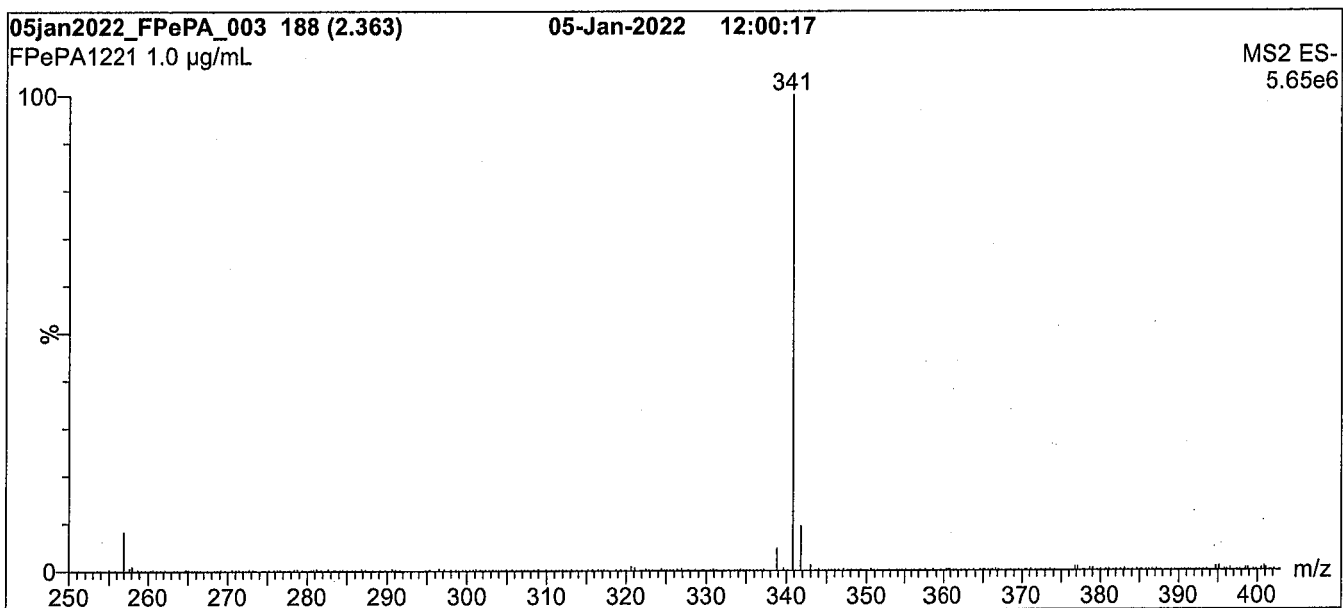
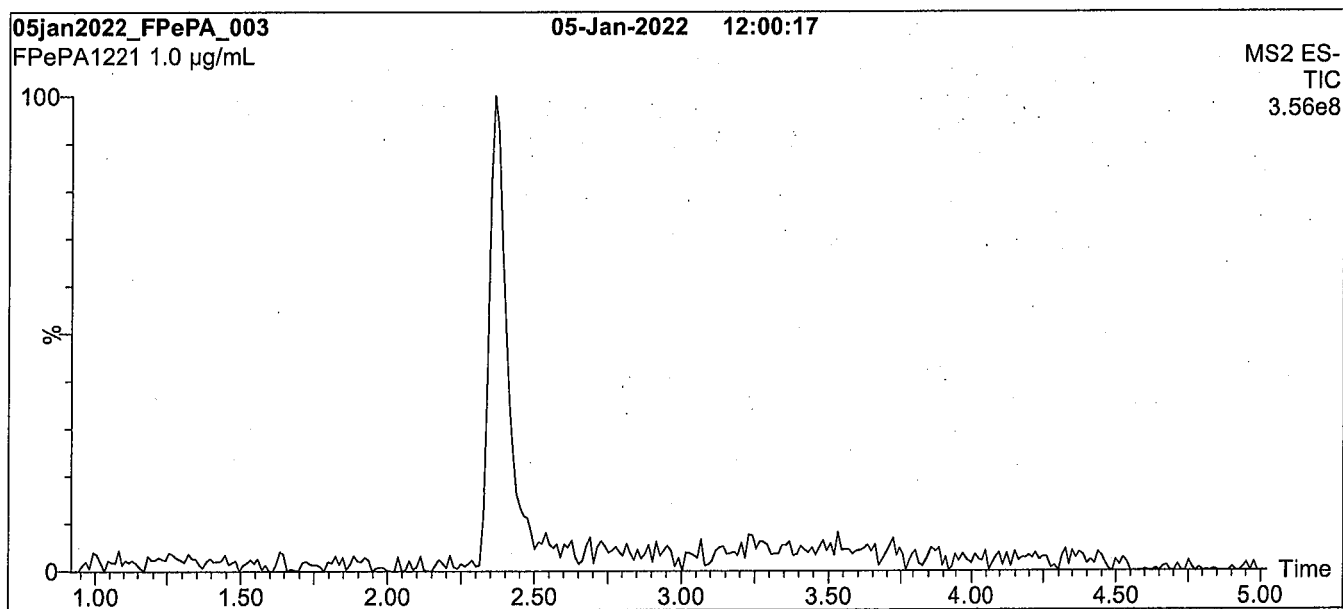
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QUALITY MANAGEMENT:

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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 RP₁₈
 1.7 µm, 2.1 x 100 mm

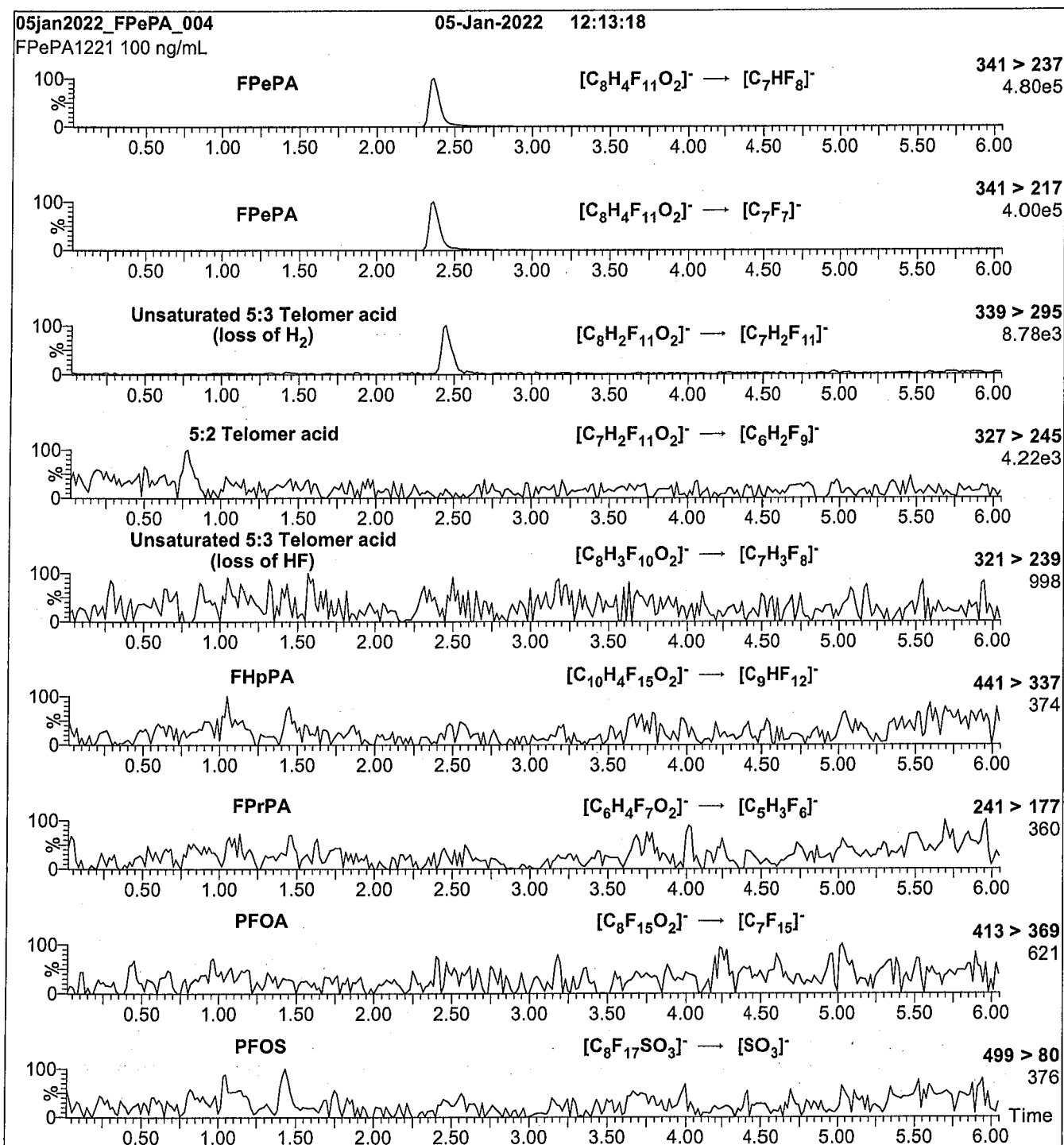
Mobile phase: Gradient
 Start: 45% H₂O / 55% (80:20 MeOH:ACN)
 (both with 10 mM NH₄OAc buffer)
 Ramp to 90% organic over 7 min and hold for
 3 min before returning to initial conditions in 0.75 min.
 Time: 12 min

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 μ 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

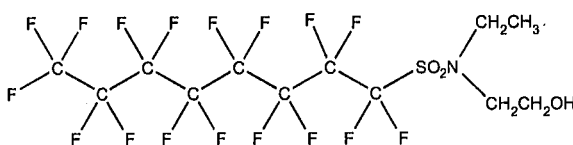
Analyte	Parent	CAS Number	Concentration	Units
5:3FTCA		914637-49-3	50	ug/mL



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: C₁₂H₁₀F₁₇NO₃S **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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SYNTHESIS / CHARACTERIZATION:

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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.

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:

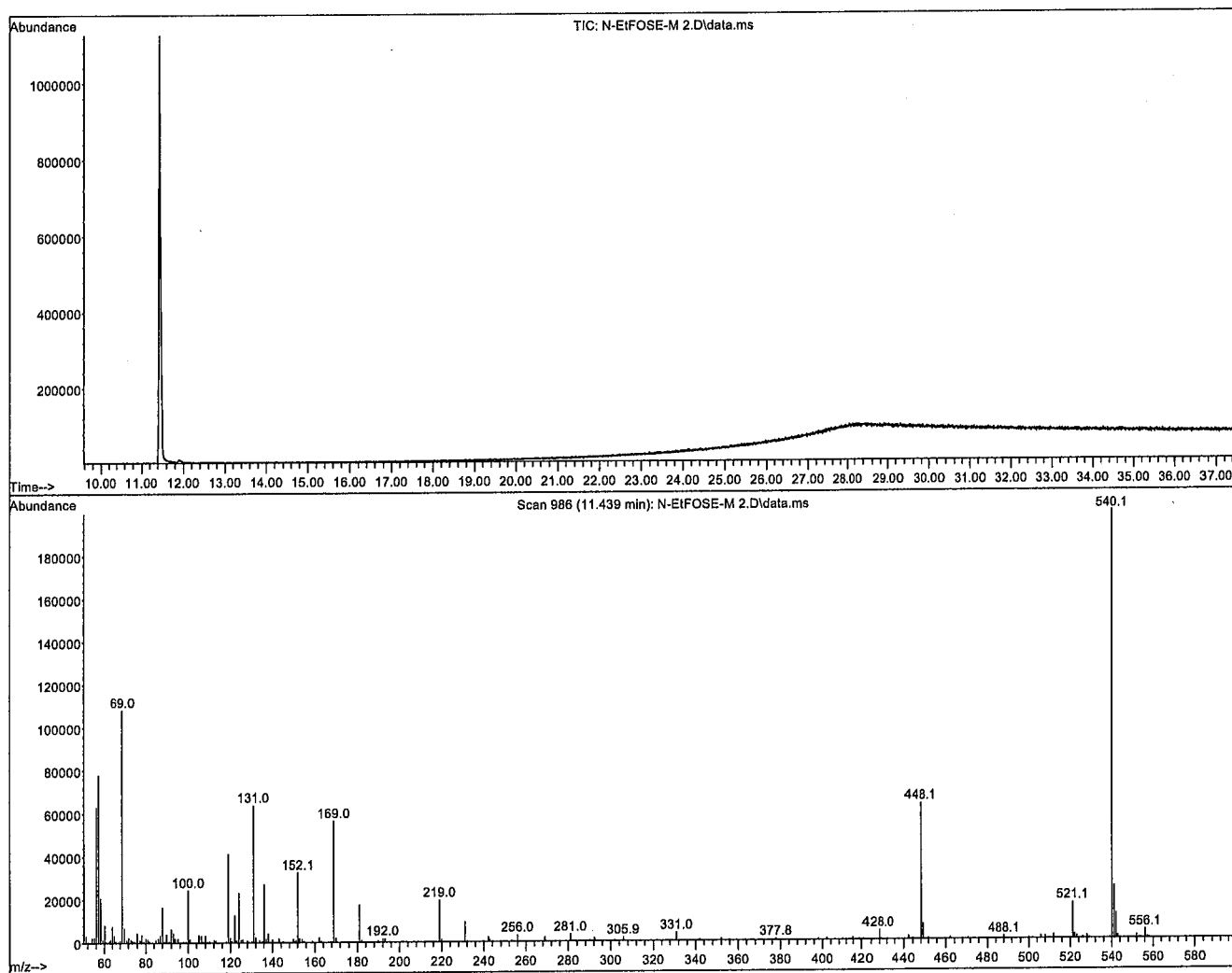
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QUALITY MANAGEMENT:

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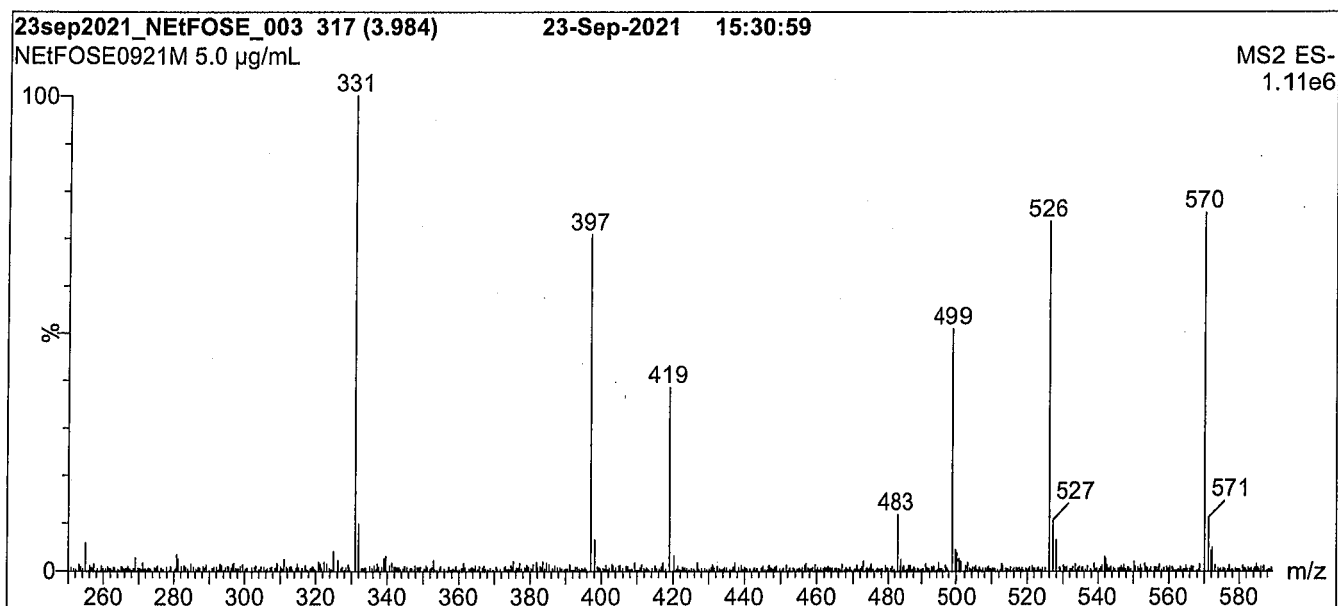
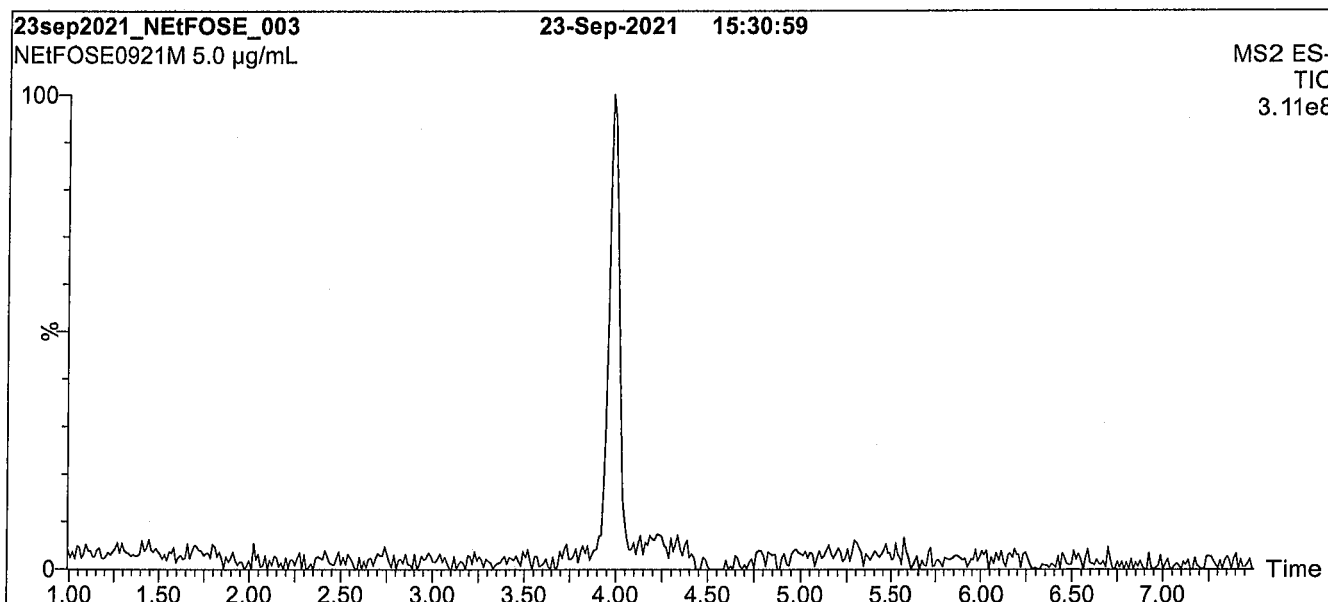
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Figure 1: N-EtFOSE-M; HRGC/LRMS Data (Full Scan and Mass Spectrum)**Conditions for Figure 1:**

Agilent 7890A HRGC
 Agilent 5975C MSD

Chromatographic Conditions:

Column: 30 m DB-5 (0.25 mm id, 0.25 μ 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 RP₁₈
1.7 µm, 2.1 x 100 mm

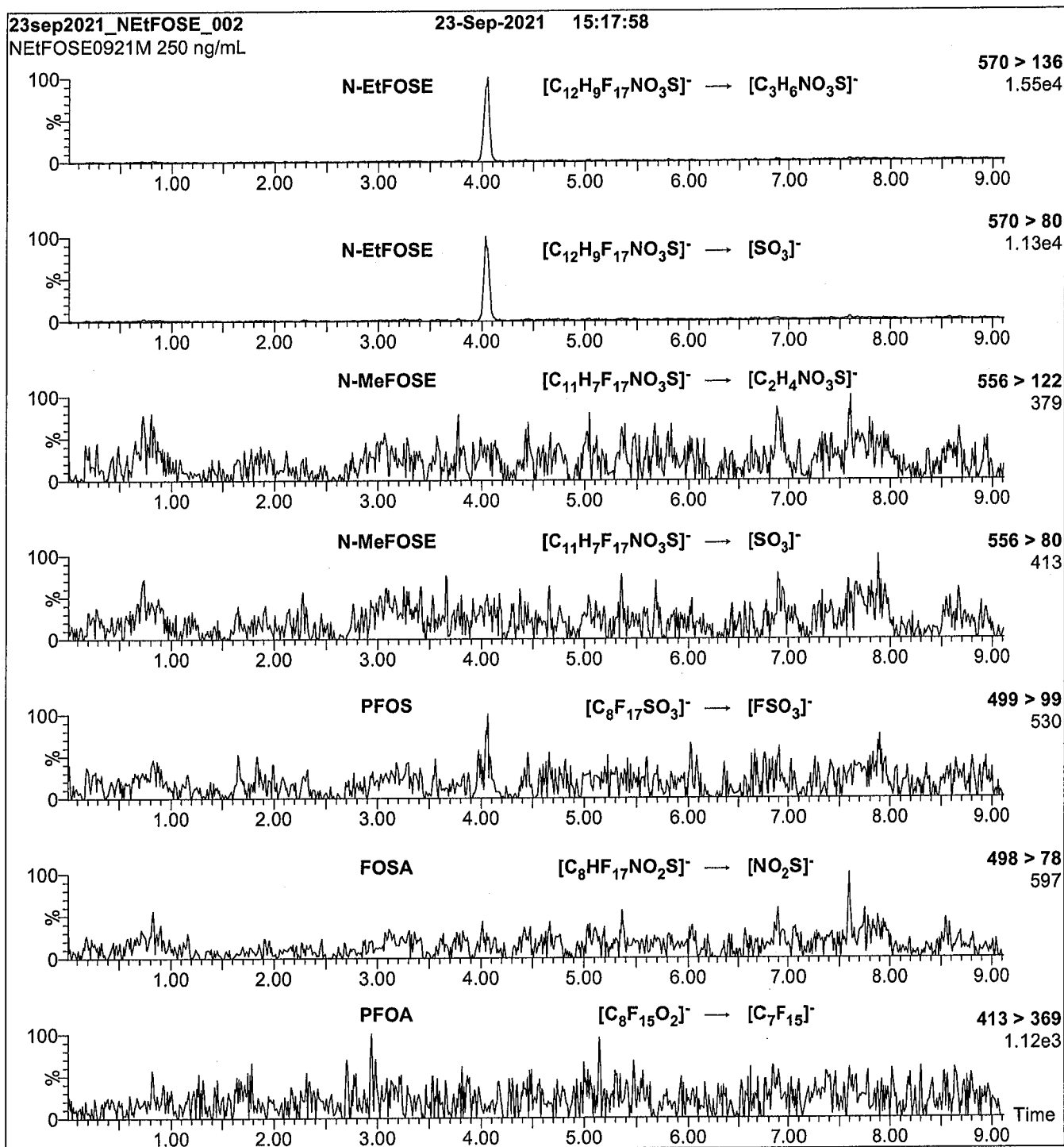
Mobile phase: Gradient
Start: 30% H₂O / 70% MeOH
Ramp to 90% organic over 8 min and hold for
1.5 min before returning to initial conditions in 1 min.
Time: 12 min

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 μ L/min**MS Parameters:**

Collision Gas (mbar) = 3.14e-3

Collision Energy (eV) = 32

Analytical Standard Record

22C0310

Description:	PFAS - SAS NtFOSE 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:	PFAS (Lot# PFAS0921M)
Vials:	1	Last Edit:	03/15/2022 15:59 by DAG

Analyte	Parent	CAS Number	Concentration	Units
NtFOSE		1691-99-2	50	ug/mL

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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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:

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

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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.

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LIMITED WARRANTY:

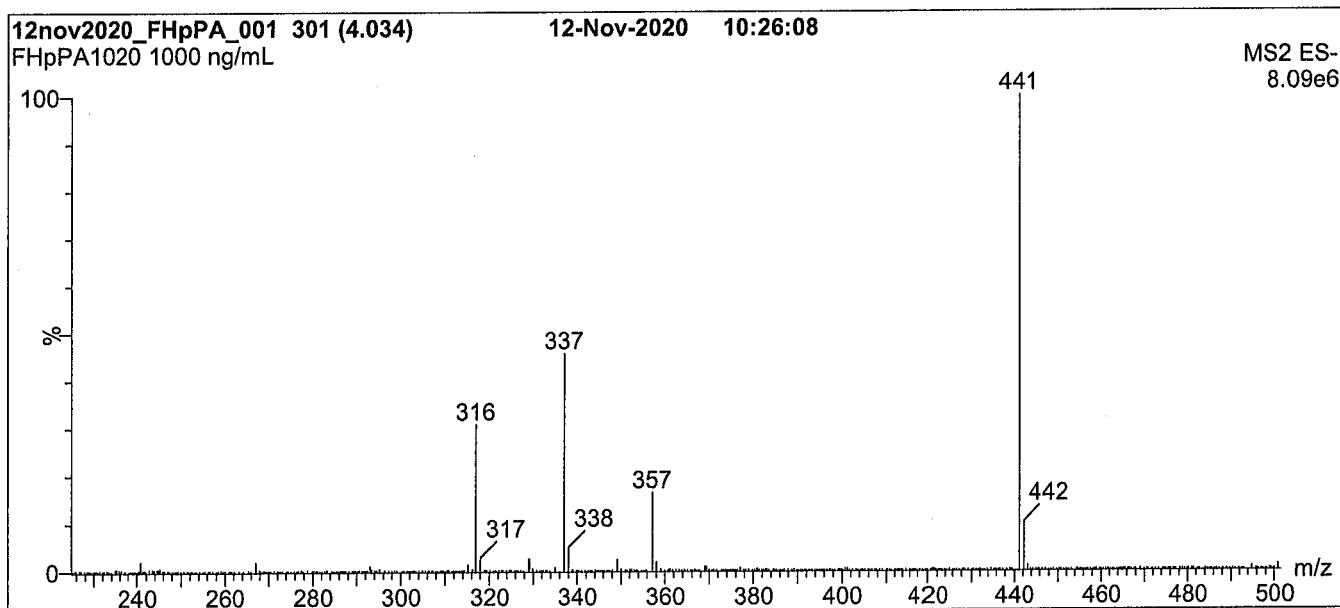
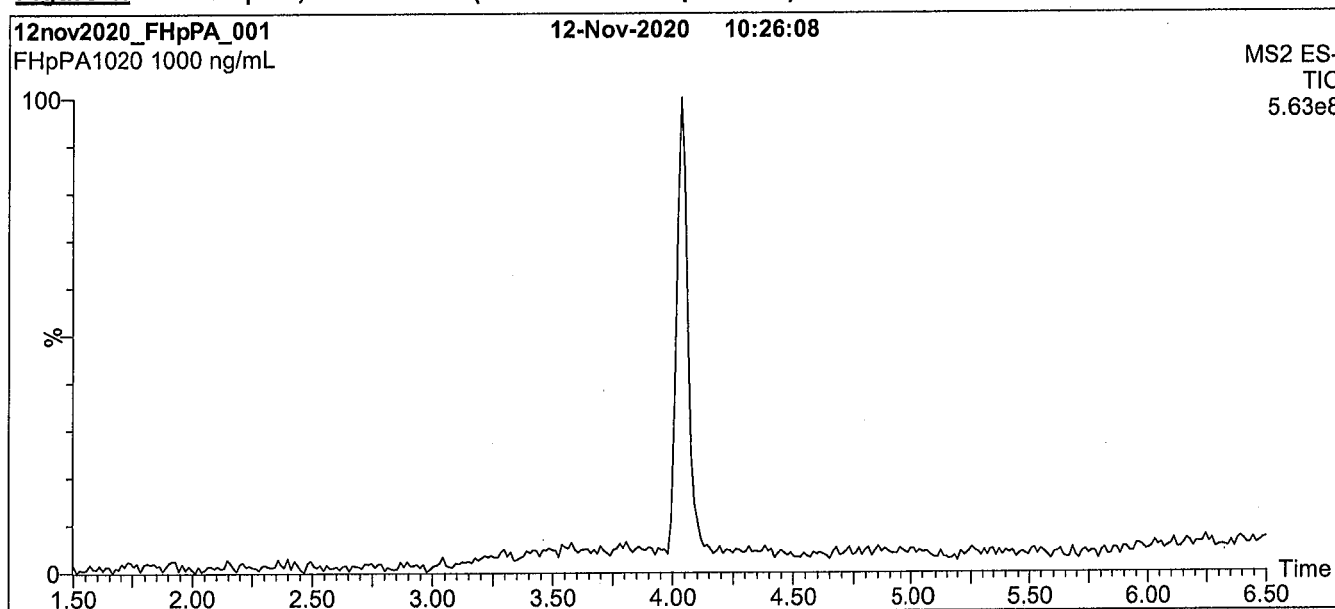
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Figure 1: FHpPA; LC/MS Data (TIC and Mass Spectrum)**Conditions for Figure 1:**

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

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

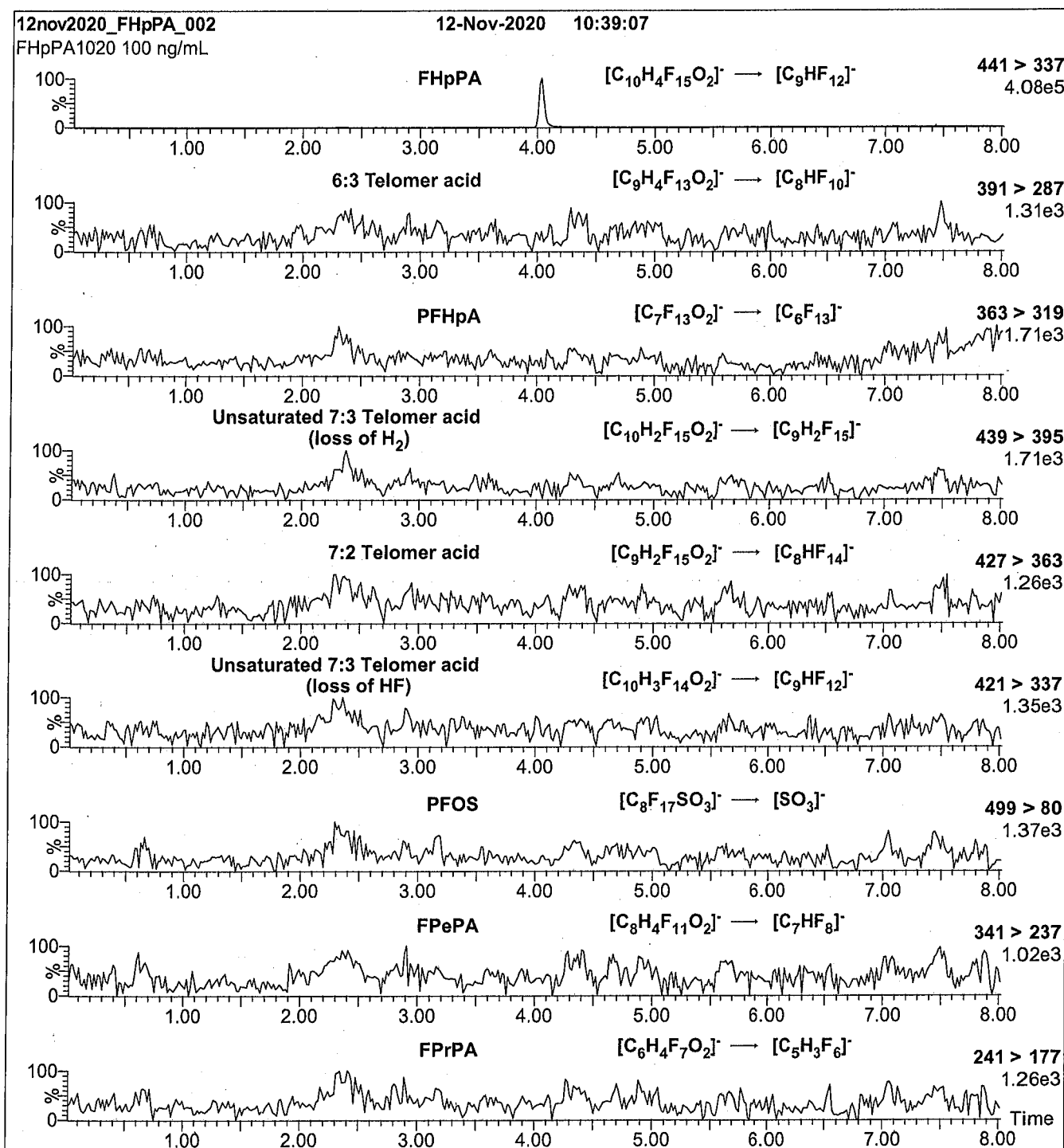
Source: Electrospray (negative)

Capillary Voltage (kV) = 0.50

Cone Voltage (V) = 28.50

Desolvation Temperature ($^{\circ}$ 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 μ 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#:
Final Volume (mls):	1	Department:	PFAS (Lot# PA1020)
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

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:	FHpPA
Vials:	1	Last Edit:	03/15/2022 16:00 by DAG

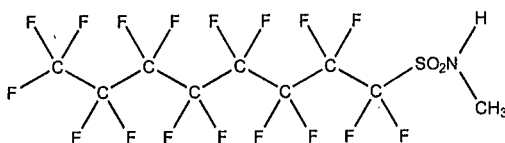
Analyte	Parent	CAS Number	Concentration	Units
7:3FTCA		812-70-4	50	ug/mL



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: C₉H₄F₁₇NO₂S **MOLECULAR WEIGHT:** 513.17
CONCENTRATION: 50.0 ± 2.5 µg/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

INTENDED USE:

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UNCERTAINTY:

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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:

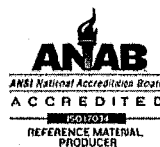
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

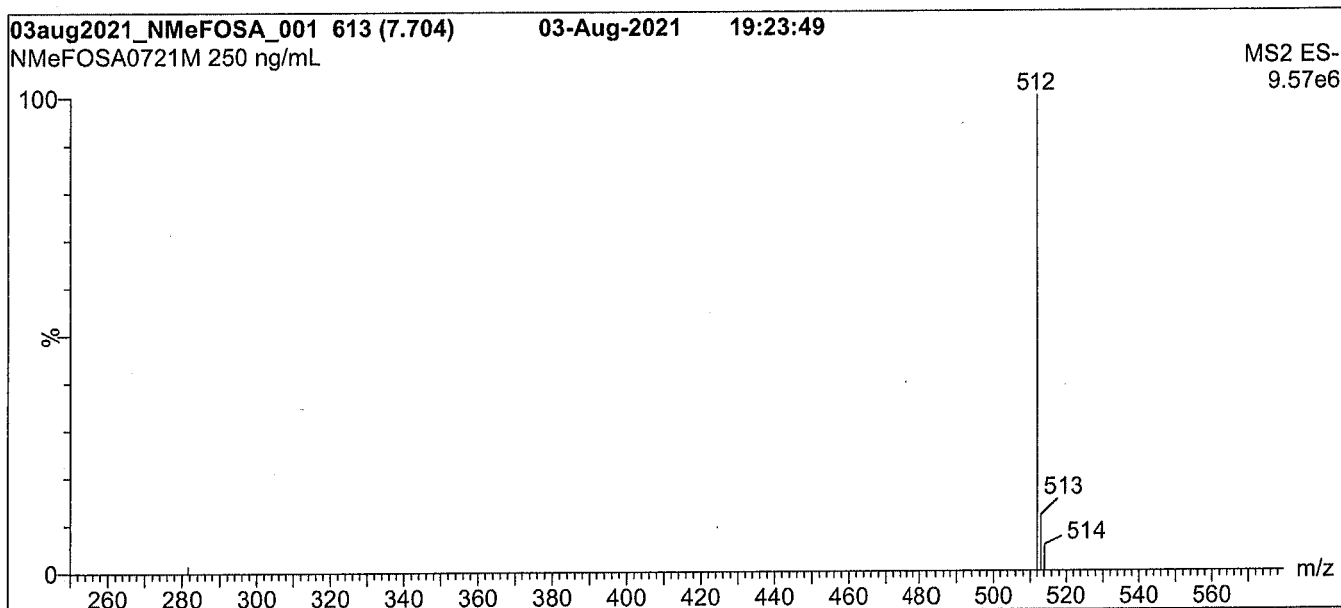
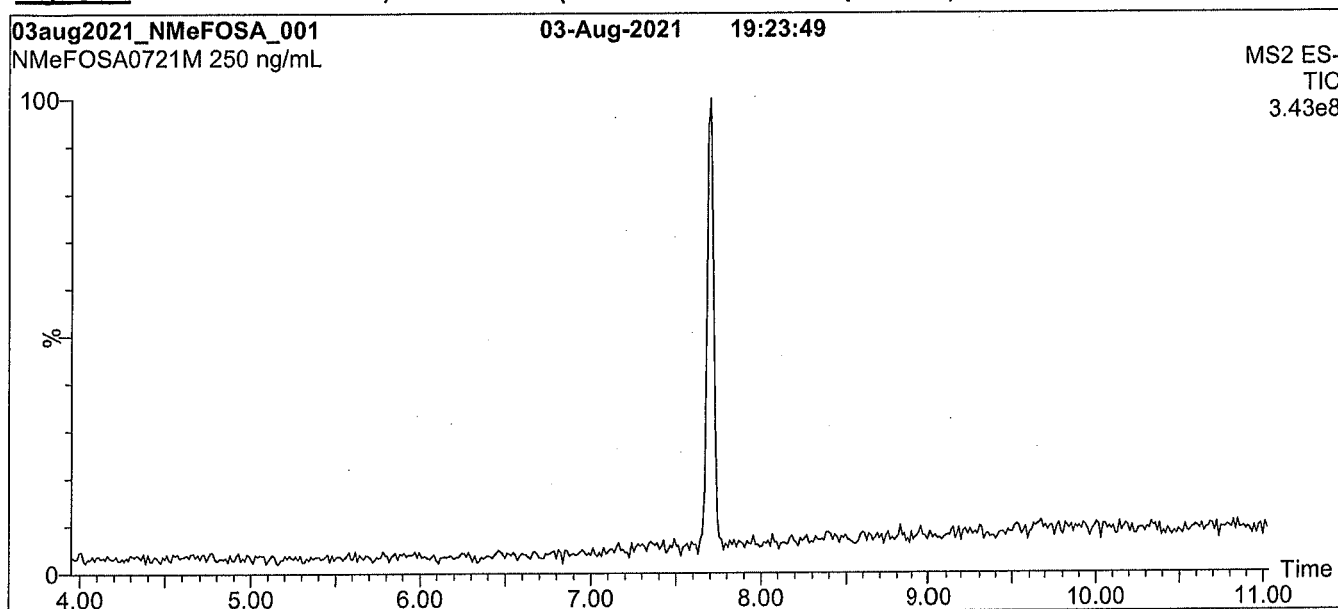
At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

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 or contact us directly at info@well-labs.com

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 RP₁₈
1.7 μ m, 2.1 x 100 mm

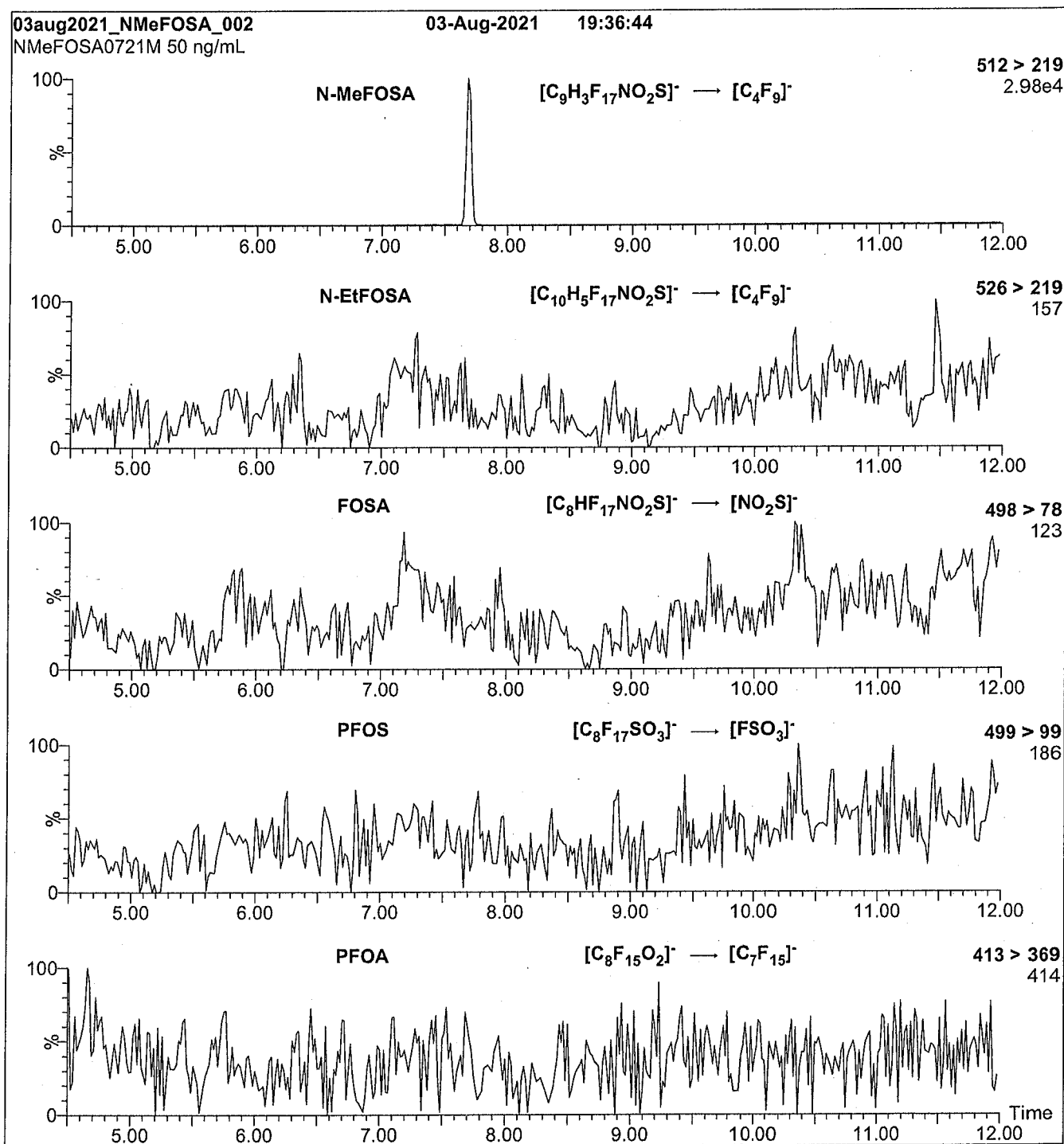
Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ 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 μ 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

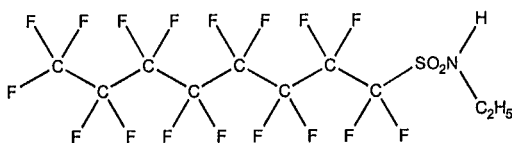
Analyte	Parent	CAS Number	Concentration	Units
NMeFOSA		31506-32-8	50	ug/mL



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)

ADDITIONAL INFORMATION:

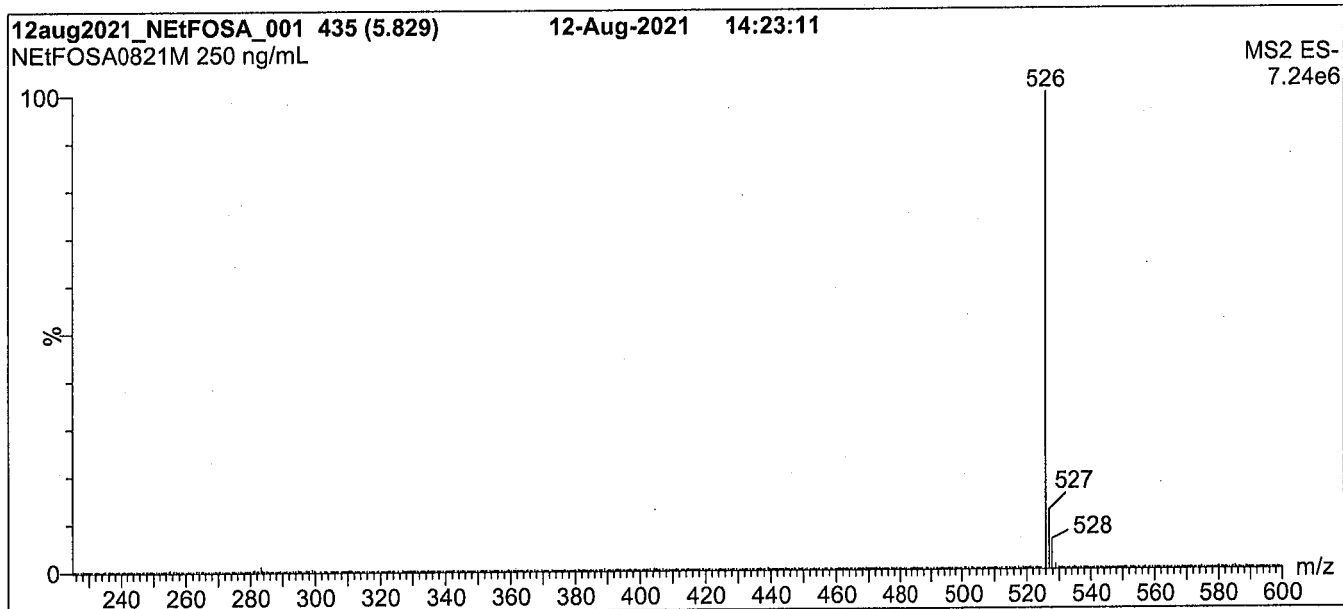
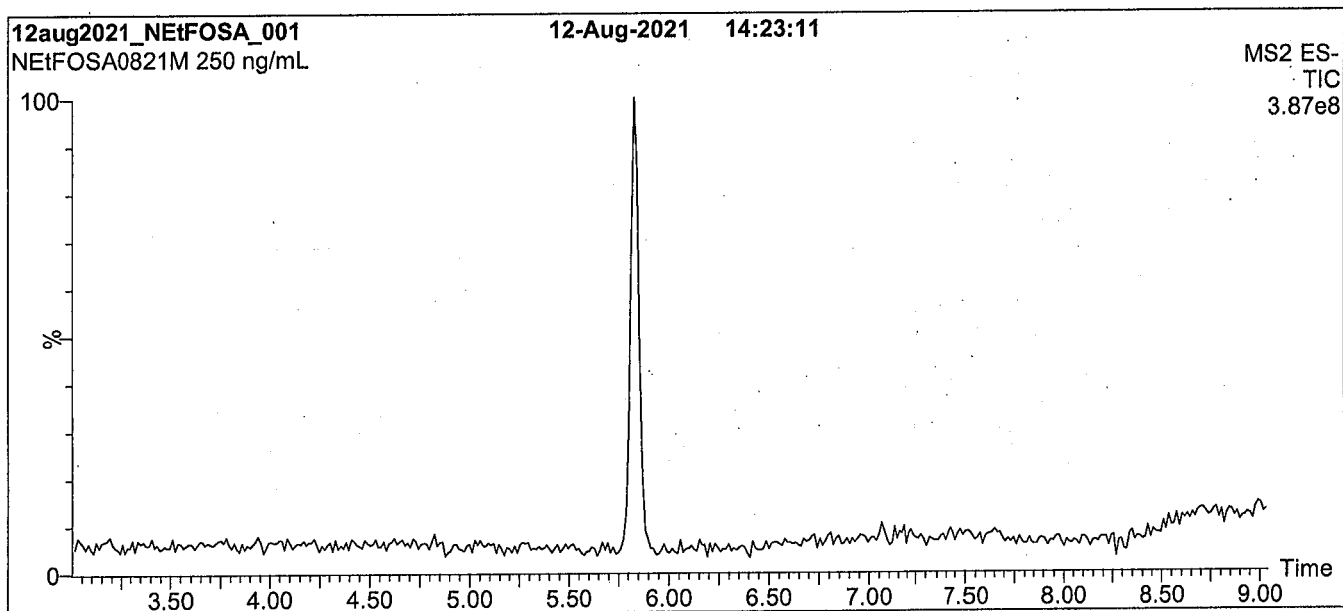
- See page 2 for further details.

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Certified By: 
 B.G. Chittim, General Manager

Date: 08/16/2021
 (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

Figure 1: N-EtFOSA-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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 30% H₂O / 70% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

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:

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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.

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:

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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:

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QUALITY MANAGEMENT:

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Table A: PFAC-MXF; Components and Concentrations (ng/mL; ± 5% in Methanol/Water (<1%))

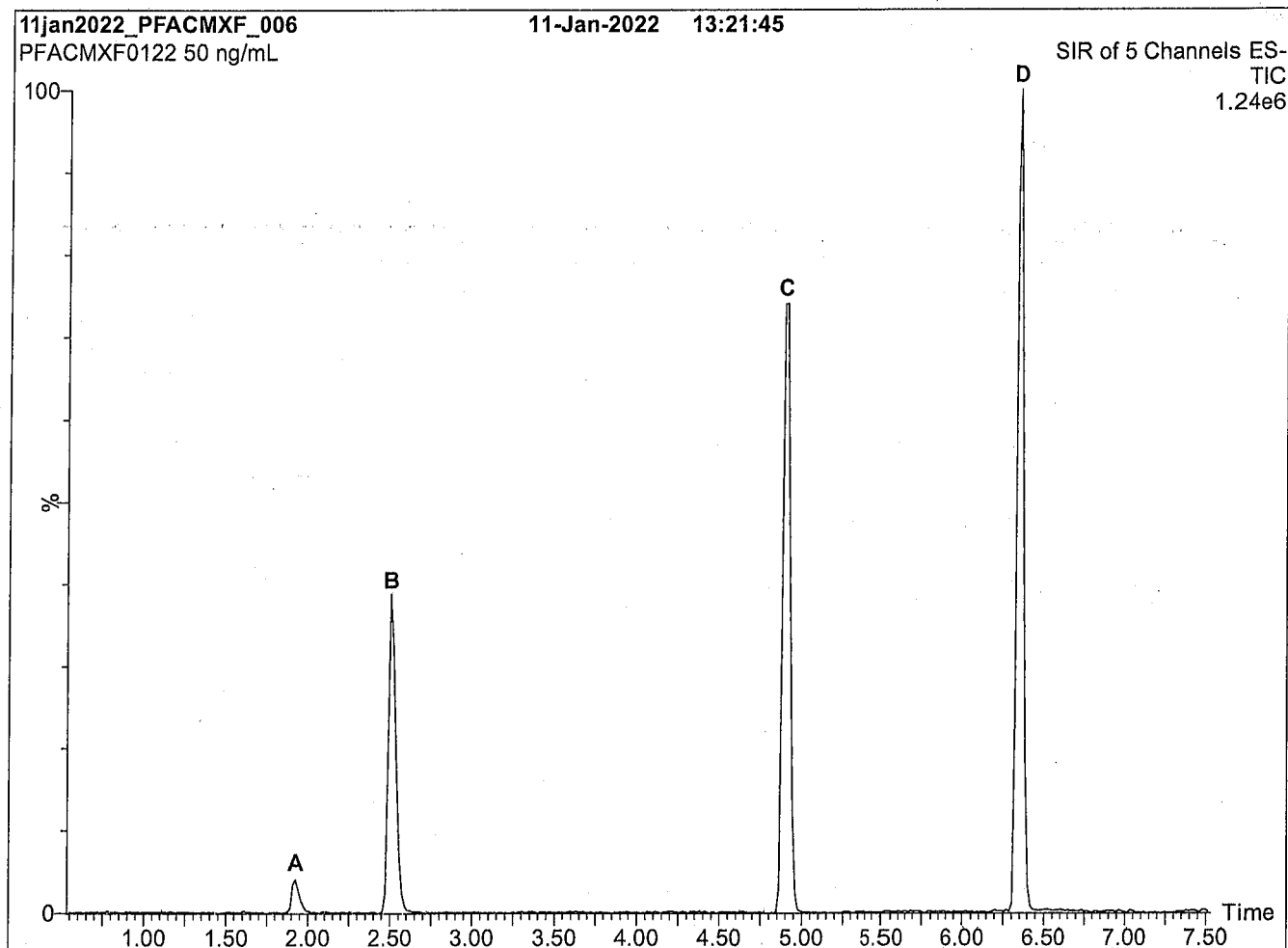
Compound	Acronym	Concentration* (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the acid	
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid	HFPO-DA	2000		A
Sodium dodecafluoro-3H-4,8-dioxananoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	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 RP₁₈
1.7 μ m, 2.1 x 100 mm

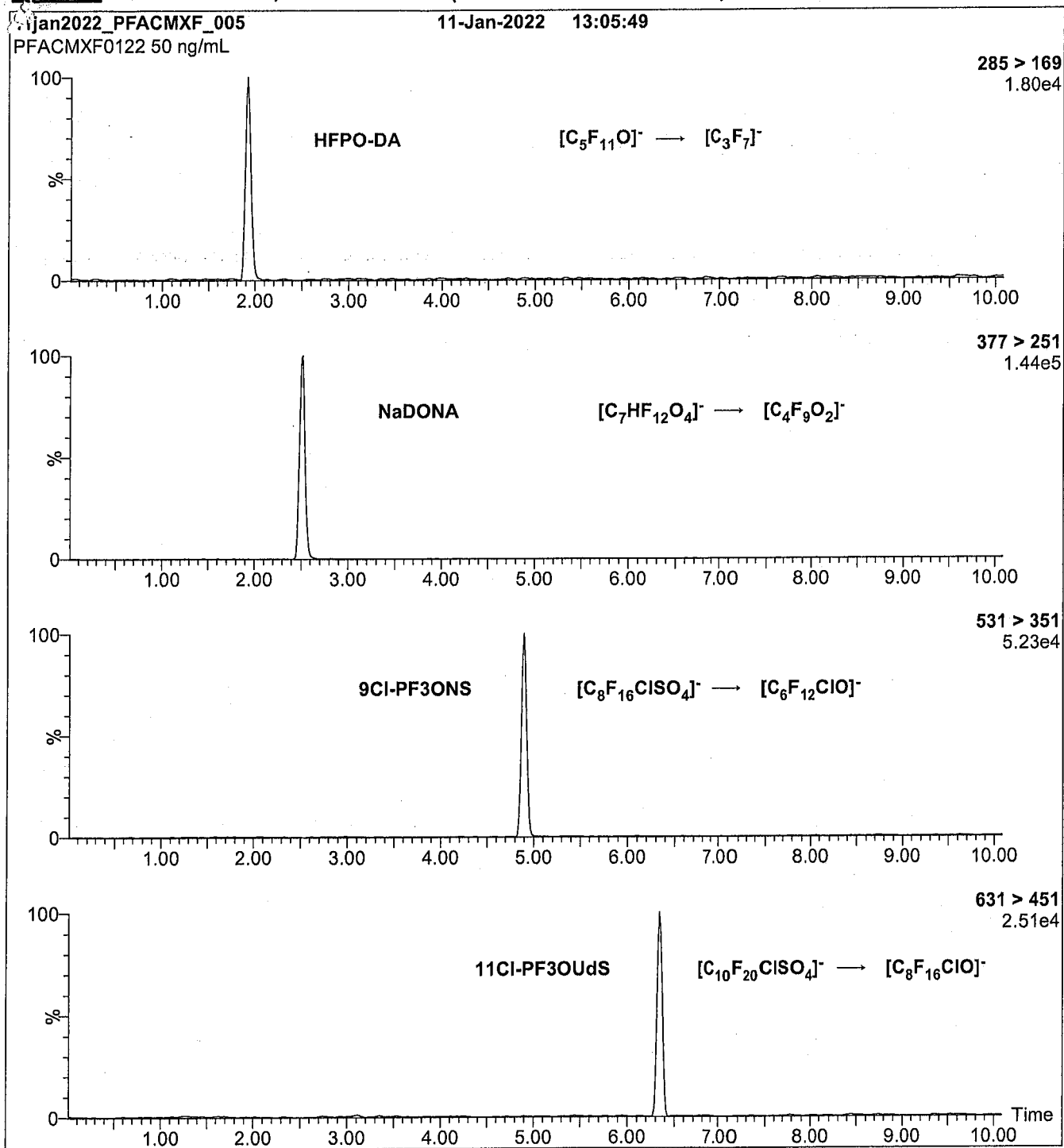
Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ 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 μ 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 (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₅, C₇, C₉, C₁₀ and C₁₂ linear; C₆ and C₈ 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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SYNTHESIS / CHARACTERIZATION:

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

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EXPIRY DATE / PERIOD OF VALIDITY:

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QUALITY MANAGEMENT:

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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 ^a	N-MeFOSAA: linear isomer	0.760		20
	N-MeFOSAA: Σ branched isomers	0.240		17
N-ethylperfluorooctanesulfonamidoacetic acid ^b	N-EtFOSAA: linear isomer	0.775		22
	N-EtFOSAA: Σ 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 perfluorohexanedisulfonate ^c	PFHxSK: linear isomer	0.811	0.741	9
	PFHxSK: Σ branched isomers	0.189	0.173	8
Sodium perfluoro-1-heptadisulfonate	L-PFHpS	1.00	0.953	12
Potassium perfluorooctanedisulfonate ^d	PFOSK: linear isomer	0.788	0.732	15
	PFOSK: Σ branched isomers	0.211	0.196	13
Sodium perfluoro-1-nonanedisulfonate	L-PFNS	1.00	0.962	19
Sodium perfluoro-1-decanedisulfonate	L-PFDs	1.00	0.965	24
Sodium perfluoro-1-dodecanedisulfonate	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-perfluorodecanedisulfonate	8:2Fts	4.00	3.84	16

^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.

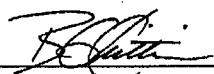
^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^c See Table D for percent composition of linear and branched PFHxSK isomers.

^d 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 ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ 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 ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ 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}F -NMR)*

Isomer	Compound	Structure	Percent Composition by ^{19}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**	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}(\text{SO}_3^-\text{K}^+) \\ \\ \text{CF}_3 \end{array}$	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.

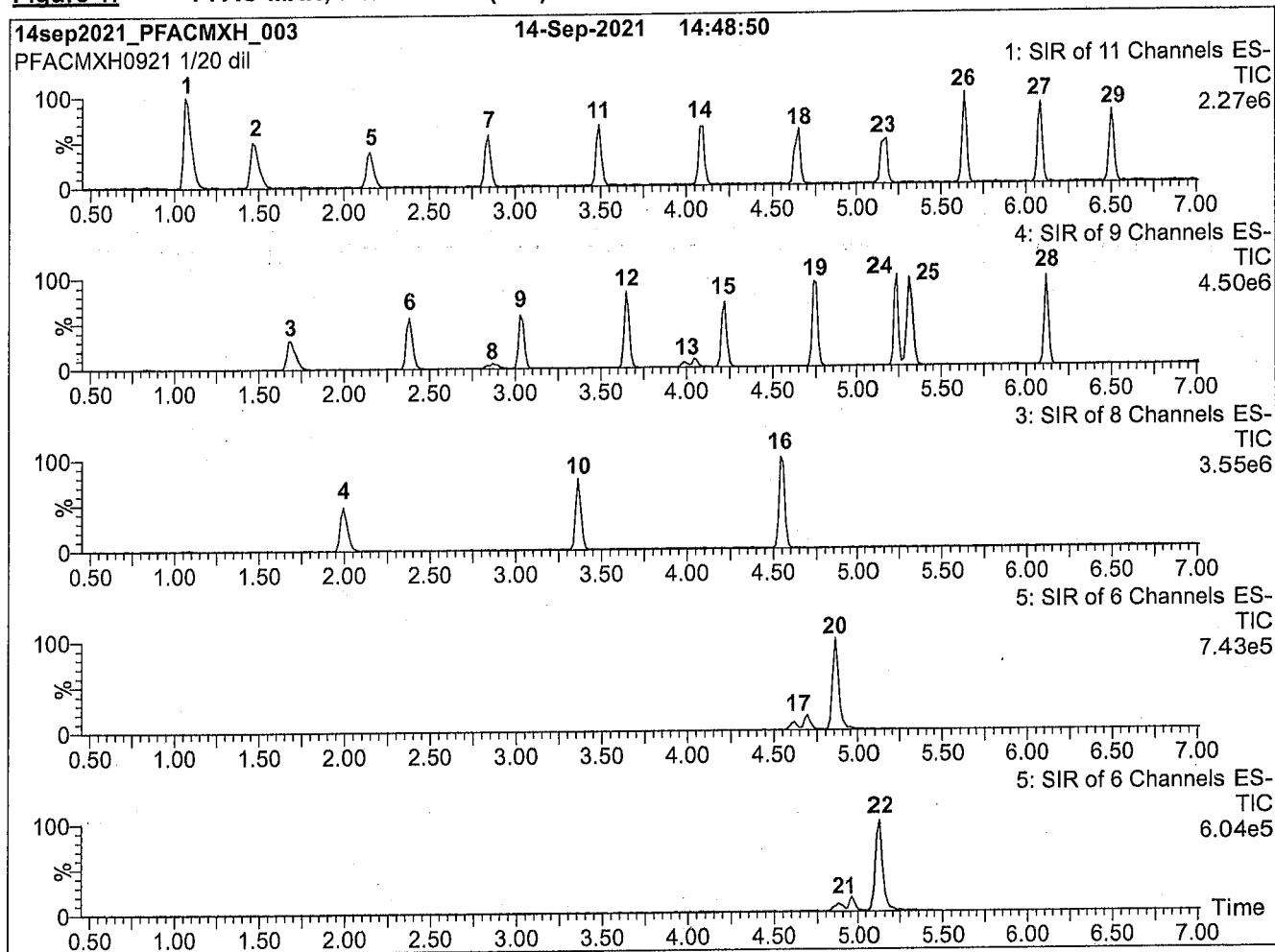
** Systematic Name: Potassium perfluorohexane-2-sulfonate.

Table E: PFOSK; Isomeric Components and Percent Composition (by ¹⁹F-NMR)*

Isomer	Compound	Structure	Percent Composition by ¹⁹ F-NMR	
1	Potassium perfluoro-1-octanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺	78.8	78.8
2	Potassium 1-trifluoromethylperfluoroheptanesulfonate**	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF ₂ CF(SO ₃ ⁻)K ⁺ CF ₃	1.2	21.1
3	Potassium 2-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF ₂ CF(CF ₃)SO ₃ ⁻ K ⁺ CF ₃	0.6	
4	Potassium 3-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF ₂ CF(CF ₃)CF ₂ SO ₃ ⁻ K ⁺ CF ₃	1.9	
5	Potassium 4-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF ₂ CF(CF ₃)CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	2.2	
6	Potassium 5-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF ₂ CF(CF ₃)CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	4.5	
7	Potassium 6-trifluoromethylperfluoroheptanesulfonate	CF ₃ CF(CF ₃)CF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	10.0	
8	Potassium 5,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CCF ₂ CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.2	
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF ₂ CCF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.03	
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF(CF ₃)CF ₂ CF ₂ CF ₂ SO ₃ ⁻ K ⁺ CF ₃	0.4	
11	Potassium 3,5-di(trifluoromethyl)perfluorohexanesulfonate	CF ₃ CF ₃ CF(CF ₃)CF ₂ CF(CF ₃)CF ₂ SO ₃ ⁻ K ⁺ CF ₃	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 RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc 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 μ 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

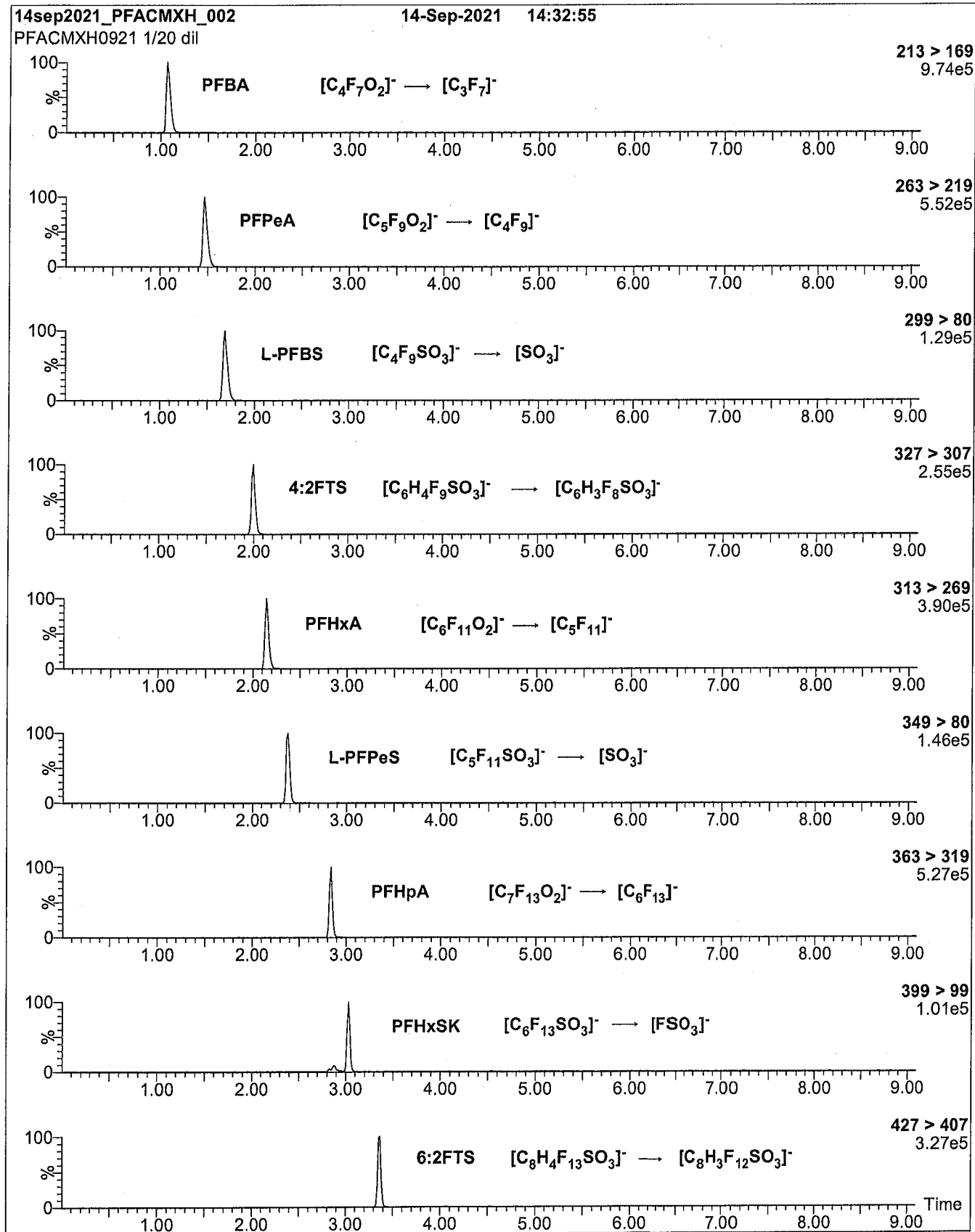
Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)

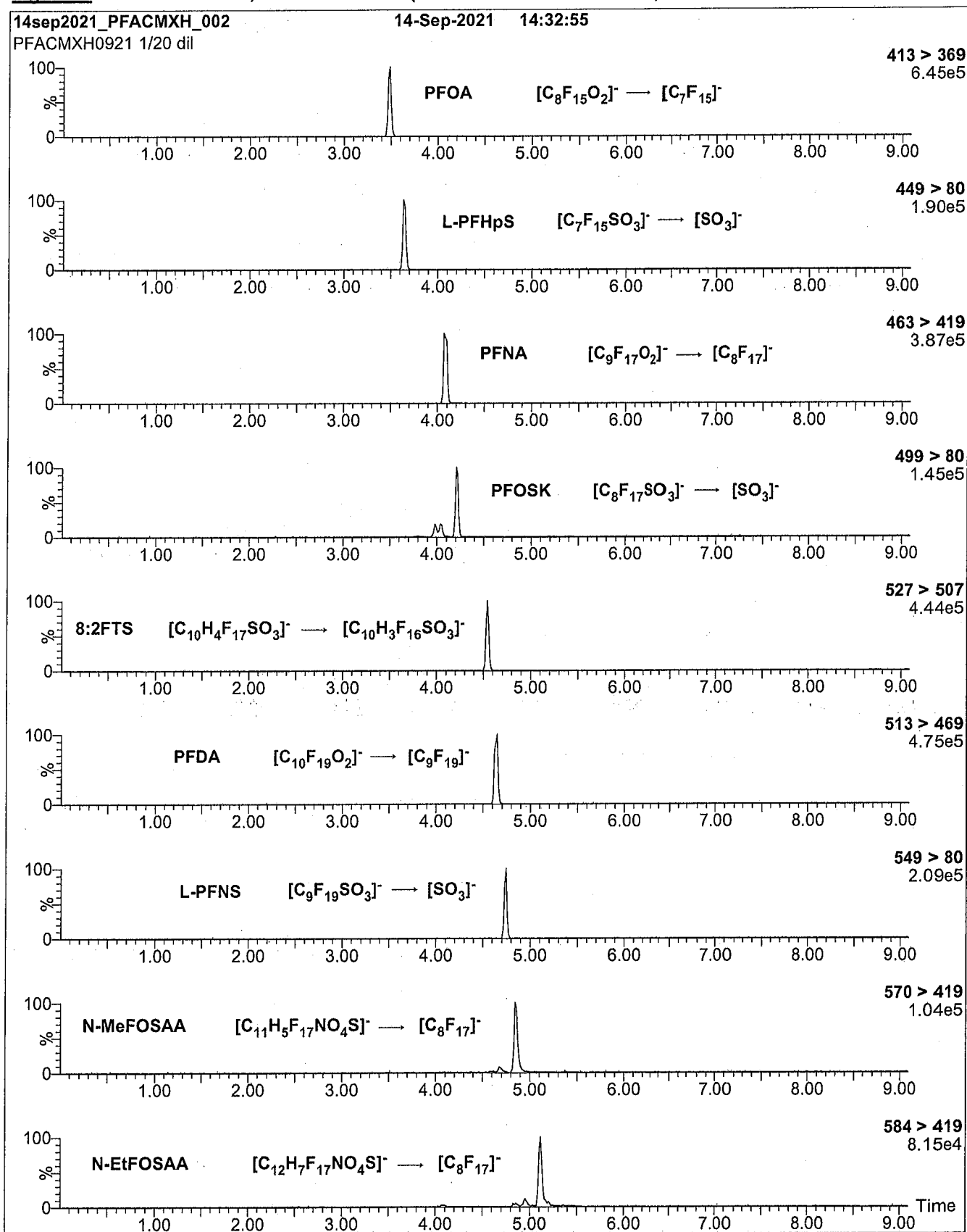
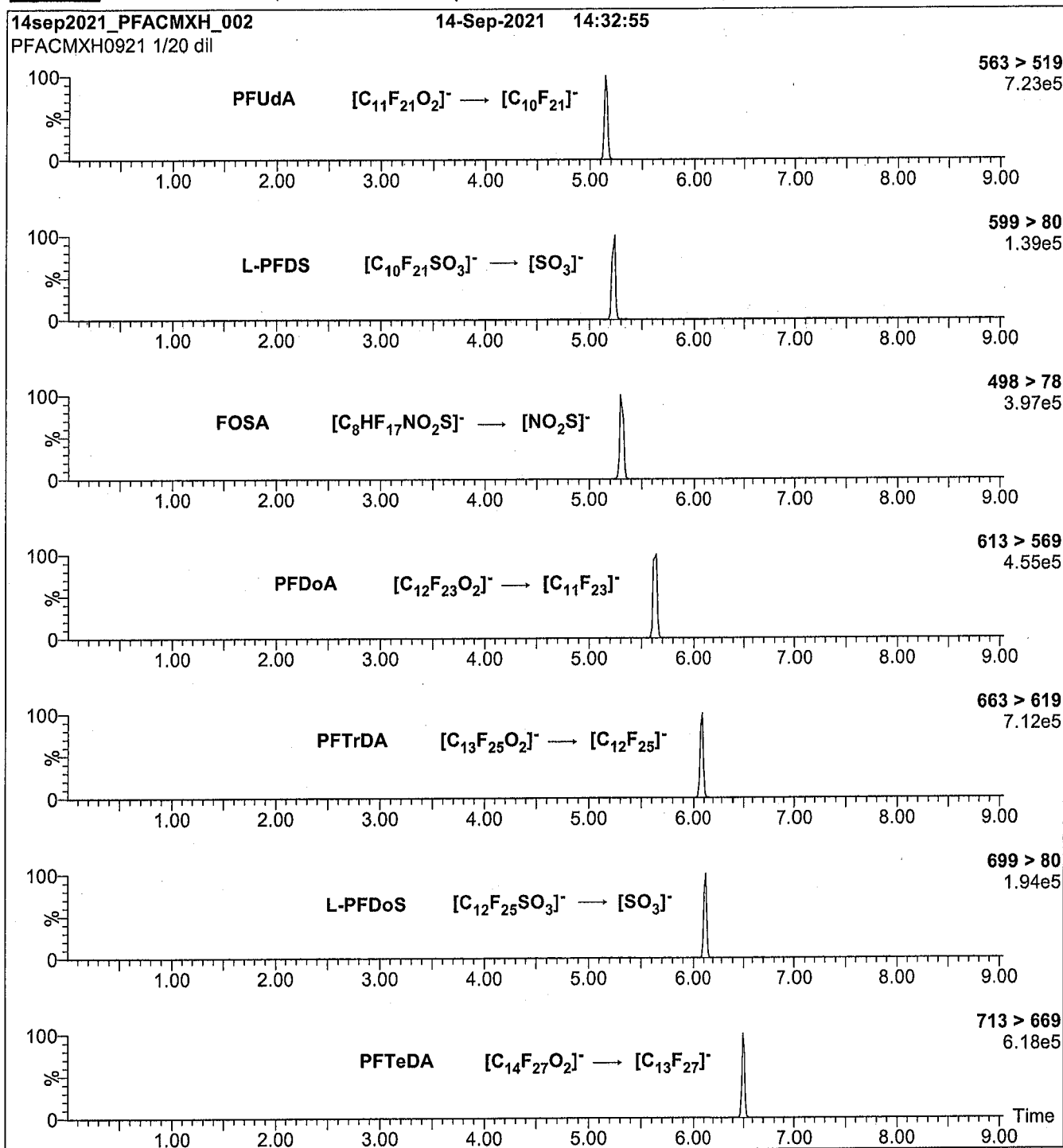
Figure 2: PFAC-MXH; LC/MS/MS Data (Selected MRM Transitions)

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 μ 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**

<u>PRODUCT CODE:</u>	PFAC-MXG
<u>LOT NUMBER:</u>	PFACMXG0222
<u>SOLVENT(S):</u>	Methanol/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	02/07/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	02/22/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	02/22/2027
<u>RECOMMENDED STORAGE:</u>	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).



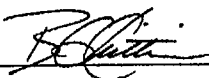
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

Table A: PFAC-MXG; Components and Concentrations (ng/mL; \pm 5% in methanol/water (<1%))

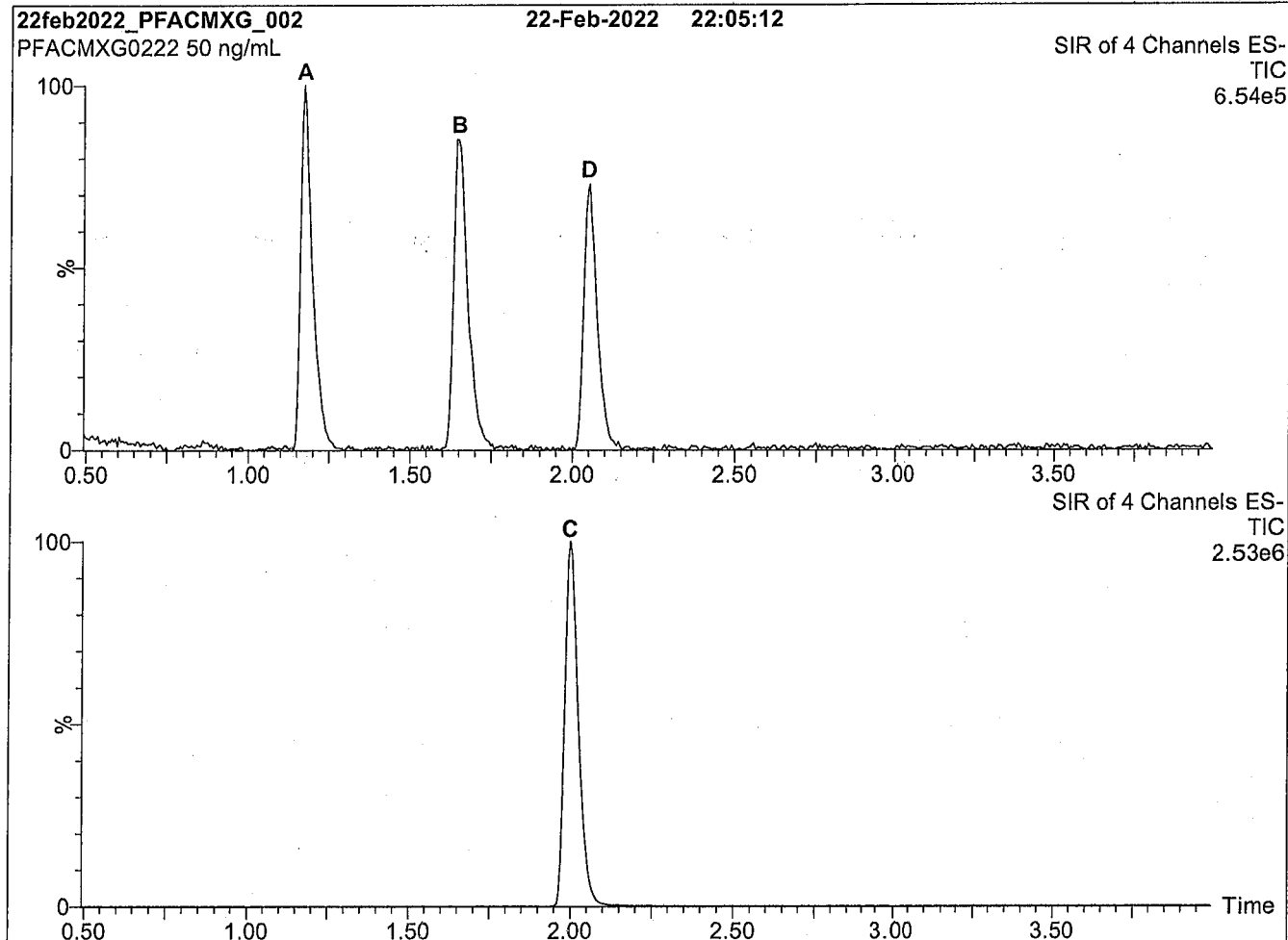
Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 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 RP₁₈
1.7 μ m, 2.1 x 100 mm

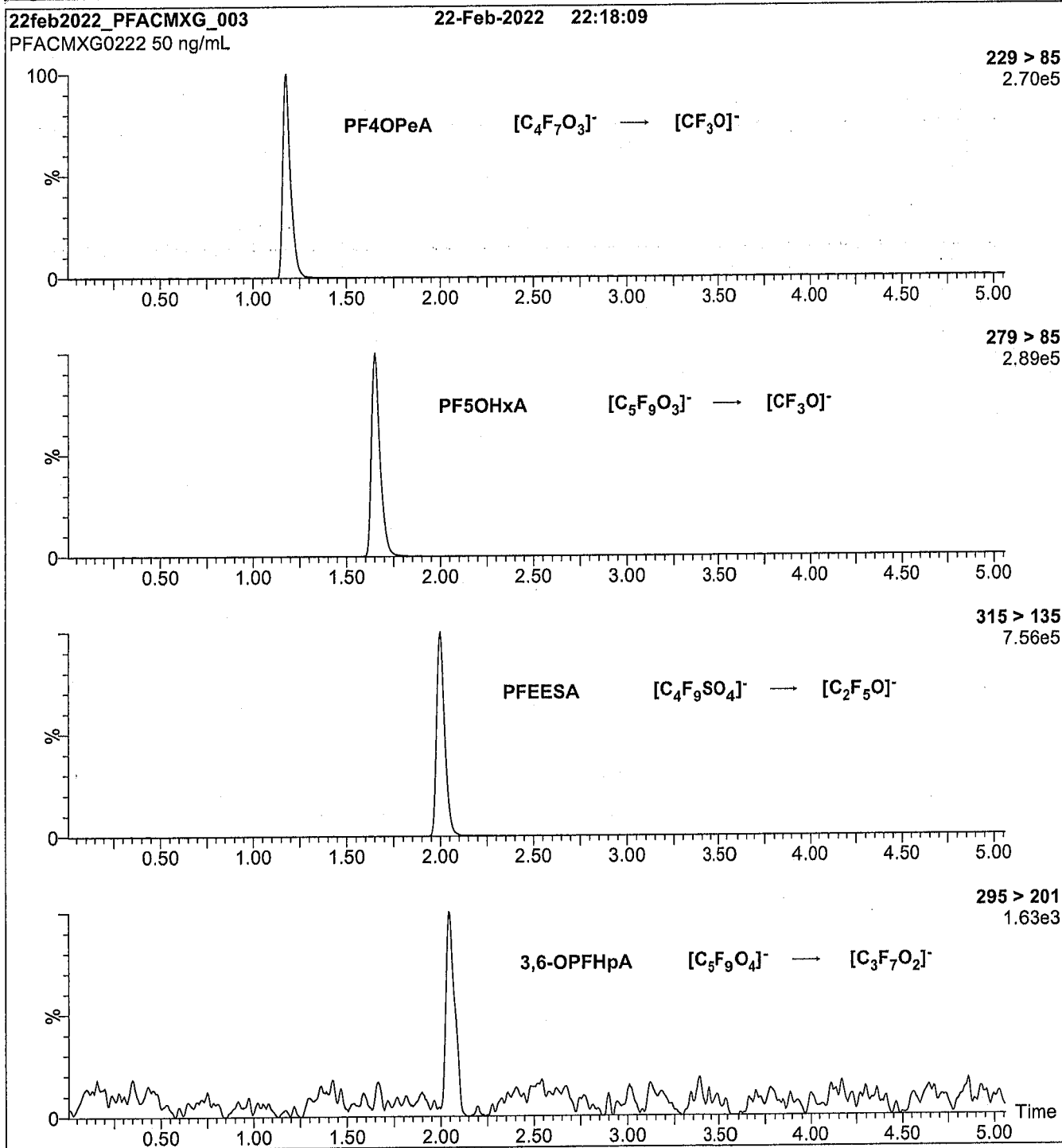
Mobile phase: Gradient
Start: 50% H₂O / 50% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ 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 μ 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

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



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic Acids and Sulfonate Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXG
<u>LOT NUMBER:</u>	PFACMXG0222
<u>SOLVENT(S):</u>	Methanol/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	02/07/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	02/22/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	02/22/2027
<u>RECOMMENDED STORAGE:</u>	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.

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

Analytical Standard Record

22I0342

Description: PFAS - MIX MXG 2ug/mL Expires: 02/22/2027
Standard Type: Other Prepared: 02/07/2022
Solvent: MeOH Prepared By: Dipti Gokal
Final Volume (mls): 1 Department: PFAS
Vials: 1 Last Edit: 09/26/2022 09:55 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

22I0343

Description:	PFAS - MIX MXF 2ug/mL	Expires:	01/11/2025
Standard Type:	Other	Prepared:	09/26/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	09/26/2022 09:47 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-MXF

Native Replacement PFAS Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXF
<u>LOT NUMBER:</u>	PFACMXF0122
<u>SOLVENT(S):</u>	Methanol / Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	01/10/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	01/11/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	01/11/2025
<u>RECOMMENDED STORAGE:</u>	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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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)

Analytical Standard Record

22I0343

Description:	PFAS - MIX MXF 2ug/mL	Expires:	01/11/2025
Standard Type:	Other	Prepared:	01/10/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	09/26/2022 09:54 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

APPL ID:2210334

PFAC-MXH

Native PFAS
Solution/Mixture

<u>PRODUCT CODE:</u>	PFAC-MXH
<u>LOT NUMBER:</u>	PFACMXH0822
<u>SOLVENT(S):</u>	Methanol/Isopropanol (2%)/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	08/05/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	08/08/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	08/08/2027
<u>RECOMMENDED STORAGE:</u>	Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₅, C₇, C₉, C₁₀ and C₁₂ linear; C₆ and C₈ 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 N-MeFOSAA
 Table C: Isomeric Components and Percent Composition of N-EtFOSAA
 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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Table A: PFAC-MXH; Components and Concentrations
(ng/mL, \pm 5% in methanol/isopropanol (2%)/water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Perfluoro-n-butanoic acid	PFBA	4000		1
Perfluoro-n-pentanoic acid	PFPeA	2000		2
Perfluoro-n-hexanoic acid	PFHxA	1000		5
Perfluoro-n-heptanoic acid	PFHpA	1000		7
Perfluoro-n-octanoic acid	PFOA	1000		11
Perfluoro-n-nonanoic acid	PFNA	1000		14
Perfluoro-n-decanoic acid	PFDA	1000		18
Perfluoro-n-undecanoic acid	PFUdA	1000		24
Perfluoro-n-dodecanoic acid	PFD _o A	1000		26
Perfluoro-n-tridecanoic acid	PFT _r DA	1000		27
Perfluoro-n-tetradecanoic acid	PFT _e DA	1000		29
Perfluoro-1-octanesulfonamide	FOSA	1000		23
N-methylperfluorooctanesulfonamidoacetic acid ^a	N-MeFOSAA: linear isomer	760		20
	N-MeFOSAA: Σ branched isomers	240		17
N-ethylperfluorooctanesulfonamidoacetic acid ^b	N-EtFOSAA: linear isomer	775		22
	N-EtFOSAA: Σ branched isomers	225		21
Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanedisulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentadisulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexanedisulfonate ^c	PFHxSK: linear isomer	811	741	9
	PFHxSK: Σ branched isomers	189	173	8
Sodium perfluoro-1-heptadisulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctanedisulfonate ^d	PFOSK: linear isomer	788	732	15
	PFOSK: Σ branched isomers	211	196	13
Sodium perfluoro-1-nonadisulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decanedisulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecanedisulfonate	L-PFD _o S	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecanedisulfonate	8:2FTS	4000	3840	16

^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.

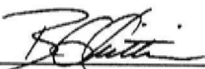
^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^c See Table D for percent composition of linear and branched PFHxSK isomers.

^d 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: 08/09/2022

(mm/dd/yyyy)

Analytical Standard Record

22I0344

Description:	PFAS - MIX MXH 1-4ug/mL	Expires:	08/08/2027
Standard Type:	Other	Prepared:	08/05/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	1.2	Department:	PFAS
Vials:	1	Last Edit:	09/26/2022 09:59 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

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:**

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
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

22J0552

Description:	PFAS - MIX 1633 200ng/mL	Expires:	01/11/2025
Standard Type:	Analyte Spike	Prepared:	10/31/2022
Solvent:	MeOH 62244	Prepared By:	Dipti Gokal
Final Volume (mls):	6	Department:	PFAS
Vials:	1	Last Edit:	10/31/2022 14:57 by DAG

Analyte	Parent	CAS Number	Concentration	Units
NETFOSA	21J0007	4151-50-2	0.8	ug/mL
NMeFOSE	21J0014	24448-09-7	0.8	ug/mL
3:3FTCA	21L0004	113507-82-7	0.8	ug/mL
5:3FTCA	21L0005	914637-49-3	0.8	ug/mL
NETFOSE	21L0006	1691-99-2	0.8	ug/mL
7:3FTCA	21L0007	812-70-4	0.8	ug/mL
NMeFOSA	21L0008	31506-32-8	0.8	ug/mL
NFDHA	22I0342	151772-58-6	0.4	ug/mL
PFEESA	22I0342	113507-82-7	0.356	ug/mL
PFMBA	22I0342	863090-89-5	0.4	ug/mL
PFMPA	22I0342	377-73-1	0.4	ug/mL
11CL-PF3OUDS	22I0343	763051-92-9	0.378	ug/mL
9CL-PF3ONS	22I0343	756426-58-1	0.374	ug/mL
ADONA	22I0343	919005-14-4	0.378	ug/mL
HFPO-DA	22I0343	13252-13-6	0.4	ug/mL
4:2FTS	22I0344	757124-72-4	0.75	ug/mL
6:2FTS	22I0344	27619-97-2	0.76	ug/mL
8:2FTS	22I0344	39108-34-4	0.768	ug/mL
NETFOSAA	22I0344	2991-50-6	0.2	ug/mL
NMeFOSAA	22I0344	2355-31-9	0.2	ug/mL
PFBA	22I0344	375-22-4	0.8	ug/mL
PFBS	22I0344	375-73-5	0.177	ug/mL
PFDA	22I0344	335-76-2	0.2	ug/mL
PFDOA	22I0344	307-55-1	0.2	ug/mL
PFDOS	22I0344	79780-39-5	0.194	ug/mL
PFDS	22I0344	335-77-3	0.193	ug/mL
PFHPA	22I0344	375-85-9	0.2	ug/mL
PFHPS	22I0344	375-92-8	0.191	ug/mL
PFHXA	22I0344	307-24-4	0.2	ug/mL
PFHXS	22I0344	355-46-4	0.183	ug/mL
PFNA	22I0344	375-95-1	0.2	ug/mL
PFNS	22I0344	68259-12-1	0.192	ug/mL
PFOA	22I0344	335-67-1	0.2	ug/mL
PFOS	22I0344	1763-23-1	0.186	ug/mL
PFOSA	22I0344	754-91-6	0.2	ug/mL
PFPEA	22I0344	2706-90-3	0.4	ug/mL
PFPEs	22I0344	630402-22-1	0.188	ug/mL
PFTEDA	22I0344	376-06-7	0.2	ug/mL
PFTRDA	22I0344	72629-94-8	0.2	ug/mL
PFUnA	22I0344	2058-94-8	0.2	ug/mL

Analytical Standard Record

22J0552

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit		(mls)
21J0007	PFAS - SAS N-EtFOSA 50ug/mL	08/12/2021	Wellington Laboratories	NEtFOSA0821M	08/12/2026	10/31/2022 14:36	by DAG	0.096
21J0014	PFAS - SAS N-MeFOSE 50ug/mL	09/22/2021	Wellington Laboratories	NMeFOSE0921M	09/23/2026	10/31/2022 14:35	by DAG	0.096
21L0004	PFAS - SAS 3:3FTA 50ug/mL	12/07/2021	Wellington Laboratories	FPrPA1020	11/12/2025	10/31/2022 14:39	by DAG	0.096
21L0005	PFAS - SAS 5:3FTA 50ug/mL	12/07/2021	Wellington Laboratories	FPePA1120	11/11/2025	10/31/2022 14:41	by DAG	0.096
21L0006	PFAS - SAS EtFOSE 50ug/mL	12/07/2021	Wellington Laboratories	FPePA1120	09/23/2026	10/31/2022 14:41	by DAG	0.096
21L0007	PFAS - SAS 7:3FTA 50ug/mL	12/07/2021	Wellington Laboratories	FHpPA1020	11/12/2025	10/31/2022 14:42	by DAG	0.096
21L0008	PFAS - SAS N-MeFOSA 50ug/mL	12/07/2021	Wellington Laboratories	NMeFOSA0721M	08/03/2026	10/31/2022 14:42	by DAG	0.096
22I0342	PFAS - MIX MXG 2ug/mL	02/07/2022	Wellington Laboratories	PFACMXG0222	02/22/2027	10/31/2022 14:48	by DAG	1.2
22I0343	PFAS - MIX MXF 2ug/mL	01/10/2022	Wellington Laboratories	PFACMXF0122	01/11/2025	10/31/2022 14:55	by DAG	1.2
22I0344	PFAS - MIX MXH 1-4ug/mL	08/05/2022	Wellington Laboratories	PFACMXH0822	08/08/2027	10/31/2022 14:56	by DAG	1.2



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-ES

Mass-Labelled PFAS Extraction Standard Solution/Mixture

<u>PRODUCT CODE:</u>	MPFAC-HIF-ES
<u>LOT NUMBER:</u>	MPFACHIFES0822
<u>SOLVENT(S):</u>	Methanol/Isopropanol (1%)/Water (<1%)
<u>DATE PREPARED:</u> (mm/dd/yyyy)	07/20/2022
<u>LAST TESTED:</u> (mm/dd/yyyy)	08/02/2022
<u>EXPIRY DATE:</u> (mm/dd/yyyy)	08/02/2025
<u>RECOMMENDED STORAGE:</u>	Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4 - C_{12} , C_{14}), three mass-labelled (^{13}C) perfluoroalkanesulfonates (C_4 , C_6 , and C_8), three mass-labelled (one ^{13}C and two ^2H) perfluoro-1-octanesulfonamides, three mass-labelled (^{13}C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (^2H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (^2H) perfluorooctanesulfonamidoethanols, and mass-labelled (^{13}C) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ^{13}C -labelled components all have chemical purities >98% and isotopic purities of $\geq 99\%$. The individual ^2H -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.


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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-(¹³ C ₄)butanoic acid	MPFBA	2000		1
Perfluoro-n-(¹³ C ₅)pentanoic acid	M5PFPeA	1000		2
Perfluoro-n-(1,2,3,4,6- ¹³ C ₅)hexanoic acid	M5PFHxA	500		5
Perfluoro-n-(1,2,3,4- ¹³ C ₄)heptanoic acid	M4PFHpA	500		7
Perfluoro-n-(¹³ C ₈)octanoic acid	M8PFOA	500		10
Perfluoro-n-(¹³ C ₉)nonanoic acid	M9PFNA	250		11
Perfluoro-n-(1,2,3,4,5,6- ¹³ C ₆)decanoic acid	M6PFDA	250		14
Perfluoro-n-(1,2,3,4,5,6,7- ¹³ C ₇)undecanoic acid	M7PFUdA	250		17
Perfluoro-n-(1,2- ¹³ C ₂)dodecanoic acid	MPFD _o A	250		19
Perfluoro-n-(1,2- ¹³ C ₂)tetradecanoic acid	M2PFTeDA	250		23
Perfluoro-1-(¹³ C ₈)octanesulfonamide	M8FOSA	500		18
N-methyl-d ₃ -perfluoro-1-octanesulfonamide	d-N-MeFOSA	500		21
N-ethyl-d ₅ -perfluoro-1-octanesulfonamide	d-N-EtFOSA	500		24
N-methyl-d ₃ -perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000		15
N-ethyl-d ₅ -perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000		16
2-(N-methyl-d ₃ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d7-N-MeFOSE	5000		20
2-(N-ethyl-d ₅ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol	d9-N-EtFOSE	5000		22
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³ C ₃)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- ¹³ C ₃)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3- ¹³ C ₃)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-(¹³ C ₈)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 08/02/2022
(mm/dd/yyyy)

Analytical Standard Record

22K0502

Description:	PFAS IIS 7C 40ng/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	11/28/2022
Solvent:	MeOH/62286	Prepared By:	Dipti Gokal
Final Volume (mls):	25	Department:	PFAS
Vials:	1	Last Edit:	11/28/2022 15:10 by DAG

Analyte	Parent	CAS Number	Concentration	Units
13C2-PFDA	22A0234	13C2-PFDA	0.04	ug/mL
13C2-PFHXA	22A0234	13C2-PFHxA	0.04	ug/mL
13C3-PFBA	22A0234	13C3-PFBA	0.04	ug/mL
13C4-PFOA	22A0234	13C4-PFOA	0.04	ug/mL
13C4-PFOS	22A0234	13C4-PFOS	0.04	ug/mL
13C5-PFNA	22A0234	13C5-PFNA	0.04	ug/mL
18O2-PFHXS	22A0234	18O2-PFHXS	0.04	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22A0234	PFAS IIS 7C 5ug/mL	01/20/2022	In house	*	01/20/2023	01/20/2022 15:49	by HGH 0.2

Analytical Standard Record

22K0503

Description:	1633- IIS Static 1ng/mL	Expires:	01/20/2023
Standard Type:	Internal Standard	Prepared:	11/28/2022
Solvent:	MeOH/62286	Prepared By:	Dipti Gokal
Final Volume (mL):	2	Department:	PFAS
Vials:	1	Last Edit:	11/28/2022 15:11 by DAG

Analyte	Parent	CAS Number	Concentration	Units
13C2-PFDA	22K0502	13C2-PFDA	0.001	ug/mL
13C2-PFHxA	22K0502	13C2-PFHxA	0.001	ug/mL
13C3-PFBA	22K0502	13C3-PFBA	0.001	ug/mL
13C4-PFOA	22K0502	13C4-PFOA	0.001	ug/mL
13C4-PFOS	22K0502	13C4-PFOS	0.001	ug/mL
13C5-PFNA	22K0502	13C5-PFNA	0.001	ug/mL
18O2-PFHXS	22K0502	18O2-PFHXS	0.001	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mL)
22K0502	PFAS IIS 7C 40ng/mL	11/28/2022	In house	*	01/20/2023	11/28/2022 15:10 by DAG	0.05

Analytical Standard Record

22L0269

Description:	PFAS - MIX 1633 10ng/mL	Expires:	06/12/2023
Standard Type:	Analyte Spike	Prepared:	12/14/2022
Solvent:	MeOH	Prepared By:	Dipti Gokal
Final Volume (mls):	10	Department:	PFAS
Vials:	1	Last Edit:	12/14/2022 12:00 by DAG

Analyte	Parent	CAS Number	Concentration	Units
11CL-PF3OUDS	22J0552	763051-92-9	0.0189	ug/mL
3:3FTCA	22J0552	113507-82-7	0.04	ug/mL
4:2FTS	22J0552	757124-72-4	0.0375	ug/mL
5:3FTCA	22J0552	914637-49-3	0.04	ug/mL
6:2FTS	22J0552	27619-97-2	0.038	ug/mL
7:3FTCA	22J0552	812-70-4	0.04	ug/mL
8:2FTS	22J0552	39108-34-4	0.0384	ug/mL
9CL-PF3ONS	22J0552	756426-58-1	0.0187	ug/mL
ADONA	22J0552	919005-14-4	0.0189	ug/mL
HFPO-DA	22J0552	13252-13-6	0.02	ug/mL
NETFOSA	22J0552	4151-50-2	0.04	ug/mL
NETFOSAA	22J0552	2991-50-6	0.01	ug/mL
NETFOSE	22J0552	1691-99-2	0.04	ug/mL
NFDHA	22J0552	151772-58-6	0.02	ug/mL
NMeFOSA	22J0552	31506-32-8	0.04	ug/mL
NMeFOSAA	22J0552	2355-31-9	0.01	ug/mL
NMeFOSE	22J0552	24448-09-7	0.04	ug/mL
PFBA	22J0552	375-22-4	0.04	ug/mL
PFBS	22J0552	375-73-5	0.00885	ug/mL
PFDA	22J0552	335-76-2	0.01	ug/mL
PFDOA	22J0552	307-55-1	0.01	ug/mL
PFDOS	22J0552	79780-39-5	0.0097	ug/mL
PFDS	22J0552	335-77-3	0.00965	ug/mL
PFEESA	22J0552	113507-82-7	0.0178	ug/mL
PFHPA	22J0552	375-85-9	0.01	ug/mL
PFHPS	22J0552	375-92-8	0.00955	ug/mL
PFHXA	22J0552	307-24-4	0.01	ug/mL
PFHXS	22J0552	355-46-4	0.00915	ug/mL
PFMBA	22J0552	863090-89-5	0.02	ug/mL
PFMPA	22J0552	377-73-1	0.02	ug/mL
PFNA	22J0552	375-95-1	0.01	ug/mL
PFNS	22J0552	68259-12-1	0.0096	ug/mL
PFOA	22J0552	335-67-1	0.01	ug/mL
PFOS	22J0552	1763-23-1	0.0093	ug/mL
PFOSA	22J0552	754-91-6	0.01	ug/mL
PFPEA	22J0552	2706-90-3	0.02	ug/mL
PFPEs	22J0552	630402-22-1	0.0094	ug/mL
PFTEDA	22J0552	376-06-7	0.01	ug/mL
PFTRDA	22J0552	72629-94-8	0.01	ug/mL
PFUnA	22J0552	2058-94-8	0.01	ug/mL

Analytical Standard Record

22L0269**Parent Standards used:**

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22J0552	PFAS - MIX 1633 200ng/mL	10/31/2022	In house	x	01/11/2025	10/31/2022 15:40 by DAG	0.5

Analytical Standard Record

22L0272

Description:	MPFAC-HIF-ES 20.0ng/mL	Expires:	06/12/2023
Standard Type:	Surrogate Spike	Prepared:	12/14/2022
Solvent:	MeOH/62244	Prepared By:	Andonios Karas
Final Volume (mls):	10	Department:	PFAS
Vials:	3	Last Edit:	12/14/2022 13:55 by ABK
Comments:	Half the concentration of previous EIS solution used for 1633/B-15. Double the spiking volume from 100 uL to 200 uL		

Analyte	Parent	CAS Number	Concentration	Units
13C2-4:2FTS	22K0095	13C2-4:2FTS	0.04	ug/mL
13C2-6:2FTS	22K0095	13C2-6:2FTS	0.04	ug/mL
13C2-8:2FTS	22K0095	13C2-8:2FTS	0.04	ug/mL
13C2-PFDOA	22K0095	13C2-PFDOA	0.01	ug/mL
13C2-PFTEDA	22K0095	13C2-PFTEDA	0.01	ug/mL
13C3-HFPO-DA	22K0095	13C3-HFPO-DA	0.08	ug/mL
13C3-PFBS	22K0095	13C3-PFBS	0.02	ug/mL
13C3-PFHXS	22K0095	13C3-PFHXS	0.02	ug/mL
13C4-PFBA	22K0095	13C4-PFBA	0.08	ug/mL
13C4-PFHPA	22K0095	13C4-PFHPA	0.02	ug/mL
13C5-PFHXA	22K0095	13C5-PFHXA	0.02	ug/mL
13C5-PFPEA	22K0095	13C5-PFPEA	0.04	ug/mL
13C6-PFDA	22K0095	13C6-PFDA	0.01	ug/mL
13C7-PFUhA	22K0095	13C7-PFUJA	0.01	ug/mL
13C8-PFOA	22K0095	13C8-PFOA	0.02	ug/mL
13C8-PFOS	22K0095	13C8-PFOS	0.02	ug/mL
13C8-PFOSA	22K0095	13C8-PFOSA	0.02	ug/mL
13C9-PFNA	22K0095	13C9-PFNA	0.01	ug/mL
D3-NMEFOSA	22K0095	D3-NMEFOSA	0.02	ug/mL
D3-NMEFOSAA	22K0095	D3-NMEFOSAA	0.04	ug/mL
D5-NETFOSA	22K0095	D5-NETFOSA	0.02	ug/mL
D5-NETFOSAA	22K0095	D5-NETFOSAA	0.04	ug/mL
D7-NMEFOSE	22K0095	D7-NMEFOSE	0.2	ug/mL
D9-NETFOSSE	22K0095	D9-NETFOSSE	0.2	ug/mL

Parent Standards used:

Standard	Description	Prepared	Prepared By	Lot Nbr	Expires	Last Edit	(mls)
22K0095	MPFAC-HIF-ES-EIS	07/20/2022	Wellington Laboratories	MPFACHIFES0822	08/02/2025	11/04/2022 12:16 by DAG	0.4